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# ECO

## Energy Conservation and Commercialization Project

A Program of USAID, Ministry of Power and ICICI

Business Plan and First Year Agenda for Indian ESCO Trade Association

**Activity 3**
**Milestone 3A**

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**Acronyms and Abbreviations**

| | |
|---|---|
| ASSOCHAM | Associated Chambers of Commerce and Industry |
| BCCI | Bombay Chamber of Commerce and Industry |
| CAESCO | Canadian Association for Energy Service Companies |
| CEEC | Council of Energy Efficiency Companies |
| CII | Confederation of Indian Industry |
| DSM | Demand Side Management |
| ECM | Energy Conservation Measure |
| ECO | Energy Conservation and Commercialization |
| EE | Energy Efficiency |
| EESBA | Egyptian Energy Service Business Association |
| EPC | Energy Performance Contracting |
| ESCO | Energy Service Company |
| FIs | Financial Institutions |
| FICCI | Federation of Indian Chamber of Commerce and Industry |
| INAESCO | Indian National Association of Energy Service Companies |
| MCCI | Marhatta Chamber of Commerce and Industry |
| NAESCO | National Association of Energy Service Companies |
| USAID | United States Agency for International Development |

## Preface

This report is part of the deliverable for Milestone 3A, Develop business plan and 1st year agenda for an Indian ESCO trade association, of the ECO project. The report covers work done under this Milestone from September 2000 through February 2001. This milestone is part of Activity 3, support to Energy Efficiency Service Industry, to assist the ESCO industry to organize itself to offer attractive business solutions to industry. Principal authors of the report are:

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## Executive Summary

This document, while bringing out the need for the formation of an association of Indian ESCO companies, also elaborates on the possible structure and charter that such an association needs to adopt to ensure its immediate and long-term sustainability. The document also elaborates on the possible activities that such an association could undertake in the initial years of its formation (business plan & first year agenda). The contents, however, are not prescriptive (not what should be), but are an articulation of what an association or a group could do, as and when it comes into being.

The document is based on the extensive discussions held with the existing ESCOs/EPC firms and leading apex level trade and industry association in India, as well as on the issues discussed in the two one-day workshops that were held in Mumbai and Delhi in November 2000. The purpose of these workshops was to assemble a group consisting of representatives of interested ESCOs and other stakeholders to ascertain interest and assist in chartering a non-profit ESCO trade association. The issues discussed in these workshops have been utilized to arrive at business plan and first year agenda of the ESCO association.

Important recommendations emerging out of these two workshops are that an Indian ESCO Association should be formed, and that the structure of the association should allow for high visibility, clear focus and flexibility to serve ESCO needs. It should preferably be a "stand alone" organization. However, if it must be housed within another structure, it must maintain a separate identity (as far as possible) if it is to be effective.

The document clearly brings out the gains that would accrue to the ESCO industry in India if it comes together to form an association – an Indian National Association for Energy Service Companies (INAESCO)

Based on the analysis of the problems and constraints faced by the nascent ESCO industry in India on the one hand, and the role ESCOs are likely to play in delivering energy efficiency service in various end-use applications, including utility DSM programs, on the other, a business plan giving mission and mandate of the proposed association, its short-term and long-term objectives, the strategy it will follow to meet the objectives, the action plan to meet the desired results, and the resources required to actually carry out the intended tasks and for association to sustain have been presented in this document.

Issues that need to be addressed in the formation of the association, in deciding about its structure and in arriving at its charter, have also been deliberated at length in the document.

## Formation of Association

There are several factors (focus, flexibility, freedom, etc.) on which stand-alone structure scores, while there are factors like credibility, recognition, outreach on which stand-alone does not seem to be a feasible idea. In the initial stages of any organizations life, distinct identity, focus, freedom and flexibility are as important as recognition, out-reach and credibility. While the stand-alone status provides the former, becoming part of an existing service organization seems to provide the latter, at least in the immediate future. Exploring ways to reside EPC/ESCO industry body within the structure of an existing service organizations as a separate and independent group or an association that uses the name, outreach and influence of the parent body to gain credibility and recognition, but at the same time maintains a distinct and separate identity with, as far as possible, separate board, offices, staff, even letter heads, business cards, etc., perhaps seems to be the most

optimal way in which association needs to be formed, in order to main its immediate viability and ensure its long-term sustainability.

**Structure**

A stand-alone organization has several strategic and operational advantages. Hence in the long-term, the proposed body/Association, perhaps needs to have a stand-alone character with graded membership structure. The document suggests a three-tier structure. ESCOs could be awarded the primary membership status with full voting rights, as well as minimum guaranteed number of places on the Board. The second category of membership could be for non-ESCOs having an interest in staying close to the ESCO industry. A third category could be for national and international trade/business and industry associations/bodies, including international ESCO associations. The exact decision regarding this is best left for the members themselves to decide. One caveat, however, needs to be mentioned. Since numbers bring dues, temptation to put over emphasis on numbers needs to be avoided. After all, what is needed is quality membership, providing effective and efficient direction and leadership.

Financial institutions have a larger role to play in the growth of ESCOs in India and it is they who eventually have to play an essential part in the ESCO project cycle. They therefore need to be accorded special status in the proposed body. The advise from honorary members drawn from financial institutions can provide crucial support in funding energy efficiency projects on performance contracting approach

**Management**

While not making any prescriptions, the document has described two possible ways in which day to day functioning of a stand-alone ESCO association could be organized. One way is to have a separate office staffed by a key individual supported by required staff. Such a key individual (Director, Manager, or Administrator) should manage membership. He/she must concentrate on matters of member services and those things that attract new members who pay dues. He/she must watch for opportunities to raise funds beyond dues to support activities of the organization. To begin with one person, assisted by a secretary could serve the purpose.

Some of the Associations, however, have adopted a different management strategy. Under this, the affairs of the Association are managed by one of the core or primary members (usually the President of the Association or his firm) for a specified period of time and the responsibility is rotated among the core members. In India, examples of such way of managing can be found in the working of the Associations of manufacturers belonging to lighting industry, refrigerator and air-conditioning industry, etc. The proposed INAESCO could also adopt this management mode.

**Immediate Future**

While the above coverage is more appropriate to the question of how the association should be organized in the long-term; in the immediate future, as a part of another service organization, the structure of the association may have to be different. The document lays out possible ways in which this could be done and initiated. Again two ways are suggested. First way is to get registered as a separate body or an association (legal entity) and then seek associate membership of (or some kind of affiliation with) the existing service organizations. Second way is to get organized within the existing area of work of the service organization. The manner of organizing could be as a "Committee/Division" or as a "Working Group" within an existing area of work of the service organization. For example, the ESCOs/EPC firms could get organized as a

"Division/Committee on ESCOs/EPC" or as "Working Group on EPC/ESCO" under the energy area of the CII. Several examples exists of Associations having started under this arrangement (a Division or a Working Group) with CII. With the passage of time, with increased activities and increased visibility and credibility, these divisions and working groups have gone on to become full fledged Associations. The case of Indian Boiler Manufacturers Association, serves as a good case study. Presently, too, CII, under its energy work area, is hosting a Committee on oil and gas and a core group of Coal Producers.

How does one go about initiating the formation of such a Division a Committee or a Working Group? Normally the service organizations will want that, at least one member of the proposed INEASCO is also a member of the service organization. This member, who is member of both the bodies, can then make a request to the management of the service organization to allow the proposed new association to be a part of the service organization in the form of a working group/committee/division. Alternatively, the management of the service organization may allow the proposed new association to be part of the parent body on the basis of a request. Organizations like Ministry of Power or USAID could be the right organizations to send such requests to the management of these apex level service organizations.

**Charter**

INAESCO's mandate is **FEETFIRST,** symbolising the present Industry status and the fledgling nature of the EPC Industry.

- Foster the development of ESCO companies
- Educate end-users on EPC.
- Endeavor to expand the market for EE.
- Train financial community on EPC's
- Foster EE/DSM programs in utilities.
- Inculcate EE initiatives with utilities.
- Reinforce accreditation.
- Sustain INAESCO.
- Train stakeholders

**INAESCO Objectives**

The overall objective of INAESCO is to increase the market penetration of energy performance contracting services in India, through:

- Development of an EPC infrastructure in India that will ensure the availability and implementation of a high standard of EPC services.
- Increased awareness and understanding of EPC in India, thereby, generating support from major allies and creating demand for EPC services.
- Establishment of commercial linkages and networking platforms in energy performance contracting.

**INAESCO Work Plan**

Following tasks are planned.

**Start-Up**

- Identification of interested parties to become "Project Partners."

- Correspondence among the project partners to confirm the approach to and logistics of the project.
- Meetings/conferencing among the partners.
- Agreement on Business plan
- Development of By-laws, Membership Designations, including establishing membership fees and operating regulations.
- Registration and launch of INAESCO as a non-profit body
- Setting up of INAESCO office, including staffing.
- Setting up of Committees to oversee INAESCO activities for year 1

***INAESCO activity Plan For Year 1***

The year 1 plan will have following main activities:

Activity # 1:Development of tool packages for EPC
Activity # 2:Development of a business exchange program
Activity #3: Undertake ESCO developmental activity to boost demand for ESCO services in India and to strengthen ESCO organizations
Activity # 4: Conduct of study tour to US, where representatives of the financial institutes and banks are also included to expose them to ESCO operations and concept
Activity # 5: Undertake marketing of the ESCO concept and services

**Estimates of Funds Requirement**

It has been estimated that preliminary and start up expenses of the order of $ 15,000/- while running expenses of about $ 43,000 annually would be required to set-up and start the activities of the association, during the initial years. A combination of membership fee and grant-in-aid have been suggested as the possible sources for the required funds.

**Possible Resource Mobilization Strategy**

While in the long-run, dues or contribution from primary and other members and other revenue generating activities like e-platform, training, accrediting, trade promotion, conferencing, providing legal and contractual services etc. may be enough to meet the capital and revenue expense requirements of INAESCO; in the initial years, much of the resources will have to be mobilized from external sources. External contributions could come in two ways. Firstly, the external contribution could come as a direct grant assistance to implement the business plan activities. Secondly, the external assistance could come, again as a direct grant, but as a start up seed money. The seed money, which is essentially in the nature of initial equity, provides an opportunity to earn interest, which could then be used to support the working capital requirements of INAESCO. Bi-lateral donors and the government could be the possible sources of such external contributions.

## 1.0 INTRODUCTION

As part of the USAID assisted Energy Conservation and Commercialization (ECO) project, Nexant organized two workshops, one each in Mumbai & Delhi with the objective of determining whether there existed sufficient interest amongst the members of the energy efficiency community to form an Indian ESCO association to provide a boost to the Energy Performance Contracting (EPC) Industry here. And if so, what could be the possible mandate for such an association?

EPC is a turnkey engineering and general contracting service that provides energy management services to facility and building owners on a **performance** basis. The attraction of EPC is that it represents a private sector driven means of implementing cost-effective energy management services at a time of scarce capital among donor agencies, governments and utilities. As elaborated below, India has an enormous potential for energy management investments, which could be implemented through EPC services.

However, EPC is not a business approach that can be easily and effectively implemented without an "industry infrastructure" that includes capable service providers, industry accreditation and development and financial and risk management tools and techniques. These fundamental elements are not yet in place in India but can be effectively addressed through the partnership approach embodied in the formation of an ESCO association. With a view towards addressing this issue two workshops were convened at Mumbai and Delhi respectively.

The findings from these workshops have been incorporated into the body of this report. Chapter 2 deals with the workshops conclusions and recommendations while Chapter 3 summarises the need for an ESCO association. Chapter 4 discusses the possible structure and charter that an association could adopt, followed by an illustration of revenue model for the immediate and long-term sustainability of the association. The Chapter also discusses the possible path that an Indian ESCO association could walk- A business plan for INAESCO (Indian National Association of Energy Service Companies) for the first year of operation.

## 2.0 OVERVIEW OF THE WORKSHOPS

The workshop was seen as a forum to ascertain ESCO and other stakeholders interest and their views on the need for forming a non-profit association of energy service companies in India.

***Report on the Workshop in Mumbai***

Mr. James Hansen from KIONA, described the mission, member benefits and member profile for the National Association of Energy Service Companies (NAESCO), the Canadian Association of Energy Service Companies (CAESCO) and the Egyptian Energy Service Business Association (EESBA). Mr. Hansen also read an evaluation from Mr. Emad Hassan, EESBA's Executive Director, regarding the current status of EESBA and the initial difficulties in starting an association.

Dr. Shirley Hansen from KIONA, then provided a critique of these association and the lessons learned that might be germane to the discussion of developing an Indian ESCO Association. Concerns expressed included the apparent lack of industry leadership by NAESCO and the quality of its member services. She noted the inclination of CAESCO to be influenced by its largest members. She also expanded on the difficulties EESBA is having and reviewed the current state of the ESCO industry and association in Korea.

Mr. Manoj Saha from Saha Sprague Limited, then made a presentation on the need and relevance of an Indian ESCO Association, designed to provoke discussion.

