Performance Contracting

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Performance Contracting for Accelerated Energy Efficiency

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OVERVIEW OF THE DSM-IEA

IEA - International Energy Agency (fd. 1974)

- Is an autonomous body within the framework of OECD
- Carries out a comprehensive program of energy co-operation among its 23 member countries
- The European Commission also participates in the work
- The goals are international collaboration in the research, development and demonstration of new energy technologies
- The IEA’s R&D activities are headed by the CERT
- 4 Working Parties monitoring various agreements, new areas and advising the CERT on policy matters
OVERVIEW OF THE DSM-IEA

**DSM** Demand-Side Management Programme

- DSM is one of the implementing agreements
- It is a collaboration with 17 IEA member countries and the EC
- It is working to clarify and promote opportunities for DSM
- 11 projects or “Tasks” have been undertaken since the start
- The overall program is monitored by an Executive Committee consisting of representatives from the member countries
- The leadership and managements of the Tasks are the responsibility of Operating Agents
- Task X: “Performance Contracting” with Dr. Hans Westling
TASK OBJECTIVES

- To facilitate the greater use of Performance Contracts and other Energy Service Company (ESCO) financial options and services in the participating countries.

- It is a business-to-business Task, limited to efforts involving the Performance Contracting agreements and other ESCO related financial options and services between client, businesses and all types of companies offering these services.

In short "Payment in relation to performance"
TIME SCHEDULE

Stockholm workshop
Exco Decision
Official Start PC Task
Initial Workshop
Prep. Country Report
Interactive Workshop
Country Plans Developed
Exp. Meeting
Lessons learned
Experts Meeting
Draft Final Man. report
Printed Draft Final rep.
Experts Meetings planned

● = Done  ○ = Planned  ● = Ongoing  M = Milestone
Needs

- Operation and maintenance of energy systems in aging building stocks cost more as the systems grow older and less efficient
- Increased environmental awareness
- Changes in legislation and rules concerning energy matters
- Ventilation and work environment issues
- Increased competition and cost-consciousness
- A joint multinational IEA Task contributes to an expanding international market for Performance Contracting
Motives

- For some property owners and users the main reason can be lack of investment money
- For some it is simply a very economical business strategy. We only pay when we see value-added functions as reduced energy bills
- For the ESCOs it is a good business argument and a way to connect with customers and start new business relations
- For some companies and government organizations it can be a very efficient way to inspire innovations and to facilitate the introduction of more efficient solutions
Some preliminary reports

- Valuable contents for future comparisons already formulated from 8 countries

- Methodology: In most cases *discussions with important* service providers and building owners.

Also in some cases *national reference groups* and/or meetings inviting all stakeholders to formulate suggestions.
COUNTRY REPORTS

Some preliminary reports...

- Different *types of ESCOs* with services in technology, energy, advisory service, financing and responsibility identified.
- The process with *different steps* shown
- In most cases an *energy audit*, preliminary analysis or feasibility study is the first step
- Different forms of *financing* is reported, also different *leases*
- The future development of EPC with combinations with different *other services* will be studied
NAESCO Database

- **Electricity Savings**
  - Lighting only projects
    - median savings is 47% of targeted equipment
  - Lighting/nonlighting projects
    - median savings is 23% of total electric bill

1500 energy efficiency projects members supply the data
MAIN ISSUES

- Information activities
- Clarification of procurement rules
- Contract arrangements
- Guarantees and enforcements
- Insurance
- Financing with different alternatives
- Measurement and verification
- Principles for sharing the positive and negative results
- Important to speed up innovation
BARRIERS

- Slow movement from buyers
- Lack of understanding of the opportunities
- Lack of information

- Time consuming work for
  - raising interest in general – formulation of contracts
  - measurement and verification – attitude and culture

- Lack of Public Recognition
- Procurement rules (Absence of bidding system)
- Lack of General Conditions

- Lack of Technical experts
  - Lack of capital
  - Different responsibility for investment and operation
  - Low energy prices
EPC/TPF procedure

Advantages for the ESCO:
- Profit
- Growth and diversification
- Synergy with other own activities
- Law incentives

Advantages for the end-user:
- More rapid implementation
- Transfer of management responsibility to the ESCO
- Better quality and reliability of the service received
- Savings
- Improvement of indoor conditions
- Outsourcing of non-core-business activities
- Updating of plants to standard
PROCESS – EXAMPLE