In the discussion that followed, participants indicated that they felt the following services from an Indian ESCO Association would be of value. The participants indicated they believe the following services should be provided by an association

- Assistance in marketing the performance contracting concept.
- Collection of case studies and the establishment of a data base.
- Ways to encourage financial institutions to fund energy efficiency and performance contracting.
- Help in creating standard contracts and Measurement & Verification (M&V) procedures.
- Guidance and encouragement to new ESCOs.
- An accreditation program for energy managers and for energy auditors.
- Guidance and advocacy regarding legal concerns, such as tax issues.
- Strategies to encourage and influence government in India to be a driver in achieving greater energy efficiency.

There was a clear consensus in the Mumbai workshop that an association is needed. Reservation were expressed that the critical mass to support a stand alone ESCO association in India did not yet exist. The viability of forming an Indian ESCO Association housed within the CEEC was discussed. Several participants expressed concerns that CEEC did not have the needed credibility as yet to attract and support such an endeavor. On the other hand, some of the board members of the CEEC, present in the workshop, offered reassurances on behalf of CEEC.

***Report on the Workshop in New Delhi***

The general presentation format offered in Mumbai was followed in New Delhi. Mr. Ahuja of CONSERVE presented Mr. Saha's remarks, as Mr. Saha was ill and unable to attend.

In the discussion that ensued, the participants identified a number of services an ESCO association might offer to its industry and to help meet Indian energy efficiency needs. The services mentioned by the participants included:

- Getting Financial Institutions (FIs) and bankers "on board" and binding FIs to a model they would accept. Special attention was paid to overcoming the obstacles presented by the size of funding needed for energy efficiency (EE) projects.
- Establishing standard basic contracts
- Creating a procedure to evaluate projects and to evaluate ESCOs.
- Providing venues for networking and dialogue – among ESCOS and with related professions.
- Creating a forum for ESCOs to be heard, especially by governments. (This topic generated considerable discussion and support.)
- Creating visibility for an ESCO industry – with firms identifiable as ESCOs, not just vendors. Specifically, helping to establish that ESCOs are more than firms selling EE product, services, and/or audits.
- Developing a data base that would provide talking points, such as market size, opportunity, and a clearly defined need for EE in India.
- Develop markets for ESCO services.

After the discussion of services an association might offer, a vote was taken as to whether an ESCO association should be created. All but one person present voted for the creation of an ESCO association. That person, by his remarks, was not opposed to the creation of an association, but rather wished to express some concerns regarding its perceived power – by member strength, intellectual property, or its balance sheet.

There was consensus that a critical mass did not yet exist in the ESCO industry to support a separate association. It was clear from the comments that a stand alone association would be preferred, but without outside support, it could not function effectively at this time. Some discussion of putting the nucleus of an ESCO association under the umbrella of another organization, such as CEEC, followed.

***Conclusions and Recommendations***

From the presentations and comments offered during these two workshops, the following conclusions and recommendations have been drawn.

*Conclusions*

1. An Indian ESCO Associations is needed to help foster an ESCO industry, facilitate energy efficiency financing and more effectively address Indian energy efficiency needs.

2. In its initial developmental stage, an Indian ESCO Association will need strong guidance and some support. A stand alone association would be preferable, but the Indian ESCO industry is not large enough to support a separate association.

3. An association should have or provide the following services:

- Creating visibility for an ESCO industry – with firms identifiable as ESCOs, not just vendors. Specifically, helping to establish that ESCO's are more than firms selling just EE products, services and/or audits.
- Developing the necessary tools (Standard contracts and M&V protocols) to help popularize the performance concept.
- Assistance in marketing the performance contracting concept.
- Develop programs to encourage financial institutions to fund energy efficiency and performance contracting.
- Help energy efficiency companies graduate to full service ESCO's.
- Provide guidance and encouragement to new ESCO's.
- Develop an accreditation program for ESCO's
- Provide guidance and advocacy regarding legal concerns, such as tax issues.
- Develop strategies to encourage and influence government in India to be a driver in achieving greater energy efficiency through the EPC route.
- Creating a procedure to evaluate projects.
- Providing venues for networking and dialogue – among ESCOS and with related professions.

*Recommendations*

1. An Indian ESCO Association should be formed. The need for an organization to support and enhance the growth of an energy efficiency service industry is apparent. Although the industry is still in its infancy a well organized and active organization can speed the needed growth.

2. The structure of the association should allow for high visibility, clear focus and flexibility to serve ESCO needs.

3. The Indian ESCO Association should be a "stand alone" organization if at all possible. At this stage of the industry's development some external support and direction would be required. If it must be housed within another structure, it must maintain a separate identity (as far as possible) if it is to be effective.

4. The business plan and first year agenda should be framed to be clearly responsive to the needs identified by those who attended the ESCO association meetings reported above.

***Summary***

Discussions during the two workshops, thus, clearly brought out the need to have an Indian ESCO Associations to help foster an ESCO industry, facilitate energy efficiency financing and more effectively address Indian energy efficiency needs. It was further brought out that, in its initial developmental stage, an Indian ESCO Association will need strong guidance and some support. A stand-alone association would be preferable, but the Indian ESCO industry is not large enough to support a separate association.

Important recommendations emerging out of these two workshops are that an Indian ESCO Association should be formed, and that the structure of the association should allow for high visibility, clear focus and flexibility to serve ESCO needs. It should preferably be a "stand alone"

organization. However, if it must be housed within another structure, it must maintain a separate *identity (as far as possible)* if it is to be effective.

## 3.0 DEVELOPMENT OF AN INDIAN ENERGY PERFORMANCE CONTRACTING INDUSTRY: THE CASE FOR INAESCO

### 3.1 Introduction

Energy Performance Contracting (EPC) is a turnkey engineering and general contracting service that provides energy management services to factory, facility or building owners on a **performance** basis. The attraction of EPC is that it represents a private sector driven means of implementing cost-effective energy management services at a time of scarce capital among donor agencies, governments and utilities. The promise of EPC development is heightened by the reality that it is a proven industry and service in North America where it is generating a billion dollars per year in sales. The North American EPC industry has evolved over a 20 year period and today the tools, procedures and approaches used in this industry are proven and backed by credible firms and industry associations. The EPC approach has attracted the interest of governments, utilities, the private sector among less developed countries as well as among the multi-lateral and bi-lateral development agencies. This experience has also revealed that there are several fundamental aspects to an EPC infrastructure:

- The existence of credible and quality providers of EPC services (referred to as Energy Service Companies)
- The existence of a credible industry association representing the EPC industry
- The tools and techniques that support the legal, administrative and financial basis for EPC services to be implemented
- Evidence in the targets markets that the service does indeed work and is available and accessible.

India has an enormous potential for energy management investments, which could be implemented through EPC services. The development of an EPC industry in India will result in significant economic, social and environmental benefits to India. The acceleration and expansion of energy management services in India will help delay or avoid, environmentally and financially costly energy supply developments. In addition, this will help establish the foundation for new enterprise development in India, enterprises that will have the capability to deliver state-of-the-art EPC services.

USAID is in an excellent and highly strategic position to support the development of a Indian EPC infrastructure through development of the ESCO association. Further, INAESCO will effectively complement the current ECO Project Activities in India. ECO has within its deliverables, effective development and demonstration projects for industrial and Federal energy management through Performance Contracts, a strategy which has proven hugely successful in the US and the 15 years of that industry evolution and experience can be brought and customised to the Indian market.

Further, the recent protocol signed between the US Secy. of State Ms. M. Albright and Mr. J Singh, the Indian Foreign Minister, envisages energy efficiency implementation to the extent of 15%. To meet this target, it will be necessary to have in place a credible EPC industry. INAESCO can provide the seeding necessary to achieve this.

Specifically, this Chapter discusses the following elements:

- The role of energy management in meeting India's development needs and priorities.
- The EPC concept
- EPC potential in India
- EPC industry in India
- Future Challenges and the need for a key player in the development of EPC in India – A case for INAESCO

Each of these elements is addressed below.

## 3.2 The Role Of Energy Management In Helping To Meet India's Development Needs And Priorities

There is increasing awareness within India that sustainable development needs to become a fundamental priority in India. India is a country of many complexities and diversities and the country faces enormous social issues. Like many countries world-wide, Indian institutions, industry and individuals must constantly address the seemingly impossible dilemma of balancing social and economic development with the need to protect and sustain the environment. The development of a sustainable energy future is one key "piece of the puzzle" in addressing this dilemma.

Energy is the "life-blood" of an economy and the provision of energy services (motive power, process heat, transport etc.) in a growing economy implies also an increased demand for the use of energy. It is no surprise that the highest per capita use of energy lies among the most developed countries of the world, including the US. However, the so-called energy crises in the 1970's and 80's precipitated among the developed countries a recognition that the linkage between GDP growth and energy use had to be de-coupled. For the most part, the developed world succeeded in this quest but it remains a challenge among the less developed countries, particularly those that have well evolved economies such as India.

At the present time, India's per capita energy use is about 15 % of the U.S. Currently India's energy consumption is expected to grow between 8 and 9% annually, compounding the existing energy shortage problems. While it may be possible, eventually, to achieve a roughly six-fold increase in per capita energy consumption in India, the fundamental question is whether it is necessary and, indeed, prudent from social, environmental and financial perspectives. In effect, India has two "energy development paths" to consider.

### 3.2.1 The Status Quo

The first path reflects the *status quo* and assumes that countries such as India will just continue to develop more supplies of primary energy without improving the efficiency with which energy services are met. Despite the growing use of renewable sources of energy, India continues to rely on fossil fuel based power plants for its primary energy supply and, to a lesser degree, large-scale hydro-electricity plants. This path is essentially untenable from the perspectives of both the Indian environment and economy.

The environmental cost associated with a continuation of this track includes, at a minimum: loss of bio-diversity and ecological habitat, growing air pollution including harmful particulates, growing greenhouse gas (GHG) emissions and water pollution.

The reality is also that capital shortages will prohibit the rate of expansion of primary energy supply to meet the economic growth goals established by India. To put this into perspective, the World Bank estimates that, to meet projected electrical demand growth, less developed countries will require investments of **$ 100 billion per year** for the next 30 years. Yet, at the same time, the Bank estimates that there will be about a **$30 billion shortfall** in necessary foreign exchange to meet this demand. Keep in mind that this shortfall pertains only to electric power and does not address the need for other forms of primary energy supply. The economic implications of the first path also need to take into account the costs to society and individuals of environmental damage.

### 3.2.2 The Sustainable Energy Future

The second path is to opt for an aggressive level of energy management to improve the performance in meeting future energy services, combined with an aggressive level of investment in renewable forms of energy. The pay-off with this approach is reduced environmental degradation along with numerous economic spin-offs, including development of a new EPC industry.

As a starting point to the discussion of EPC, it is helpful to provide a brief clarification of what we mean by energy management. Specifically, it potentially covers four categories of potential services:

**Energy efficiency:** This refers to improvements in the efficiency with which energy is used to provide certain "energy services" (e.g., lighting, motive power, cooling). Efficiency gains can be achieved by: i) introducing process improvements, ii) designing more efficient facilities, iii) replacing standard with higher-efficiency products (at the time of natural replacement or prior to when the product reaches the end of its useful life), iv) introducing new or advanced systems to control and manage energy use, v) retrofitting the building envelope, vi) re-commissioning the facility, and vii) improving operation and maintenance.

**Fuel substitution:** This refers to the substitution of one form of energy for another in meeting a specific energy service requirement.

**Cogeneration:** This refers to the provision of combined electricity and heat services from a common supply facility in which fuel is sequentially used to generate electricity and a useful form of thermal energy.

**Other:** This refers to potential emerging services including fuel purchasing, industrial third party service utilities (e.g., the supply of compressed air), total building management and environmental management. With the emergence internationally of utility deregulation and restructuring, the development and market positioning of these new services has grown in stature.

With the support of international donor agencies India has begun to embark on some ambitious energy management activities. However, these initiatives are relatively new and they lack the support of private sector financing. For example, as of 1996, the cumulative impact of electricity energy efficiency measures introduced by IREDA was about 2360 GWh/year, representing about 1% of total annual electricity consumption.

## 3.3 The EPC Concept

EPC is a turnkey engineering and general contracting service that provides energy management services to factory, facility or building owners on a **performance** basis. **Rather than contracting for the installation of a particular product, system or service, the client contracts for a specific result.** For EPC, the result being sought most often is units of energy savings, converted to actualised and current monetary values. The return on investment, regardless of the form of financing used, is directly related to the performance of the energy management measures.

One of the major reasons for the growing international success of EPC is that it involves a fundamental transfer of risk away from the energy user to the firm supplying the service (commonly referred to as the **Energy Service Company or ESCO**). From the perspective of factory, building or facility owners/managers, there are many barriers, which continue to impede the implementation of cost-effective energy management measures. Whether these barriers are perceived or real, the effect is the

same...measures, which can be cost-justified, are not implemented because of a variety of factors that, when taken together constitute an insurmountable risk. In order to "manage" this risk, it is necessary for the technical measures to perform in such a way that the energy efficiency improvements, when converted to currency, **equal or exceed** the projected financial requirements for the contract term.

Fundamentally, risk transfer through EPC occurs because the ESCO **guarantees** the energy performance and, therefore, the financial obligations of the project for the full term of the contract. Regardless of the financing instrument used, the ESCO will be under an agreement with the owner to guarantee the performance of the project for the full duration of the contract. The costs of shortfalls in that performance are borne by the ESCO. With the guarantee, the energy user will be, at a minimum, no worse off than before the project was initiated.

To summarise, the major benefits to a factory or facility owner or operator of EPC are:

- Reduced operating costs and improved overall financial performance
- Improved energy services (e.g., better lighting, greater comfort, better aesthetics) resulting from installation of new equipment
- Greater awareness of and attention to energy efficiency on the part of management and employees
- The transfer of most risks to the ESCO during the term of the contract
- No capital outlays are required, improvements are financed by savings achieved
- Once an agreement has been negotiated, no further management attention needs to be given to the project, this responsibility being assumed by the ESCO.

## 3.4 The EPC Potential In India

### 3.4.1 *Brief Overview*

Overall, the Indian market for EPC services is huge but largely unquantified. The only existing attempt at an analysis indicates potential annual sales at about US$ 35-45 million in 1999, with the potential to grow by 25%/year over the next decade. However, the EPC market in India is likely to be much larger when one factors in the potential for cogeneration, third party utilities and environmental services such as water demand management.

Based on what we know about the energy management markets in India and elsewhere, it is evident that key EPC markets in India are likely to be:

- *Industry*: This sector currently accounts for most of the non-transportation energy use in India. Many industry segments in India must make significant capital investments to modernize and increase competitiveness. EPC offers an important means for integrating energy management into these capital upgrades.
- *Utilities.* This predominantly government owned sector is beset with financial losses and is going through a restructuring process which cannot ignore the potential of EPC services which will enable it to cut its technical losses as well as non-technical losses which occur to a large extent due to agricultural subsidies. Successful examples of past successes through the EPC route in Private utilities already exist
- *Agricultural Sector:* Official statistics shows that, after industrial sector, agriculture is the second highest consumer of electricity. Several studies have shown that, there exists a

potential to save 30-50% [1]of the agricultural energy consumption by adopting low cost-financially viable energy efficiency measures. As the agricultural tariffs are heavily subsidized, very little incentive exists for the farmers on their own to implement any of the energy efficiency improvement measures. Utilities on the other hand have a lot to gain if they capture the savings in the agricultural sector, as the savings from the agricultural sector can be transferred to high tariff paying industrial sector. Since Utilities on their own are not in a position to implement energy efficiency improvement measures, EPC route is the only way to capture the savings.

- *Commercial Buildings*: The commercial sector energy use in India is growing faster than that of industry and, hence, this will prove to be a key target market.
- *Municipal Sector:* This is another sector, where very large energy saving potential exists[2]. This is also a sector where examples of past success – involving EPC firms, private Utility and the Municipal Corporation - exists. This is also the sector, which provides opportunity for integrating energy savings and water savings
- *Institutional facilities*: Government at all levels in India contain vast inventories of buildings and other facilities that desperately require energy management upgrades. The government is keen and willing as is evident from the fact that several federal buildings are even right now contemplating retrofits through the EPC approach. These include " Shram Shakti Bhawan " the headquarters for the Union Ministry of Power and the NDMC headquarters. Initiatives taken by companies like Shivalika Proenergetics Ltd. and DSCL are paving the way for an Indian federal energy initiative.

### 3.4.2 *Influencing Factors*

The experience in North America shows quite clearly that market intervention on the part of government, utilities and other agencies has helped to foster the development and growth of the EPC industry. Although EPC has already begun to emerge in India, it has been in a largely ad hoc fashion, without much institutional support and without access to the valuable experience and capability of proven EPC industries elsewhere. Some of the more strategic events and factors supporting the momentum towards EPC in India are briefly summarised below.

There are several key factors that are likely to support the growth of an EPC industry in India:

- Energy user interest in reducing energy costs or supply risks and increasing productivity.
- Competition both globally and regionally is fostering a heightened interest in services that reduce energy-operating costs as well as improve productivity. This interest is fueled, in part, by growing energy prices. At the same time, lower inflation is encouraging consumers to shop for better value and industries to reduce costs and increase industrial efficiency.
- Unprecedented change is occurring in the Indian power sector through restructuring and deregulation. One key outcome will be increased competition among power suppliers, at both the wholesale and retail levels of the market; thus, suppliers of energy will be seeking innovative means of retaining and expanding market share. Energy users will be seeking not

[1] A study carried out in the state of Haryana, under *USAID assisted EMCAT Phase II project estimates the* energy saving potential in 903 pumps on four 11kV feeders to be of the order of 43.4%.

[2] USAID studies carried out under EMCAT Phase II and Sustainable Cities projects, indicated following energy saving potential in Kolhapur, Pune and Faridabad Municipal corporations, respectively:
KMC: Investment = Rs. 22 Million; Savings per year = Rs. 29.7 Million
PMC: Investment = Rs. 25 Million; Savings per year = Rs. 18 Million
FMC; Investment = Rs. 35 Million; Savings per year = Rs. 45 Million

only lower prices but better services. A similar situation in the U.S. is fostering the entry of new ESCOs to service a growing market.

- The emergence of natural gas as an alternative fuel source for generation, is prompting huge interest in optimizing energy use and introducing natural gas technologies, both for delivering energy services and delivering energy utilities. This includes cogeneration, where emerging ESCOs in India are active on a smaller scale, incorporating state-of-the-art technologies into an integrated approach that includes energy efficiency.

Collectively, these influencing factors are going to increase the demand for energy management services. EPC is fundamental to meeting that demand.

### 3.5 EPC Industry in India

EPC industry in India, or the ESCO business as it is some times called, is characterized by recent origin and very small size.

Character and the status of the EPC industry in India can be described as:

- EPC industry in India is very young; its development having started only about 7/8 years a go.
- Less than 7 firms make up the entire EPC industry in India.
- Of the 5/6 EPC firms that are there, three or four belong to or are part of existing medium sized Indian owned product or manufacturing companies. While one out of these firms has a North American ESCO as a partner, the other are home-grown firms. Another firm, which started as an Indo-American joint venture, now has only an American part of the joint venture to support it, the local partner having dis-associated himself from the venture. Whether belonging to an existing company or having a joint venture, the fact of the matter is that all EPC firms in India are relatively small in size. The parent companies too, do not have very deep pockets and hence can provide only a limited support to these nascent firms. Consequently, none of these 5/6 EPC companies have strong balance sheets, and thus do not have the ability to bring financing to the deal. Shared savings type of contracts are thus not possible in the present Indian context.
- Because of their recent origin, most EPC firms in India are at a stage where they are implementing their projects. Most of the firms, thus, hardly generate any revenues. They, therefore, are not cash rich, and are not in a position to expend large sums of money, either individually or collectively, towards activities which are not directly linked to their core business.
- Unlike North America, where EPC business is dominated and driven by projects and opportunities in the commercial and building sectors, in India, EPC, like all other energy efficiency business, is almost entirely comprised of projects and opportunities in the industrial sector.
- Since most EPC firms in India are at a stage where they are implementing their projects, hardly any experience or indication exists as to how the performance contracts have worked or will work in India. This is an important point in Indian context as, given the none too healthy status of Indian legal system coupled with the fact that almost entire EPC activity in India is in the industrial sector where measurement and verification of savings is costly and complicated, many in India perceive "non-payment of bills" as a major risk.
- Most EPC firms in India, so far, have had only limited or isolated successes, and that too after a long gestation period. Each firm, therefore, zealously guards the problem solving and business development techniques it has developed as secrets, which cannot be shared

with others for fear of loosing competitive advantage. In fact, very little interaction takes place between the EPC firms, and there is very little sharing of experience, information or exchange of views.

## 3.6 Future Challenges and the Need for a Key Player in the Development of EPC in India – A Case for INAESCO

Although EPC is increasingly being looked upon as a means to accelerated and widespread delivery of energy efficiency at end-use points, the EPC industry in India faces several challenges - uninterested customers, reluctant banks, very few functioning EPC firms, and lack of strong governmental support – being some of the major challenges. Description below provides insight into how some of these challenges are limiting the growth of EPC industry in India, and how formation of an Association of EPC firms will help in overcoming these challenges. A further discussion on the challenges and the need for the formation of the association can be seen in Annex 1, which contains a paper entitled "A discussion on the need for and potential role of an ESCO Association" , by Mr. Manoj Saha of Saha Sprague Limited.

### 3.6.1 Challenges to Business Development, Marketing and Project Implementation

*Uninterested Customers:* EPC/ESCO is a totally new concept in India, and hence the awareness or knowledge of this concept among energy users (customers) is at a very low level. Low level of awareness and knowledge not only has resulted in lack of interest, but has also resulted in customers failing to appreciate the real value of the EPC/ESCO services[3]. Low level of knowledge and education about the concept has also meant that customers look at it suspiciously, and the fact that most EPC firms in India are at a stage where they are implementing first set of projects, and hence are hardly in a position to show working examples or case studies, further compounds the suspicion. In the words of one of the EPC firms in India[4], "most clients/customers find this concept (*EPC or ESCOs or third party financing or shared savings*[5]) to be strange, somewhat new and untried, too good to be true, and therefore view it suspiciously." Together, this has lead to a very low level of demand for EPC or ESCO services in India.

Concerted efforts to educate the market/customers thus would be required to bring about all-round growth in the demand for EPC/ESCO services in India. Given the present status of the EPC firms in India, however, it is not difficult to see that no individual firm has the means to effectively carry out market education and development work, separately. Organized work by all the firms would not only go a long way in creating the necessary awareness and education, but would also provide credibility to the efforts.

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[3] Especially true in India, where, because of the weak balance sheets of the EPC firms/ESCOs, the customer still has to finance the capital investments; which he sees as no different than the traditional way he has been buying goods and services from energy efficient product manufacturers, energy auditors, process consultants, and engineering and design firms. In customer's view, since he is financing the investments, he bears the repayment (to lenders) risk, whether or not the guaranteed performance by an EPC firm/ESCO is actually achieved. Clearly, customers, especially the credit worthy customers, see no value addition due to ESCO/EPC firm.

[4] From a presentation - "A discussion on the need for and potential role of an ESCO Association" , by Mr. Manoj Saha of Saha Sprague Limited. Presentation made at the ECO wokshops on Formation of Indian ESCO Association , held in Mumbai and New Delhi on 3rd and 6th November 2000, respectively.

[5] Emphasis added

*Supply side weaknesses:* EPC firms sell energy savings or avoided costs. The revenue earned by the EPC firms and the profits they make thus depend on the amount of energy savings achieved. EPC firms enter into a contract with their customers for a fixed period of time, under which, the customers have to guarantee that the payments are made, in line with the savings achieved, to the EPC firm/ESCO automatically without any recourse, once the extent of savings are established. To things are crucial here: the Contract and the measurement of savings. Since, energy savings are not measurable directly (they have to be estimated by subtracting "after" consumption from "before" consumption), severe market barriers exist for using performance contracting as a standard business practice.

In several countries, Standard Contracts as well as Standard procedures for measurement and verification of savings have been developed. In such countries, performance contracting has come to be accepted as a standard business practice. In India, presently no such Standard contracts or Standard procedures for the measurement of savings exists. This is a major challenge not only for developing the business but at the implementation stage as many disputes arise in the estimation of savings. In the absence of Standard contracts and measurement procedures, individual EPC firms have to go through a long and protracted process before they can agree with their customers on contract and savings measurement modalities. Advantages of organized behavior are apparent here, as Standard Contracts and Measurement procedures, developed and approved by an association will go a long way in providing credibility to performance contracting, there by strengthening the EPC firms/ESCOs ability to exploit their business potential better.

*Market size:* Very little is known, either about the size of the EPC market in India or its structure in terms of needs and requirements of different segments. Consequently, EPC firms find it very hard to do any business or capital planning and attract or raise funds. An association of EPC firms/ESCOs could fill this gap by providing an estimate of the size of the different segments of the market and an elaboration of their needs and requirements. This will not only help the EPC firms in their own business and capital planning, but will also go a long way in helping the EPC firms in capturing the attention of policy makers and the financial community, which is so vital for the growth of the EPC/ESCO industry in India.

*Inability to tap the huge potential available within the Utility sector:* Huge potential exists to reduce transmission and distribution (T&D) losses, improve power factor, rationalize loads, within India's utility sector. Traditionally, the State owned Electricity Boards have been involved in planning and implementing T&D loss reduction and other efficiency improvement activities. Due to on-going power reforms and unbundling of integrated utilities, immense opportunities have opened up for the EPC/ESCO industry to undertake T&D loss reduction and many other system improvement works within utilities' transmission and distribution networks. Several barriers, however, exists to the exploitation of the opportunities that have opened up. While it is almost impossible for an individual EPC firm/ESCO to overcome the existing barriers to the penetration in this market, an association of EPC firms/ESCOs would help, as several EPC firms can come together under the umbrella of the association and jointly execute these projects.