Preliminary analysis/Draft paper

Detailed analysis/Project description

Project implementation

Follow up

Letter of intent

Contract/Service level agreement

Measuring, reporting, controlling

Documents/Formal issues
PROCESS – EXAMPLE

Measures Implemented by the Client

Energy Audit
Finland’s energy audit programme

Measures for ESCOs or agreed with the Auditor

Tender(s) for The Project Plan

The Client accepts ESCOs tender for phases 2&3

1 PROJECT PLAN

2 IMPLEMENTATION

3 FOLLOW UP

Project cancelled

ESCO is paid off

The Client does not accept the tender
ESCO BUSINESS

Guaranteed Savings

Supplementary savings

Historical costs  Contract  Actual
ESCO BUSINESS

Heating and electricity expenses

Customer Profits

Customer Profits

Before Implementation  After implementation  After expiry of contract period

ESCOS dividend
Interest
Refund
Initial investment
REduced operating costs

Operating Costs

Guaranteed saving of operating costs


All Savings to the Customer

From LANDIS & STAEFA
"You save, we take the risk"

Example from ABB

The offer consists of two parts:
- A maintenance contract in which the ESCO has the total responsibility for the operation, maintenance and functions of the installations for a fixed, annual fee.
- An incentive contract, where the ESCO invests in energy saving measures and is paid in proportion to how well it succeeds.

The reimbursement is a percentage of the saving. The rest goes to the customer.
MOST FREQUENT SERVICES

1. Operation of a public building heating on a public market basis.
2. Operation of a district heating conceded by a municipality.
3. Operation of subsidised combined heat and power according to tariff TAC.
4. Operation of buildings’ heating with clauses of profit-sharing.
5. Integration of tertiary multi-services or facility management.
6. Industrial facilities management.
7. Operation of a geothermal production with pure sale of heat.
8. Installation and operation of solar collectors with guarantee of solar results (pure “energy-service”).
9. Operations of diagnosis by the fitters, like the “thousand boiler rooms” audit scheme.
10. Tariff optimisation of public utility by the historical operators.
11. Electric repair downstream of the meter.
12. Maintenance of decentralised electric means.
13. Operation of teleprocessing around the meter.
SHARED SAVINGS

"ESCO"
Performance and Credit Risk

Customer

Project Services
Savings Guarantee

Lender/Investor
100% Funding
# Models for Contracts & Financing

**Examples with large variations**

<table>
<thead>
<tr>
<th>Contract</th>
<th>Years</th>
<th>Profit sharing</th>
<th>Financing responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Owner</td>
<td>ESCO</td>
</tr>
<tr>
<td>Shared savings</td>
<td>Year 1–4</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>First out</td>
<td>Year 5–8</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>Shared savings</td>
<td>Year 1–8</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Year 9–18</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Guaranteed savings</td>
<td>Variable 4–15 years</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Mixed Models</td>
<td>Variable over years &amp; type of projects</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>30%</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>Guarantees &amp; enforcement</td>
<td>Variable conditions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SUGGESTED ACTIONS

1. Information
   - Seminars
   - Training
   - Education
   - Calculation templates
   - The importance for the environment

2. Introductory Energy Audits as a background for EPC contracts

3. Procurement
   - Guidelines and clarification of public procurement rules
   - Examples of tendering procedure with evaluation criteria (weighting) and pre-qualification

4. Standardised principles for EPC contracts
SUGGESTED ACTIONS...

5 Financing – Incentives
   - Flexible loan and leasing solutions
   - User organisations allowed to keep energy saving in their own budgets
   - Support/incentives for energy-efficient solutions
   - Subsidies
   - Tax exemption
   - SMB
   - Government guarantees under certain conditions
   - Higher energy prices

6 Facilitating for government – federal, regional and local – to enter into multi-year agreements
SUGGESTED ACTIONS...

7. Energy Agencies and Owners launch EPC procurements
8. Retrofitting through EPC arrangements in government buildings gives strong message
9. Quality Certification Schemes for EPC projects and stakeholders
10. Simplified benchmarking for measurement and verification
11. Model projects
<table>
<thead>
<tr>
<th>Stage</th>
<th>Notice of interest</th>
<th>Choice of tenderer</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Idea</td>
<td></td>
<td></td>
<td>Project</td>
</tr>
<tr>
<td>2 Feasibility study</td>
<td></td>
<td></td>
<td>RFP with perf. criteria</td>
</tr>
<tr>
<td></td>
<td>Could 2 and 3 possibly be brought together as a negotiated procurement in 2 stages?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Procurement</td>
<td></td>
<td></td>
<td>EPC-contract</td>
</tr>
<tr>
<td>4 Realisation</td>
<td></td>
<td></td>
<td>Energy saving</td>
</tr>
</tbody>
</table>
Contract Doc. – Important Parts (1/2)