### 3.6.2 Financial Challenges

Like elsewhere in the world, availability of local finance for EPC/ESCO project financing on terms which meet the project needs is absolutely essential for the development of EPC industry in India. In India, which otherwise has a mature financial market, financing of ESCO/EPC type projects (or far that matter, even financing of energy efficiency projects in general) has not

picked-up because of prevalence of several barriers. Unavailability of long-term capital (short term lending), high interest rates, lenders' preference for asset based or collateral backed or balance sheet based financing as opposed to project financing[6], unfamiliarity of lenders with financial structuring of energy efficiency projects, lack of familiarity of lenders with ways and means to collateralize energy efficiency, are some of the important reasons why barriers are prevalent. Some of these are due to economy related and/or systemic factors (e.g. high short-term interest rates, unavailability of long-term financing, which are linked to inflation rate and monitory & credit policies of the central bank), and hence even an association of ESCO companies can address these only in a limited way. Some of these barriers are, however, awareness or perception related. Lack of awareness about the EPC concept, lack of credibility about the working of the EPC concept, lack of appreciation of how EPC projects help in mitigating performance (hence, financial) risks, etc. It is here that an organized behavior by existing ESCOs/EPC firms will go a long way in bridging the awareness and perception gaps.

### 3.6.3 Lack of Government support

Experience in North America and elsewhere has shown that strong government support through facilitative and regulative policies and programs is required to nurture the EPC/ESCO market. Following extracts from an ESMAP Document[7] amply supports this observation.

"The North American ESCOs developed as the result of government policies and programs. The Federal and States institutional facilities program launched the ESCO industry. The mandated utility demand side management programs sustained their development. Government policy and programs developed an early market primarily by creating a demand for ESCO services to carry a government program. Such an approach could be a good catalyst in developing countries....."

As has been the experience elsewhere, in India too, the development and growth of ESCO market would be impossible without governmental support. However, in India, direct government support is neither available for the development of ESCOs nor is it available for development of demand for ESCO services. Lobbying with government for its support, therefore, is very much needed in India. Needless to say that such lobbying, done collectively by all EPC/ESCO firms together, will have better chances at success than lobbying by individual EPC firms. This provides another strong reason for the players within this industry to come together to form an industry association.

The above resume has shown that this nascent industry, which faces several critical challenges in its quest towards its development, has a lot to gain if its individual members organize themselves into an association.

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[6] While project based financing is very much prevalent in India, it is typically available for large projects like power projects or other large industrial/commercial projects. ESCO/EPC or energy efficiency projects are relatively smaller in size. Yet they contain same level of financial and technical complexity (and hence risk) as any large project, requiring considerable efforts to properly evaluate them and to perform the needed documentation. It is because of this high size to effort ratio of ESCO/EPC or energy efficiency projects that the lenders in India find the prospect of lending to these projects unattractive. Low transaction volumes and uniqueness of each of these projects (unlike providing finance for say green field cement projects, where evaluation and financial structuring process can be standardized to an extent, every energy efficiency/ESCO project is unique by it self), further amplifies the unattractiveness.

[7] Quoted from "Summary of Workshop: ESMAP workshop on – Energy Service Companies (ESCOs) Practitioners – the World Bank, Washington D.C. 12-14 April 1999: Summary of Workshop

## 4.0 BUSINESS PLAN FOR INDIAN NATIONAL ASSOCIATION FOR ENERGY SERVICES COMPANIES (INAESCO)

### 4.1. Preamble

In the previous Chapter, we have seen how energy efficiency improvement is no longer a matter of choice but has become a necessity for the continued and sustained economic development of India. Bringing about energy efficiency improvements at the economy level, however, requires that multitudes of consumers adopt energy efficiency improvement measures in various end-uses, which in turn requires that energy efficiency improvement projects are developed, financed and implemented. While the consumers primarily decide whether or not to go in for an energy efficiency improvement project, and then provide or facilitate investment, they, on their own, cannot and have rarely been involved in the implementation. Historically, energy efficient product manufacturers, energy auditors, process consultants, and engineering and design firms, have been involved in delivering energy efficiency at end-use point. In this era of globalization and core competencies, however, EPC firms, whose core business it is to sell savings or avoided costs, are increasingly assuming a more central role in the delivery of energy efficiency at end-use point.

In the previous Chapter, we have seen that in India too, EPC route to deliver energy efficiency at end-use points is gaining acceptance. We have also seen that the EPC industry in India is still in its infancy, and faces several challenges. We had, therefore, concluded that it makes immense sense for this nascent industry to organize it self into a body - an association or a group. The question that arises, however, is: given its present status and given its present challenges, how should the industry go about organizing it self in the immediate future and in the long term? What should be its structure? Charter? What should be its immediate and long-term resource requirements and what should be its resource mobilization strategy? What should be its immediate activities?

The present Chapter has discussed these issues. The contents, however, are not prescriptive (not what should be), but are an articulation of what an association or a group could do, as and when it comes into being.

### 4.2 Formation of an Association

At the one end of the spectrum, the association of Indian EPC companies, or The Indian Association of Energy Service Companies (INAESCO), as it shall be referred here on-wards, could be a "stand-alone" organization. At the other end, it could be a part of the existing service organization, such as an industry or trade association. While the members of the association are in the best position to decide one way or the other, presented below is an analysis of the pros and cons associated with both decisions. Annex 2 to this report presents views of some of the existing EPC firms/ESCOs on this subject.

#### 4.2.1. Stand-Alone Organization

The advantage of being a stand-alone organization is that it provides:

*Visibility:* Being a stand-alone organization it self provides visibility and hence a separate distinct identity for any organization. Being more visible and distinct, has its own advantages, as it helps

the organization in differentiating its products and services, in branding, and in image building; e.g. ESCOs are in the business of marketing savings or avoided costs which are intangibles as opposed to selling products or services, which are tangibles OR they are in the business of finding solutions to customer problems, rather than in the business of deploying technology. Distinct brand identity, in turn, helps in influencing customer (in this case financiers, energy efficiency solution seekers, policy makers) perceptions, there by helping in getting necessary credibility and recognition.

*Focus:* By its very nature, a stand-alone organization has better focus in terms of clarity of its goals and purpose as compared to an organization that is ***not*** a stand-alone organization, but is a part of some bigger group. In the latter case, the goals and the purpose of the organization are always subservient to the goals and purpose of the bigger group. The result is that the organization's own agenda or focus either gets modified and/or is diluted.

Having clarity of purpose and goal, and therefore focus, helps in getting stake-holder (organization's members) acceptance, as focused organizations are perceived by its stake-holders as being more need based and therefore more need fulfilling (need based organizations undertake activities that directly address the needs and hence are in a better position to fulfill needs). Acceptance brings sense of belongingness, motivation and commitment, which in turn brings success.

*Flexibility:* By its very nature, a stand-alone organization enjoys flexibility, and therefore is better placed to serve its members and their interests. On the other hand, an organization affiliated to a bigger body, often has to work within the broader frame-work, rules and regulations of the bigger body or group (which, because of the very size of the bigger body or group, are more rigid), there by compromising its flexibility. This (lack of adequate flexibility) affects acceptance, and in extreme cases could lead to alienation.

*Freedom and an independent legal status:* A stand-alone organization provides freedom. Freedom to appoint its own dedicated staff, freedom to work with national and international donor community, freedom to network or associate with similar international organizations, freedom and legal status to accept and use foreign and Indian monitory assistance in the form of grants, loans or seed money, legal status to open and operate bank accounts, hold independent events (which in turn help in providing better visibility), etc.

<u>The dis-advantages of being a stand-alone organization, given present status of EPC/ESCO industry in India are:</u>

*Too few companies:* In the previous Chapter we have seen that, some of the significant challenges facing the ESCO/EPC industry in India are creating awareness, and gaining credibility and recognition among its stake-holders (customers, financiers/bankers, and policy makers/government). In the face of these challenging needs, it is not difficult to see that, in the immediate future, given their state[8], it will not be possible for the existing EPC/ESCO firms to bring, even if done collectively, sufficient leadership, resources and management to meet the challenges facing them.

[8] We have also seen that the ESCO industry in India is small, with less than 7 firms making up the entire industry. Further, we have seen that most of the firms are at a stage where they are implementing their first set of projects, and hence are not in a position expend lot of resources (manpower as well as monitory) for market development work as they are working in a tight liquidity position.

*Registration problems:* For an ESCO body to be registered, under the appropriate Act, on an all India basis would at least require membership of 13 firms from 7 different Indian States. As we have seen, the present strength of the industry in less than 7. The firms are from 3 different Indian States. Clearly, the firms on their own are not in a position to form an organization, which can be registered and thus can have legal standing.

It is no doubt possible to broaden the membership base to include energy efficiency product manufacturers, renewable energy based or water based ESCOs, energy audit firms or even engineering and consultancy firms. While this will take care of the statutory requirements, such a move, besides giving rise to some other issues, will dilute the focus and freedom that the ESCOs will have in such an association. The numbers are important. If too many non-ESCO/EPC firm members are drafted, the ESCOs will be in minority and may therefore loose the focus they would like to have, namely, awareness, credibility and recognition for the ESCO/EPC concept and business. On the other hand, too few non-ESCO members would mean that the association it self may not get formed, because the fewer non-ESCO members may not see any advantage in associating with a bunch of ESCOs, who are interested in pursuing their agenda of awareness, credibility and recognition, rather than the agenda that the non-ESCOs might want to pursue.

### 4.2.2 ESCOs collectively associating with an existing service organization

If not stand-alone, then the only other possibility is that the ESCOs/EPC firms, come together and operate as part of an existing service organization. The question that arises is which service organization? Having talked to existing ESCO/EPC firms, having looked at the outcome of the two workshops entitled "formation of an Indian ESCO association", held under the USAID's ECO project in Mumbai and New Delhi, in November 2000, and having discussed with experts in the field from USAID and other places, following service organizations emerge as possible candidates for hosting the ESCO body in the immediate future.

i) Confederation of Indian Industry (CII)
ii) Federation of Indian Chambers of Commerce and Industry (FICCI)
iii) Associated Chamber of Commerce and Industry (ASSOCHAM)
iv) Bombay Chamber of Commerce and Industry (BCCI)
v) Marhatta Chamber of Commerce and Industry (MCCI)
vi) Council of Energy Efficiency Companies (CEEC)

Choice of service organization

Considering that the proposed ESCO/EPC body should have all India character, it is only logical to explore the possibility of association with bodies that have all India presence. Accordingly, out of the above list of 6 possible candidate service organizations, the choice comes down to four organizations, omitting BCCI and MCCI, who only have a regional charter. Out of the balance four organizations, three comprise of leading apex level industry associations – CII, FICCI and ASSOCHAM -, and a body exclusively devoted to energy efficiency companies in India - CEEC. These four have been chosen for further analysis. Although there are four organizations, there are actually only two categories of organizations, one, apex level association[9] (CII or FICCI or ASSOCHAM) and an organization exclusively devoted to energy efficiency[10].

[9] Although each of the apex level organization has its own strengths and weaknesses as regards hosting of INAESCO, no distinction has been made between them, and they are being categorized into one generic category of apex level organizations . It is best left to the ESCOs/EPC firms themselves to decide as to which apex level organization they would like to be part of, if at all. However, it could be said that, of the

Analysis of making INAESCO as part of CEEC or CII

Pros and cons of making INAESCO part of apex level organizations or CEEC have been described and analyzed below.

*Apex level Organizations:*

Major advantages of associating with apex level organizations are:

- They have very strong identity and national presence, and hence can provide better recognition, credibility and outreach
- They can provide direct access to customers as many of the customers are their members
- They have good equation with policy makers, hence can provide the forum for discussions with policy makers
- They have adequate resources, infrastructure and staff to carry on their existing other activities, as well as take care of the incremental work that may have to be done for hosting the new body like INEASCO

Disadvantages of associating with an apex level organization are:

- EPC or energy efficiency is not their main business or mandate or charter. Dilution of focus is thus a real possibility
- They are existing bodies of long standing, having affiliation and association with hundreds of different and disparage bodies/industry associations/trade and interest groups. Over the years, formal and informal working practices, procedures and work ethics and ethos have emerged in the functioning of these organizations. Since the EPC firms/ESCOs would be a relatively small part of this set-up, flexibility and freedom may get compromised by becoming a part of this set-up.

*CEEC*

Major advantages of associating with CEEC are:

- It has energy efficiency as its mandate, hence can provide sharper focus
- Since the members are in the energy efficiency business, they understand the subject better, are "like minded" and are a good source for building future partnerships (ESCO business requires association with energy efficiency players like equipment manufacturers, auditors, etc.)
- All the ESCOs are already members of this body

Disadvantages of associating with CEEC are:

- The body is new and is struggling to stand on its feet. To host EPC/ESCO association in it will be like asking the child to be a father

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three apex level organizations, only CII seems most suitable as it is already playing an important role in energy efficiency and green energy, and has developed a fair amount of reputation for its professionalism. It is the most visible and active of the three apex level organizations at the national level. Besides, CII was responsive to the idea of hosting a body of ESCos, when discussions were held with CII.

[10] CEEC has also been chosen essentially because: CEEC is the only body in India, exclusively focusing on energy efficiency; majority of the participants at the two ECO workshops, referred to above, had indicated that the ESCO body be constituted as part of the CEEC ; and all the ESCOs are existing members of CEEC

- Being new, has limited effectiveness, recognition, credibility, and clout. Also limited outreach among prospective ESCO customers. Most members will be looking at ESCOs to provide business rather than providing business opportunities for ESCOs

Analysis

It is clear from the above analysis that a stand-alone organization has several strategic and operational advantages. However, given the nature and the present status of the EPC/ESCO industry in India, it is not a question of whether or not the Indian EPC/ESCO industry should organize it self in to a stand-alone body, but whether or not the EPC/ESCO industry in India ***can organize it self into a stand-alone body in the immediate future?*** There are no clear answers. There are several factors (focus, flexibility, freedom, etc.) on which stand-alone structure scores, while there are factors like credibility, recognition, outreach on which stand-alone does not seem to be a feasible idea. In the initial stages of any organizations life, distinct identity, focus, freedom and flexibility are as important as recognition, out-reach and credibility. While the stand-alone status provides the former, becoming part of an existing service organization seems to provide the latter, at least in the immediate future. The question that needs to be examined is whether or not it is possible to get the best of both worlds, i.e., become part of an existing service organization in the immediate future, at the same time enjoying the freedom, flexibility and distinct identity. This would require finding a way to reside EPC/ESCO industry body within the structure of an existing service organizations as a separate and independent group or an association that uses the name, outreach and influence of the parent body to gain credibility and recognition, but at the same time maintains a distinct and separate identity with, as far as possible, separate board, offices, staff, even letter heads, business cards, etc. Such an arrangement if it can be worked out is perhaps best way to begin. In the long-term, of course, a stand-alone organization would be the best option.

Analysis of pros and cons of associating with an apex level organization or CEEC, also does not provide a clear picture. CEEC being new and smaller organization, may be able to provide more flexibility, freedom and identity as compared to apex level organizations. However, it may not be able provide the infrastructure, recognition, and credibility that the apex level organizations can provide. Although no clear picture emerges, here too, it can perhaps be said that apex level organizations would be better suited if freedom and flexibility with respect to following can be ensured:

- Whether freedom and possibility exits to:
    - To work with donors
    - To take/absorb and use assistance given by government, donors
    - To work with other non-ESCO members
    - To have graded membership/associationship
    - To employ dedicated staff
    - To associate, on a one to basis, with ESCO associations from other countries

### 4.3 Structure of the Association

Views of some of the existing ESCOs/EPC firms on the structure of the association have been provided in Annex 3 to this report. Various issues involved in deciding the possible structure of the association are discussed below.

### 4.3.1 Membership

The question that needs to be asked is who gets the membership of the association? Obviously, those companies that are full service ESCOs should become members, but these are very few in number. Since an objective of the new association will be to encourage and strengthen new ESCOs, those companies that are interested in becoming ESCOs should also join. Besides these two categories, there will also be a need to attract non-ESCOs who may have an interest in staying close to the industry (energy efficiency equipment manufacturers, energy auditors, consultancy firms, etc.) and even some other national and international associations/bodies (including other international ESCO associations). Given the different natures and interest of each of these categories, there will be a need to have different categories of membership, with ESCOs being awarded the primary membership and the full voting rights, as well as minimum guaranteed number of places on the Board. The second category of membership could be for non-ESCOs having an interest in staying close to the industry. A third category could be for national and international trade/business and industry associations/bodies.

All of this brings up another question that is often troublesome: who gets to vote on association questions? Some trade associations limit voting to "primary" members, those actually involved in the main business represented by the organization. Others award "partial" votes to these members or allow them representation on the Board of Directors (voting, or "observer" status). The exact decision regarding this is best left for the members themselves to decide. One caveat, however, needs to be mentioned. Since numbers bring dues, temptation to put over emphasis on numbers needs to be avoided. After all, what is needed is quality membership, providing effective and efficient direction and leadership.

Special status to FIs: Financial institutions have a larger role to play in the growth of ESCOs in India and it is they who eventually have to play an essential part in the ESCO project cycle. They therefore need to be accorded special status in the proposed body. The advise from honorary members drawn from financial institutions can provide crucial support in funding energy efficiency projects on performance contracting approach.

### 4.3.2 Organization

The question of how the association should be organized is best left to the members of the association, who could finalize this with the drawing of by-laws for the association. Broadly, the structure of organization should be in line with the organization's purpose, its strategy for achieving the purpose, and the tasks it wants to undertake to fulfill its purpose as per the laid out strategy. Generally, the organization should lay out the structure covering the Board of Directors, executive committee (if needed) and officers. It should also be quite specific about the relationship of the Board and officers to the day to day managers of the association.

### 4.3.3 Management.

None of the things laid out in a business plan happen unless someone make them happen. Too often fledgling associations drift and die because no one person handled the details and provided steady leadership. At the start a small, dedicated group of individuals can make things happen to get the organization off the ground, but these individuals usually have other interests that soon must take precedence over trade association matters. This leaves details dangling, tasks un-done and members unsatisfied. The key is a single, dedicated person with the time, support and drive to administer INAESCO and see that things move ahead. Such a person (Director, Manager, or

Administrator) should manage membership. He/she must concentrate on matters of member services and those things that attract new members who pay dues. He/she must watch for opportunities to raise funds beyond dues to support activities of the organization. To begin with one person, assisted by a secretary could serve the purpose.

Some of the Associations, however, have adopted a different management strategy. Under this, the affairs of the Association are managed by one of the core or primary members (usually the President of the Association or his firm) for a specified period of time and the responsibility is rotated among the core members. In India, examples of such way of managing can be found in the working of the Associations of manufacturers belonging to lighting industry, refrigerator and air-conditioning industry, etc. The affairs of the INAESCO, similarly, could be managed by one ESCO member at a time for a specific period. This responsibility could be rotated among the members. The proposed INAESCO could also adopt this management mode

### 4.3.4 Immediate Future

While the above coverage is more appropriate to the question of how the association should be organized in the long-term; in the immediate future, as a part of another service organization, the structure of the association may have to be different.

There are two ways in which INAESCO could become part of existing service organizations like apex level bodies or CEEC. First way is to get registered as a separate body or an association (legal entity) and then seek associate membership of (or some kind of affiliation with) the existing service organizations. Second way is to get organized within the existing area of work of the service organization. The manner of organizing could be as a "Committee/Division" or as a "Working Group" within an existing area of work of the service organization. For example, the ESCOs/EPC firms could get organized as a "Division/Committee on ESCOs/EPC" or as "Working Group on EPC/ESCO" under the energy area of the CII. While the former way does not provide any advantage and looks more like a stand-alone option, the latter way definitely presents an interesting opportunity. As a "division" or a "working group" within the existing work area could mean that resources of the apex organization in terms of infrastructure, name, backing, and manpower will perhaps be available, in exchange of a modest fee to be paid to the apex body, to immediately initiate activities. The question of autonomy, services that the apex parent body could provide and the fee it expects for this could of course be discussed and mutually satisfactory arrangement can always be worked out[11]. The advantage of such working groups or divisions or committees is that, they can be suitably structured to incorporate graded membership (e.g. primary or core members, associate members, etc.)

How does one go about forming a Division a Committee or a Working Group? Normally the service organizations will want that, at least one member of the proposed INEASCO is also a member of the service organization. This member, who is member of both the bodies, can then make a request to the management of the service organization to allow the proposed new association to be a part of the service organization in the form of a working group/committee/division. Alternatively, the management of the service organization may allow the proposed new association to be part of the parent body, on the basis of a request.

[11] Several examples exists of Associations having started under this arrangement (a Division or a Working Group) with CII. With the passage of time, with increased activities and increased visibility and credibility, these divisions and working groups have gone on to become full fledged Associations. The case of Indian Boiler Manufacturers Association, serves as a good case study. Presently, too, CII, under its energy work area, is hosting a Committee on oil and gas and a core group of Coal Producers.

Organizations like Ministry of Power or USAID could be the right organizations to send such requests to the management of these apex level service organizations.

### 4.4 Charter of the Association

Charter of the association should be focused, but at the same time it should be broad enough to also encompass activities that the association will like to pursue in later years. Accordingly, the charter presented below is broad in terms of its scope. Examples of the Charter and mandate of some of the successful EPC/ESCO associations in North America and North Africa have been presented in Annex 7. Views of some of the existing ESCOs on this subject have been presented in Annex 4. Material presented below and in the Annex, provides an excellent reference point for the proposed INAESCO to draft its charter by choosing and emphasising areas which, in the opinion of the ESCO members, are more relevant in the Indian context.

Association of ESCO/EPC firms – INAESCO, should be the primary organisation representing the energy performance contracting industry in India. While its main mission could be to support the profitable growth of members through education of the market, industry promotion, self-regulation and industry standards, several other areas of work could form its main charter. INAESCO's mandate should be **FEETFIRST,** symbolising the present Industry status and the fledgling nature of the EPC Industry.

- Create visibility for an ESCO industry – with firms identifiable as ESCOs, not just vendors. Specifically, helping to establish that ESCO's are more than firms selling just EE products, services and/or audits.
- Assist in marketing the performance contracting concept and develop markets for ESCO services
- Develop the necessary tools (Standard contracts and M&V protocols) to help popularize the performance concept.
- Develop programs to encourage financial institutions to fund energy efficiency and performance contracting.
- Help energy efficiency companies graduate to full service ESCO's.
- Provide guidance and encouragement to new ESCO's.
- Develop an accreditation program for ESCO's
- Provide guidance and advocacy regarding legal concerns, such as tax issues.
- Develop strategies to encourage and influence government in India to be a driver in achieving greater energy efficiency through the EPC route.
- Create a procedure to evaluate projects.
- Provide venues for networking and dialogue – among ESCOS and with related professions
- Collection of case studies and the establishment of a data base.
- Getting Financial Institutions (FIs) and bankers "on board" and binding FIs to a model they would accept. Special attention was paid to overcoming the obstacles presented by the size of funding needed for energy efficiency (EE) projects.
- Creating a forum for ESCOs to be heard, especially by governments. (This topic generated considerable discussion and support.)
- Developing a data base that would provide talking points, such as market size, opportunity, and a clearly defined need for EE in India.
- Foster EE/DSM programs in utilities.
- Inculcate EE initiatives with utilities.

- Sustain INAESCO.
- Train stakeholders

Besides above mentioned charter, other important areas which need to be included in the INAESCO charter are: exporting Indian ESCO services worldwide, and technology development.

### 4.4.1 INAESCO Objectives

While the overall objective of INAESCO could be to increase the market penetration of energy performance contracting services in India, the means to do this could be through:

- Development of an EPC infrastructure in India that will ensure the availability and implementation of a high standard of EPC services.
- Increased awareness and understanding of EPC in India, thereby, generating support from major allies and creating demand for EPC services.
- Establishment of commercial linkages and networking platforms in energy performance contracting.

## 4.5 INAESCO Work Plan

INAESCO's objectives shall best be met with the following set of activities. Ideally, it should be left to the members of the proposed association to decide the nature and type of activities they want to undertake. However, described below are the activities which the proposed associations needs to undertake in order to business plan, which will form the basis for direction and accountability of the association. The Canadian and U.S. experience (CAESCO and NAESCO) indicates quite clearly that a business plan must be established to provide an operating framework, particularly at a time when the EPC industry and the association are at a fledgling state of development. The Business Plan is intended to:

- Provide the Association with a logical framework and benchmark for development and delivery of services to members

- Provide prospective members with sufficient information about the Association so as to generate interest in joining the organization

- Enhance the credibility of the organization so as to enable it to secure the buy-in of key allies such as the financial community.

To produce this output, the following tasks are planned.

### 4.5.1 Start-Up

The purpose of this task is prepare for and to initiate the project. It is anticipated that the pre-project planning stage will involve the following elements:

- Identification of interested parties to become "Project Partners."

- Correspondence among the project partners to confirm the approach to and logistics of the project.

- Meetings/conferencing among the partners.

- Agreement on Business plan

- Development of By-laws, Membership Designations, including establishing membership fees and operating regulations.

- Registration and launch of INAESCO as a non-profit body

- Setting up of INAESCO office, including staffing.

- Setting up of Committees to oversee INAESCO activities for year 1

### 4.5.2 INAESCO activity Plan For Year 1

Activity # 1: DEVELOPMENT OF TOOL PACKAGES FOR EPC

For EPC to effectively take root in India, INAESCO shall require at its disposal 3 basic tools without which the concept cannot take off. The emphasis will be on customizing the operating tools to meet the needs of the Association and the Indian market. This task builds on the already existing activities in this area under the ECO project and it expected that ECO would deliver the following tools for INAESCO:

**a) ACCREDITATION PROCEDURES**

The purpose of this is to develop an accreditation process for the INAESCO members. *Accreditation of ESCOs is important because it assures customers that all accredited members of INAESCO will have the basic competence to successfully complete an energy savings retrofit project on a performance contract basis.* Accreditation is also useful to utilities, governments, development banks and insurance companies that may wish to provide financing or credit support to ESCOs.

In Canada, CAESCO has a well-established and accepted approach to ESCO accreditation. As previously noted, about 95% of the EPC transactions are being done by CAESCO accredited ESCOs.

Some of the issues that need to be looked at would be the establishment of:

- Accreditation criteria
- The mandate of the decision making body
- The process for submission and evaluation of accreditation proposals
- The methods of financing the accreditation work
- The right of appeal, and the consequences of failing to qualify.

**b) INDIGENIZED MODEL PERFORMANCE CONTRACT**

The experience of EPC in North America shows that EPC market penetration is more successful when the market needs to deal with only a small number of well-accepted contract structures. Therefore, INAESCO will need model energy performance contracts to be demonstrated in the EPC pilots being implemented through ECO

Model performance contracts (first out) and (sharing of savings) will be developed and drafted by the ECO project. It is expected that these models would be subsequently available to INAESCO for the commercial, residential and the Industry sector respectively.

In addition, the IPMVP "Contract Guidelines", prepared by KIONA for use by ESCOs, end users, and utilities, will need to be adapted to Indian market conditions and distributed by INAESCO.

### c) RISK MANAGEMENT AND PROJECT FINANCING

ECO also has provisions for development of financial means by which EPC services can be effectively delivered in the Indian marketplace. Financing for EPC is a critical issue in India where economic factors, including the cost of capital, generate uncertainties concerning the approach to and scope of EPC projects. It is crucial for INAESCO to work on behalf of its member constituency to ensure that effective and appropriate financing vehicles are put in place in India.

The financing of EPC in North America has evolved to the point where most projects are being financed using standard financing instruments such as loans and leasing. The key, however, is that it has taken many years to bring the North American financial community into this industry as an active participant. For the financial community the key is risk management and this will be a particular challenge in the Indian market. Workshops and research in India, under ECO and several others have identified some of the financial risk elements that will need to be addressed:

a) Access to commercial financing: Related to this is how to pool North American financing and make it available to the Indian ESCO industry at lower than current rates in India.

b) Addressing high interest rates, and

c) Ensuring financial recourse for the projected savings stream: There are savings insurance schemes developed in Canada that could be customised to the Indian market.

Hence, what is required is similar to what occurred in North America -- a process of awareness building within the financial community coupled with the development of specific mechanisms for financing and risk management, including the role of performance guarantees. Therefore, INAESCO will need to be involved in consultations with the Indian financial community to assess important considerations such as:

- Their awareness and knowledge of EPC.

- Their needs related to financing projects on a performance basis. This would involve, for example, a review of due diligence procedures, preferred contract structures, and the importance of the performance guarantee.

- The identification of specific tools and mechanisms to facilitate the EPC pilots (e.g., use of an acceptable and standard pro forma for project proposals, combining different sources of financing ... both Indian and North American).

- Other Risk Management: This element will examine the other non-financing issues that affect risk and uncertainty in EPC projects. Notionally, this would include such factors as:

  - the control of savings predictions
  - design/construction detail
  - monitoring/verification capabilities
  - the quality and reliability of sub-contractors
  - the quality and reliability of products
  - management of client relations over the duration of the contract.

This work will also involve exploring possible financing linkages through overseas bank affiliates. For example, some of the International Banks with offices in India may have been actively involved in EPC elsewhere.

The outcome from this task is intended to be:

- An agreed upon financing and risk management structure (tools and mechanisms) to be demonstrated in the EPC pilots.

- A commitment from several Indian financial sources (or U.S.) to participate in the EPC pilots.

It is also anticipated that the work, currently ongoing under ECO, will lay the foundation for the development of on-going sustainable mechanisms for project financing and risk management namely: i) an autonomous self-supporting project financing fund and ii) involvement of an organisation, such as ICICI under ECO, to act as the guarantor of the EPC savings.

It is critical for ESCO's to consider the possibility of 'courting' financial institutions so that a bond or relationship can be developed with lenders. A business relationship with one or more respected lending institutions will help in 'mainstreaming' ESCO's, provide credibility as well as commercial strength.

ACTIVITY # 2: DEVELOPMENT OF A BUSINESS EXCHANGE PROGRAM

A business exchange program is a vital component to elicit interest and garner support for the energy performance contracting industry as well as to disseminate 'success' stories to expand the market.

A business exchange program can therefore fulfil it's basic functions through:

1. **Workshops & training Seminars:** A number of workshops and training programs have been planned under ECO to educate members and end-users as well as other stakeholders about EPC. This is an on-going activity under ECO which serves to:

   - Foster EPC business relationships
   - Train ESCO themselves on EPC.

2. **A quarterly newsletter:** The energy efficiency bulletin brought out by IREDA as well as the Efficiency News brought out by CEEC could carry a section on EPC industry in all it's issues. Until the ESCO situation matures enough to justify a separate newsletter..

3. **A website** – *a clearinghouse for information pertaining to EPC should be part of the clearing* house envisaged to be set up under ECO

4. A platform for networking like an ESCO Directory listing not just areas of operations but skill sets available with listed ESCO's. However right now there are just not enough ESCO's to justify this. In the interim, CEEC could be requested to have a separate ESCO section in the next edition of their Directory.

ACTIVITY # 3. ESCO DEVELOPMENTAL ACTIVITY

The purpose of this activity area would be to establish INAESCO as the lead player in helping Indian firms establish the capabilities required in becoming successful ESCOs. This will be accomplished by developing and delivering an EPC training curriculum.

The EPC training will be targeted primarily to INAESCO members and secondarily to:

- Engineering firms seeking to become ESCOs.
- Supporting trade allies.
- Key institutional allies such as the financial community and the utilities.

This would require preparation of the training materials for ongoing EPC training. It is suggested that particular attention be given to the following subjects:

- Auditing and Feasibility Reports
- Measuring and Verification
- Shared Savings approaches
- Operating the ESCO office
- Marketing Performance Contracting
- Identifying EPC market niches
- Choosing the sub-contractors
- Division of Responsibility with client and sub-contractors
- Contractual issues
- Assessment & management of risks
- Project and construction financing
- Savings guarantees.

The curricula in these training modules will need to be developed. It is anticipated that the training curriculum and operating procedures will be revised as required during the first year of presentations, and subsequently on an annual basis.

Activity # 4 CONDUCT OF US STUDY TOUR

Indian ESCOs are particularly concerned about how to establish collaborations with North American ESCOs and how to address barriers to establishing joint ventures. The fledgeling ESCO industry in India can receive a big boost through first hand exposure that a study tour to the US can provide. ESCO companies here stand to benefit greatly through interactions with ESCO's there by discussing how similar seemingly insurmountable problems have been innovatively resolved internationally.

Additionally opportunity is provided to establish strategic linkages/partnerships that encourage the growth of business here in India as well as making relatively less expensive technical expertise available to the North American ESCO's. Several days should also be planned to visit and work with NAESCO staff to observe their operation and to gather a better understanding of the servfices that they provide.

ECO workshops on ESCO financial structure clearly brought out the need to exposes the financial community in India to the ESCO concept, ESCO operations, and how ESCO projects are getting funded in North America and elsewhere in the World. Apart from ESCO representatives, representatives from leading financial institutes and banks will therefore find a place on the study tour.

ACTIVITY # 5: ESCO MARKETING ACTIVITY

In order for INAESCO to sell its services as an association, it must have a reasonably accurate assessment of the anticipated EPC market. The key component will be a segmentation of the industrial and commercial sectors in terms of estimating the number of EPC projects at threshold project values likely to be of interest to private financiers. In order to determine this segmentation, it will be necessary to obtain energy load data from utilities, government and other sources like CII, including Indian engineering firms and ESCOs.

a) *Characterization of Existing EPC Activities and Influencing Market Forces*

This element will involve assessing the current EPC activities and the overall market conditions and influencing forces in India with the goal of positioning INAESCO services. It is a fundamental requirement for the Business Plan to be able to respond effectively to the already existing conditions and activities. Specifically, this assessment will profile:

- The role/activities of the foreign ESCOs
- The role of the international donor agency initiatives that are seeking to foster energy efficiency investments in India
- Current market forces and conditions, including the Indian currency, the cost of capital, energy price trends and inflation projections.

In addition to current CEEC/INAESCO members, the target for this assessment will include other "candidate" ESCOs, the financial community, the state governments and the utilities. In part, this information will be obtained through a survey administered through telephone, mail and on-site interviews.

b) *Profile of the Energy Management Delivery Channels*

The purpose of this task is to assess the delivery channels for energy management services in the commercial and industrial sectors. In addition to the role of the ESCOs, it is crucial to determine the nature and needs of the product manufacturers, distributors and the contractors and sub-trades.

c) *Assessment of INAESCO Constituency Needs*

The primary constituency for INAESCO will be the current and potential ESCOs in India. This element will involve interviewing Indian ESCOs or firms that are close to becoming ESCOs in terms of their anticipated **capacity building** and **business development** needs. These firms will also be presented with a list of questions designed to identify other services likely to be of need by INAESCO members.

The result of the above profiling would be important to arrive at models for developing self-sustainability, financial and technical, for INAESCO. In essence, the above activity would determine revenue models for INAESCO. It is expected that INAESCO would be able to achieve sustainability only after a target time frame of 3 years.

Some of the revenue sources could be:

- Membership fees.
- Accreditation charges.
- Newsletter subscription fees.
- e-platform,
- Training,
- Trade promotion,
- Conferencing,
- Providing legal and contractual services

## 4.6 Estimate of Expenses

Given the reality of the situation. It is too premature right now to work out a detailed plan for sustainability, in the absence of the profiling mentioned above, which is why financial help to start up the association would be required for the next 3 years. Preliminary and start up expenses are estimated at $ 15,000/- while running expenses are estimated at $ 43,000 annually. A break up of these estimates is attached as Annex 5.

## 4.7 Possible Strategy for Resource Mobilization

Where will the money come from to run the organization and finance the projects suggested in the tasks outlined? Dues usually form a basic source of funds for a trade association, but in the case of INAESCO, the number of Indian ESCOs is so limited that it is unlikely dues could be set high enough to raise the funds necessary to get the Association started. This means an external source will have to be found. While in the long-run, dues or contribution from primary and other members and other revenue generating activities like e-platform, training, accrediting, trade promotion, conferencing, providing legal and contractual services etc. may be enough to meet the capital and revenue expense requirements of INAESCO; in the initial years, much of the resources will have to be mobilized from external sources.

In the previous Chapter, we have seen that most EPC firms/ESCOs in India are at a stage where they are implementing first set of projects. As such, they hardly have any revenue stream to tap

into to pay large sums of money as membership contribution. We have also noted that temptation to increase the membership size to garner more resources by way of membership fees serves no good purpose (in fact it dilutes focus) and hence should be avoided. Under the circumstances, only feasible way is to explore the possibility of raising the required funds from external sources. External contributions could come in two ways. Firstly, the external contribution could come as a direct grant assistance to implement the business plan activities. Secondly, the external assistance could come, again as a direct grant, but as a start up seed money. The seed money, which is essentially in the nature of initial equity, provides an opportunity to earn interest, which could then be used to support the working capital requirements of INAESCO. Bi-lateral donors and the government could be the possible sources of such external contributions.

Annex 6 provides views of some of the existing ESCOs on this subject.

### 4.8 Summary

An Indian ESCO Association should be formed. The need for an organization to support and enhance the growth of an energy efficiency service industry is apparent. Although the industry is still in its infancy, a well-organized and active organization can speed the needed growth.

The structure of the association should allow for high visibility, clear focus and flexibility to serve ESCO needs.

The Indian ESCO Association should be a "stand alone" organization if at all possible. At this stage of the industry's development some external support and direction would be required. If it must be housed within another structure, it must maintain a separate identity (as far as possible) if it is to be effective.

The business plan and first year agenda has been framed keeping in mind the feedback received from the workshop and is clearly responsive to the needs identified by those who attended the ESCO association meetings.

## Appendix: 1

**A Discussion on the need for and potential role of an ESCO Association**

*Manoj Saha (November 2000)*
*Saha Sprague Limited ©*

## 1. Introduction:

This purpose of this paper is to discuss the potential role a new Association for ESCO companies could play in context to specific hurdles faced by Saha Sprague Limited as an existing and operating energy services company in India. The views expressed in this paper are strictly Saha Sprague's and is intended to spark a discussion, rather than provide a prescription.

## 2. Background about Saha Sprague Limited:

Saha Sprague Limited was founded in 1995 as a limited liability joint venture company in India, owned by Commonwealth Sprague Capacitor Inc. (USA), and Energy Venture Capital Limited (India). The Company was founded on the principle of meeting the evolving needs of commercial and industrial customers in India for solution to power quality and energy saving issues, and on the principle of creating value for its shareholders by combining leading technology and know-how with intimate market knowledge and presence.

### 2.1 Some samples of Saha Sprague's experience on energy efficiency and quality in India include:

- DSM for Ahmedabad Electric Company
- Auditors for BSES, BEST for Distribution Loss Reduction
- Power study on high freq spinning M/c for NRC Limited -15% Energy Saving Achieved
- Failure Analysis and solutions for Reliance Petroleum Ltd, Jamnagar
- Flicker Analysis and Harmonic Filtering for Tuder India Ltd
- Harmonic Filter Installed for Dwarekesh Sugar Industries Ltd.
- Energy Audit and Harmonic Filtering for Reiter LMW Machinery Ltd.
- Flicker mitigation and Harmonic Filter for Barge Mounted Unloaders in ISPAT Industries, Mumbai

### 2.2 Some examples of Saha Sprague's experience on ESCO Projects in India include:

- Fiber Optic Plant energy efficiency improvements for Sterlite Industries Ltd, Aurangabad
- Energy efficiency improvements for BILT Chemicals Ltd, Karwar
- Energy efficiency improvements for Wheel & Axle Plant, Bangalore
- Energy Saving Project for Vidhan Soudha Building, Bangalore
- Lighting retrofit and Automatic Var management for Manipal Centre, Bangalore

## 3. What the heck does "ESCO" mean?

ESCO is an acronym for "Energy Services Company" and is used very loosely generally to describe companies that provide energy efficiency in some way or the other. More and more, a distinction needs to be made between companies that provide

1. Auditing services only.
2. Specific Products that provide energy efficiency without auditing services.
3. Auditing services with turnkey financed implementation of efficiency measures, where the savings is meaningfully tied to the overall implementation of the project.

Saha Sprague's view is that to be a true ESCO company, one must strive to fit into the 3rd descriptions. In reality, however, this is not an easy task for existing players, let alone for new entrants into the ESCO business.

## 4. Do we need an Association of ESCO Companies:

In this paper, we attempt to provide some assistance towards finding the answer to the question of whether there is a need for an association of ESCO companies. We take the approach of looking at this question from the perspective of all the different participants in energy efficiency projects. We therefore look at this issue from:

1. An ESCO's Business Development Perspective
2. A Beneficiary's (Energy Consumer) Perspective
3. A Financier's Perspective
4. And from a Policy maker's Perspective

## 5. An ESCO's Business Development Perspective:

### 5.1 India Vs. USA

To begin with, lets look at the business perspective. Since the ESCO concept is a mature one already in North America, it is observed that the ESCO discussion inevitably calls for parallels in the USA. To establish the correct models for India, however, it is imperative to highlight key differences between the two markets. This is done in the table hereunder:

| INDIA | USA |
|---|---|
| –Relatively Power Deficient | - Relatively Power Sufficient |
| –45% T&D Losses | –7% T&D Losses |
| –Low R&D | –High R&D |
| –Low Productivity | –High Productivity |
| –Industry Sector Large | –Industry Sector Large |
| –Service Sector Small | –Service Sector Large |
| –Service = Hundreds | –Service = Thousands |
| –Software Sector | –Software Sector |
| –Overall Inefficient and outdated infrastructure | –Overall Efficient and advanced infrastructure |

The important point to note here is that India remains an economy where Industrial consumption is much higher in percentage terms than that of USA, where the service sector has matured to consume a significant share of the total energy pie. Therefore, it is natural that most examples cited from the USA refer to building/premises efficiency, whereas the market for such types of efficiency projects is limited in India. Today, India does however represent a large market for Industrial and Utility based energy efficiency potentials, and any ESCO company that does not discern this distinction will be an ESCO company born before its time. In due course, as the software sector in India continues to boom, along with the insurance and financial services sectors, the total service sector in India will naturally grow to a significant market size. Existing ESCO companies will need to be positioned for this market when it arrives.

### 5.2 Energy Efficiency within the Utility Sector:

In every state where regulatory commissions have been formed to act as a watchdog over the local SEBs and actions of local policy makers, there has been a major revision of estimates of how much Transmission and Distribution losses are really taking place. Typically, MSEB is now

known to have declared a T&D loss of about 30% (much higher than previous MSEB disclosed records); and the three Discos in Orissa under BSES management are having to deal with much higher T&D losses (45-50%) than that declared in the privation bids. The trend of increased transparency through regulatory commission vigilance will highlight the fact that real technical losses incurred in the utility systems are much higher than had previously been projected and envisaged. Here lies a large market for potential ESCO companies for providing energy services, however, this market is riddled with obstacles and barriers, and an ESCO needs a very focused and patient approach on an ESCO's part to penetrate this market. It is estimated that at least 10,000 MW could be harnessed strictly through reduction of technical T&D losses. To tackle this market, an ESCO will also require to posses specialized skills and substantial financial resources. In macro terms, energy efficiency before the meter will have the most impact in the shortest possible time, as opposed to energy efficiency beyond the meter. Traditionally, technical efficiency within a utility has been the domain reserved strictly for the Utilities themselves. In the new age power scenario, utilities will have to accept external technical and financial assistance in order to solve the chronic problem of T&D losses.

### 5.3 Do we have enough ESCOS in India to form an association ?

In context of energy efficiency, there are several companies in India operating in some capacity or the other. Very simplistically, they could be broken up as follows:

| Stage | Type | Population |
|---|---|---|
| A | Product Dependant Companies | Many (more than 200) |
| B | Product Dependant with Specific Auditing skills | Few (less that 50) |
| C | Pure Independent Auditing Skills | Very Few (less than 10 and does not have an organized sector) |
| D | Multiple Competencies (Electrical, Thermal, Mechanical, Financially Integrated, Performance Contract based) | Scarce (less than 5) |

Participants that fit the definition of "ESCOs with multiple competencies" have yet to emerge as a sizeable group that can implement and benefit from organized behavior that an association could catalyze. Currently most energy efficiency companies are in the early stages of evolution: stages A – C, and migration from one to the other pose serious challenges. Many companies today have not even made these distinctions and may not even have a plan of migration. Saha Sprague also started out as company in Stage A, and after 5 years of evolutionary development, it has become a D type ESCO company, with still much to learn and perfect. While it has taken SSL 5 years in evolving into a monkey from an amoeba, it will still take some more years before SSL takes the shape of an intelligent humanus erectus.

While there are not enough ESCO companies in category C and D to possibly justify a financially viable association, organized behavior through an association could help shorten these evolutionary steps for companies stuck in stages A and B by involving them and providing networking and educational information about the dimensions and potentials of the ESCO business.

There are many specialized skill sets that an evolving ESCO could adapt, and these represent various ways in which existing ESCO players can add value by considering the addition of services such as those mentioned below:

| | |
|---|---|
| *1* | Energy and Process Consulting |
| *2* | Energy Analysis (Audits) |
| *3* | Engineering Design |
| *4* | Project Financing |
| *5* | Construction Management |
| *6* | Performance Guarantees |
| *7* | M&V of Savings |
| *8* | O&M of EquipmentSavings Maintenance and Risk Management |

### 5.4 Why would one be interested in becoming an ESCO company?

Most business decisions are based on returns and profit maximization concepts, and the ESCO business, no matter how noble its effects are, is no different. Earlier, it was observed that, in the evolutionary stages of becoming an ESCO, the first migration step is from stage A to stage B: i.e. from a product company to one that offers some form of services. For companies in stage A, most entrepreneurs understand making and selling a particular energy saving hardware product much better than selling the idea and related services for assisting energy savings in general, as it is not tangible, quantifiable, or predictable. It is also skill dependent, a resource an entrepreneur would need to most probably acquire. For this migration, this entrepreneurial mindset would need to change, and this could be assisted by an association that operates as a networking matchmaker for skill sets with business opportunity. Such readily available pool of skill sets would make the migration from A to D far less daunting in the entrepreneurs' mindset.

### 5.5 What is the size of the market for ESCO business?

Product based companies in stage A usually know their market size and potentials very well, as they have prior market knowledge and experience in their field. Furthermore, many product companies belong to associations that could be segments of specific industries such as lighting, motors etc., who could be well supported for their business needs. With respect to quantifying the size of the market for ESCO services, since there has been no attempt to measure this industry, no past aggregate history or documentation exist. Forecast and trends can only be made as 'guestimates' looking at macro economic indicators on energy consumption and supply. One of the roles adopted by a new ESCO Association could be to collect historical and projection data from its members, which in aggregate could provide the ability to segmentize and size the ESCO "industry". This could also be a stepping-stone towards getting "industry" status in India. Such data would provide substance to organized behavior and be leveraged to add weight to a combined voice in terms of influencing policy and directives. Ultimately, such data would be invaluable to individual and new members for their own business and capital planning, where FIs could take better informed decisions based on credible market data.

### 5.6 Are the existing leading ESCOs snobs?

For most established ESCOs, success comes after a long gestation period. It is quite natural for existing players to be protective about their 'know-how', and take an unhealthy attitude as to "why should others have an easy ride?". Furthermore, every ESCO promoter feels that he is a pioneer of his industry, and naturally, a pioneer always feel threatened after developing a market from scratch. Their problem solving techniques to general barriers become company secrets, and such secrets cannot be traded for fear of losing competitive advantages. Conversion of pride, ignorance and selfish behavior into Consolidated Organized Behavior into productive collusion could lead to a larger long term market creation and access for existing leading players. Such conversion will only come from visionary leaders in this field, who will recognize the value of industry and market development.

## 6. The Beneficiary's Perspective

### 6.1 Propagating Performance Contracting (PC)

Performance Contracting is said to exist where the ESCO's compensation and the project's financing is meaningfully tied to the amount of savings generated by the project. As mentioned earlier, highly evolved ESCOs which have reach stage D of the evolutionary step are the few, which attempt to conduct business under such contracting methods. Saha Sprague has found that there are several barriers towards achieving performance contracting as a standard business practice. One of the most significant barriers is that most clients/consumers find this concept to be strange, somewhat new and untried, too good to be true, and therefore view it suspiciously. Standard contracts for the various alternative PC models approved by an association would make some headway towards adding credibility to such business practices. General education towards its members, Financial Institutions and consumers on the merits of PC could benefit all stakeholders of this business.

### 6.2 Are all ESCOs equal?

The simple answer to this question is "no". The more variety of ESCOs that exist, the more specialized and varied the skill sets become. This in itself is a good thing, only if these different skill sets are connected somehow. An independent association of ESCO could provide definitions of skill sets; a directory of skill sets per ESCO; act as a certifying body for able auditing capabilities; and bifurcate between products requiring certain skill sets, and skill sets requiring certain products (both equally important). This clarity will be most beneficial to a client in terms of credibility and discerning which ESCO could be the best fit for him.

### 6.3 Shared savings: you must be joking!

A business arrangement based on Shared Savings exist where:

1. The ESCO provides the resources to implement an energy cost reduction project on a funded basis;
2. The customer "hosts" the new equipment on its premises;
3. The parties share in the savings generated by the project for a fixed, specified term.

The advantages of such type of arrangement include:

1. Investment capital is provided by the ESCO/Financier, and not the client;
2. It is Off-balance sheet;
3. There are O&M savings;
4. There could be Interest and M&V savings;
5. And finally the ESCO/Financier shares the risk.

This is a novel concept for most consumers/beneficiaries in the Indian marketplace, especially for ones that are financially sound. Even the financially unhealthy clients find it difficult to convince their top management of such a concept. Organized dissemination of success stories through an association can create wider acceptance of such business practices, and thereby provide ESCOs with a larger and more vibrant market place.

### 6.4 Development of approved standard contracts and well-accepted audit standards.

Clients need to know that they are getting into contracts that are Industry standard and approved by a trusted body, so that their exposure and risks are minimized. Such bridging of credibility gap through approved contract formats will speed up market expansion and acceptance. Clients also

need to know that the methodologies and procedures for conducting audits are well within acceptable quality standards and integrity. Some accreditation of qualified auditors will also speed up market expansion and acceptance. Clients should also be educated to treat ESCOs as Business Partners and not merely vendors (long term loyalty effect for both client and ESCO), and in essence, clients should give ESCOs more respect. Clients need to realize that PCs are "made to work" and that they are equally responsible for its success. All services that positively impact the sentiment of the client could be part of the mandate of an association for ESCOs.

## 7. Lenders' Perspective

7.1 When a lender considers the question whether a project is worth financing, he will inevitably look at various aspects including:

1. **Industry and ESCO Credibility**
2. **Customer Credit Worthiness**
3. ***Propensity for Risks***
4. **Investment Hurdles Rates**
5. **Competition for Capital Rupees**
6. **Access to Financing**
7. **Cost of Capital**

Industry and ESCO credibility will first and foremost in his mind as he will essentially need to rely on the ESCO involved to mitigate the technical risks involved with the project. While each ESCO will bridge this credibility gap through their own individual track record and experience, a wider industry based credibility accentuated through organized behavior will attract more finance from a wider range of finance suppliers for ESCO projects. The simple objective of building industry credibility can have far reaching effects for both members of an association and energy consumers in general.

### 7.2 Cash Flow Based Lending

Cash flow based lending is said to take place where loans are made based on customer's cash flow stream, and not on the value of assets.

In USA, many energy efficiency projects involve cash flow financing because reclaimable assets are a small fraction of loan value. In India, Cash Flow Based financing is not common and is usually only available to mega projects. It is common for lenders to seek comfort not only from the client, but also from the ESCO, and in the process of "over mitigating" risks, many projects can become financial un-supportable. It is essential, therefore, for lenders to meaningfully tie up their lending to the savings cash flows, without necessarily requiring recourse on the ESCO, except for certain technical risks. Organized behavior could also help change this mindset within the lending community.

### 7.3 Savings Guarantees: Standards and Credibility

Guarantee formats can vary depending on the nature of the project. Generally, we consider two types of guarantees:

A: One time guarantee: Good value to customers when savings are dependent on equipment installed and not on long-term management attention

B: On-going guarantee: Appropriate when savings calculations are complex or contingent on good long-term maintenance and management

In the context of risk mitigation, lenders readily understand the A type guarantee, and perceive B type on-going guarantees as a much higher risk proposition, especially under a performance contract. Subsequently, lenders tend to price the finance for such contracts more expensively, which can significantly increase the payback period for a client. Organized behavior could be concentrated to also change this basic mindset by showing real case studies and success stories that would show lenders in general that B type guarantees in them do not make a project more risky.

### 7.4 Project Ownership and Financing

Generally, in India, ownership has become a red herring issue. Currently in India, there is some confusion between who is entitled to take the depreciation advantage under a lease structure (lesser or lessee). Such tax implications can have a huge impact financing decision, and more clarity and guidance is required. Organized behavior can once again play an active role in providing this clarity and possibly influence policy makers to not affect the ESCO business adversely.

Having determined who will enjoy the depreciation benefits, all other things being equal, ownership should be placed where it results in the lowest cost of funds. However, in India, lenders do not provide for the advantage of depreciation when they price the cost finance being provided by them. Depreciation based Leveraged Leasing does not exist in India, and policy makers and lenders need to be influenced to allow such type of funding, especially as most energy efficient products enjoy 100% depreciation in the first year eligibility. The net effect of such type of financing could help improve the payback of projects significantly, and will in turn impact the growth of this industry.

### 7.5 Lenders' Credit Assessment: Strictly Asset based?

Risk analysis is a cornerstone of financing and a borrower's credit strength is the most significant area of risk. Audited financial statements are the main tools used by financiers to assess credit strength. Credit rating partially solves problems. However, the tendency of lenders assessment has been that if a project size isn't big enough, they require the borrower to back up everything with hard collateral! Such a skewed discrimination of small to medium sized projects needs to be eradicated through ongoing interaction with the financial community. This change in mindset will significantly benefit ESCOs carrying out smaller projects, and ESCO that are new entrants. Such mindset cannot be changed singly but only through some form of organized behavior.

### 7.6 Risk Mitigation

Lenders generally try to reduce their risk by seeking security in a project in the following way:

- security interest in the equipment installed
- other credit enhancements, such as project equity, additional security above and beyond the equipment and third-party guarantees

Another method for mitigating risk is by shortening the term of financing, but this can be problematic where the simple payback for projects are more than 3 years, and there is not much residual cash generated from savings available to the client. For such measures, lenders need to be able to structure longer term funding of 7 to 10 years in order for such projects to be viable. Such terms are not impossible, but quite infrequent.

Ultimately, an Esco's track record is the best form of risk mitigation, and visibility of general success stories can be provide substantial comfort to prospective lenders.

8. Policy Makers' Perspective

### 8.1 Do policy makers have a perspective on ESCOs?

Policy Makers have a perspective with respect to Utility reform and utility financing: much has been deliberated and legislated (Power Act 2000 pending) on this subject, and much finance has been directed toward utilities and renewable (PFC, IREDA etc.), but very little has been done to propagate efficiency in general at a consumer level. As energy consumers themselves, the State possesses many government buildings that have the potential of being made efficient, and some discussion and pilot projects have taken place here.

In short, while policy makers have a utility centric view, the term "ESCO" is still not well understood and is usually used as a buzzword. While individual ESCOs make some progress in this arena on a one to one basis, there is no substitute for an organized collective voice in getting the attention of policymakers.

### 8.2 Potential contribution from policy makers

The list below represents one ESCO's (SSL's) wish list of what it would like policy makers to pay attention to:

- Maintain 100% depreciation for energy efficient products
- Clarify who the beneficiary of depreciation is under lease arrangements
- Introduce Tax Free concepts for ESCOs like EOUs
- Frame Policies that allow and encourage Leveraged Leasing in India
- Establish Energy Efficient Standards for Products
- Industry Status for ESCOs
- Infrastructure Status for ESCOs specializing in T&D and DSM

If there are many ESCOs making the same kind of sounds in synchrony, perhaps policy makers might take more notice? This could be another reason for garnering a collective voice.

9. Conclusion

The problems highlighted in this presentation are those that have been experienced by Saha Sprague in its own evolution, and is one single entity's views. There is no doubt that the presence of an association for ESCOs could be a catalyst force in making the implementation of energy efficiency into a large marketplace and industry. However, there needs to be some minimum number of ESCOs with similar aspirations, so that a natural migration towards forming a collective voice might take place. Saha Sprague welcomes views from other entities, regardless of where they fit in the evolutionary path to becoming and ESCO, and would like to explore other potential benefits that could flourish from forming a collective voice.

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**Annex 2**

**Extract of Comments from Some of the Existing ESCOs on the Formation of Proposed Indian ESCO Association**

1. "The ESCO business is a judicious mix of risk management, energy efficiency process know-how, project management skills, financing, Technology Management, Selling Energy efficiency etc. This highly-demanding service essentially need to exhibit its unbiased nature.

   The purpose of forming an association exclusively for ESCOs implies that there is a need for a separate identity and thereby lay special emphasis on the issues concerning ESCOs. Therefore, the focus on evolving the structure should be on an independent body right from its inception instead of aligning with existing industry associations. Affiliating it with industry associations may dilute the very purpose for which it is being formed."

2. "It would certainly be desirable to have a trade association. However, we are not sure of number of companies engaged in the performance contract business in India and their revenue models and actual revenues. Certain minimum number of credible companies must be there for the association to get external recognition. Simple audit farms might not add much to the proposed association.

   Initially it should be a part of a bigger reputed entity like CII/FICCI, though it may retain some kind of individual entity. Personally I would like it to be part of CII, since CII is already playing an important role in Energy Efficiency and Green Energy and have developed a fair amount of reputation for its professionalism. In addition to getting the initial recognition, this may also help in reducing the funding requirement."

**Annex 3**

**Extract of Comments from Some of the Existing ESCOs on the Structure of Proposed Indian ESCO Association**

"The primary membership should be restricted to only ESCOs who have the following characteristics:

- Assure energy savings and bear certain amount of performance risks
- Have dedicated resources available
- Exclusively render ESCO services

Only primary members (ESCOs) may be given full powers to steer the association and take decisions on policy matters. All the other support stakeholders, such as equipment manufacturers and suppliers, energy auditors, can be taken in as associate members with limited rights.

**Special status to FIs**

As financial institutions have a larger role to play in the growth of ESCOs in India and who eventually have to play an essential part in the ESCO project cycle, they may be accorded special status in the proposed body. The advise from honorary members drawn from financial institutions can provide crucial support in funding energy efficiency projects on performance contracting approach."

**Annex 4**

**Extract of Comments from Some of the Existing ESCOs on the Charter of Proposed Indian ESCO Association**

"I would like to add-'Exporting Indian ESCO services worldwide' and 'Technology development' as additional charters. Indian talent for the service business has been well established thanks to the magnificent work done by the IT industry. Similarly, services being provided by the Indian Energy professionals all over the world is considerable-I have experienced it-they are everywhere in USA and Canada-only difference is they are concentrated in institutional sectors like USDOE, CIDA, World Bank, IFCI, ADB etc. I am quite confident that reputation of their accomplishment can be leveraged in developing ESCO business worldwide by Indian Energy Service Companies. Technology development-more so in the current environment of e-platform could be another area of work. The future of the ESCO business could shape up into low cost services to customers based on DBMS and communication technology. It would be expensive for individual ESCOs to develop the same. A technology driven association could develop the same for collective use with lot of cost benefit advantage."

**Annex 5**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **INAESCO ACTIVITY PLAN FOR YEAR 1: ESTIMATES OF EXPENSES** | | | | | |
| **NO** | | | **Qty** | **Rate** | **Amount (In Rs)** | **Amount (In $)** |
| **A** | **PRELIMINARY EXPENSES** | | | | | |
| 1 | Initial expenses on concensus building. | | LS | 15,000 | 15,000 | $333 |
| 2 | Preparing Articles & Memorandum | | LS | 25,000 | 25,000 | $556 |
| 3 | Legal Charges | | LS | 25,000 | 25,000 | $556 |
| 4 | Registeration Charges | | LS | 12,000 | 12,000 | $267 |
| 5 | Misc Expenses | | LS | 10,000 | 10,000 | $222 |
| | **Sub Total** | | | | **87,000** | **$1,933** |
| **B** | *START UP EXPENSES:-* | | | | | |
| 1 | Office Space (Security Money) | | LS | 1000 Sq. Ft | 180,000 | $4,000 |
| 2 | Office Furniture & Fixtures | | LS | | 300,000 | $6,667 |
| 3 | Stationary & Printing | | LS | | 75,000 | $1,667 |
| 4 | Misc | | LS | | 25,000 | $556 |
| | **Sub Total** | | | | **580,000** | **$12,889** |
| | **DESCRIPTION** | **NOS** | **MONTHS** | **RATE** | **AMOUNT (In Rs)** | **AMOUNT (In $)** |
| **C** | **RECURRING EXPENSES** | | | | | |
| 1 | **Salaries & Wages:-** | | | | | |
| | Executive Director | 1 | 12 | 45,000 | 540,000 | $12,000 |
| | Assistant | 1 | 12 | 15,000 | 180,000 | $4,000 |
| 2 | Utility Costs (ttl,Elect; Phone,Water) | | 12 | 20,000 | 240,000 | $5,333 |
| 3 | Office Rental | | 12 | 30,000 | 360,000 | $8,000 |
| 4 | Fuel/ Conveyance etc | | 12 | 10,000 | 120,000 | $2,667 |
| 5 | Postage & Stationery | | 12 | 5,000 | 60,000 | $1,333 |
| 6 | Misc | | 12 | 5,000 | 60,000 | $1,333 |
| | ***Sub Total*** | | | | **1,560,000** | **$34,667** |
| **D** | **OTHER ANTICIPATED EXPENDITURE** | | | | | |
| 1 | Membership in other assocns. | | | | 50,000 | $1,111 |
| 2 | Travel | | | | 150,000 | $3,333 |
| 3 | Subscriptions | | | | 15,000 | $333 |
| 4 | Participation in Seminars/ Conferences etc | | | | 100,000 | $2,222 |
| | **Sub Total** | | | | **315,000** | **$7,000** |
| **E** | **TOTAL OF COSTS FOR YEAR 1** | | | | **2,542,000** | **$56,489** |
| | LESS | | | | | |
| | a) Preliminary Expenses | | | 87,000.00 | | |
| | b) Start up Costs | | | 580,000.00 | **667,000** | **$14,822** |
| | **MINIMUM RECURRING REQUIREMENT** | | | | **1,875,000** | **$41,667** |
| | Average Monthly expenditure | **156,250** | | | | |

**Annex 6**

**Extract of Comments from some of the Existing ESCOs on the Resource Mobilization Model for proposed Indian ESCO Association**

1. "The association is expected to boost the energy efficiency implementation on ESCO route and make the ESCO process more transparent and share the benefits in a pre-determined ratio with all stakeholders.

   At this stage, the proposed association need not have a full-time personnel to manage its operations. The affairs of this Association may be managed by one ESCO member at a time for a specific period. This responsibility can be rotated among the members."

2. "My guess is that we have to create business oriented revenue models rather than membership subscription and advertisement based. In fact association could be revenue earner for the members rather than contribution seeker. Contribution can be percentage share following the performance contract model. Some of the revenue generating streams could be:e-platform, training, accrediting, trade promotion, conferencing, providing legal and contractual services etc. It would be critical to develop the right revenue model and focus as the same would then determine kind of organization and the people requirement."

## Annex 7

**Information on some of the North American and North African ESCO Associations has been provided in the following pages**

CAESCO.htm

CAESCO Mission.htm

CAESCO Members.htm

CAESCO Code of Ethics.htm

CAESCO Accreditation.htm

CAESCO Accreditation Requirements.htm

CAESCO - ESCO Definition.htm

CAESCO - About ESCOs.htm

About NAESCO.htm

Welcome To NAESCO Online! The National Assocation of Energy Service Companies.htm

welcome to EESBA.htm

EESBA ( Egyptian Energy Service Business Association ).htm