1. Introduction
   Purpose - Type of contract - "Shared Savings" or "Guaranteed Savings"

2. Included RFP and proposal documents

3. Reference to General Conditions (national, international)

4. Energy Savings measures

5. Financial Grade Audit

6. Promise of guarantee
   Performance – Energy savings; Electricity, Heating, Cooling etc.
   – Other criteria; Air quality
   Operation, maintenance
   Investment volume

7. Options/Other services
   Training - Outsourcing - Energy delivery
Contract Doc. – Important Parts (2/2)

8. Time schedule
   Completion date - Length of contract - Years after take over - Inspection

9. Payments
   Different levels & percent sharing in relation to savings

10. Securities
    For implementation - repair - performance - insurance

11. Measurements & Verification
    Baseline - Adjustments - Weather - Occupancy - How? - By whom?

12. Conditions
    Responsibility for pre-audit, Not proceeding after detailed engineering

13. Others
    Law, language, disputes, cancellation, force majeure.
# EPC PROCESS - PROBLEMS-A

<table>
<thead>
<tr>
<th>Problems</th>
<th>Short Term Actions</th>
<th>Long Term Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Credibility</strong></td>
<td>- Information</td>
<td>- World EPC Network established</td>
</tr>
<tr>
<td></td>
<td>- SAVE, Best Practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Creation of networks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Pilot Projects</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Accreditation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- World EPC Conference</td>
<td></td>
</tr>
<tr>
<td><strong>2. Procurement Rules</strong></td>
<td>- Clarification of Rules Guidelines</td>
<td>- Different alternatives for initiation of EPC-projects accepted by all stakeholders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Both Owner, Energy Agency and EPC-Initiated</td>
</tr>
<tr>
<td><strong>3. Financial mechanisms</strong></td>
<td>- Banks awareness</td>
<td>- White and Green Certificates Trading an accepted mechanism for Climate Actions</td>
</tr>
<tr>
<td></td>
<td>- Local government allowed to enter multiyearcontracts</td>
<td>- EPC Performance Bonds established</td>
</tr>
<tr>
<td></td>
<td>- EBRB &amp; World Bank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- National Economic incentives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Government guarantees</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Warrantee formulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Insurance arrangements</td>
<td></td>
</tr>
</tbody>
</table>
**EPC PROCESS - PROBLEMS-B**

<table>
<thead>
<tr>
<th>Problems</th>
<th>Short Term Actions</th>
<th>Long Term Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Contracts Standards</td>
<td>Public Property Owners establish national Standards As FEMP, States EC, WTO</td>
<td>A &quot;FIDIC&quot; Energy Performance Contract Conditions finalised Manuals (web &amp; printed) for EPC-projects generally available</td>
</tr>
<tr>
<td>5. Measurement &amp; Verification</td>
<td>Analysis of existing Protocols Pilot Projects Simple benchmark-alternatives Yearly measuring</td>
<td>Simplified benchmarking and repeated measuring routines established</td>
</tr>
<tr>
<td>6. Market Only limited in most countries but increased interest</td>
<td>Start of breakthrough for EPC in many OECD countries</td>
<td>EPC-solutions have penetrated OECD-countries and is increasing in transition &amp; developing countries</td>
</tr>
</tbody>
</table>
**EPC VERSUS TPF**

*ESCO*

**Energy Performance Contracting**

When the remuneration of a project promoter is defined by the results of the projects developed and implemented.

**Third Party Financing**

When a project is financed by someone else than the owner of the facility where the project is implemented or the project promoter.

* Promoter in this case is defined as an Energy Service Company – ESCO

Source: Pierre Langlois, Econoler International
EPC PROCESS - DIFFERENT STAGES-A

<table>
<thead>
<tr>
<th>Stage</th>
<th>Property Owner/Customer</th>
<th>ESCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation</td>
<td>Collect background data</td>
<td>Raise general interest</td>
</tr>
<tr>
<td></td>
<td>Formulate a vision</td>
<td></td>
</tr>
<tr>
<td>Collaboration with</td>
<td>Invite to Expression of Interest</td>
<td>Respond with PQD</td>
</tr>
<tr>
<td>Energy Agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select Auditor(or preauditor)</td>
<td>Perform Audit (preaudit) or Feasibility Study</td>
</tr>
<tr>
<td></td>
<td>Decide to proceed</td>
<td></td>
</tr>
<tr>
<td>Prequalification</td>
<td>Select designer, Formulate evaluation criteria for Proposal</td>
<td>Prepare conceptual design (Financial Grade Audit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Submit proposals, only principles without prices</td>
</tr>
</tbody>
</table>
**EPC PROCESS - DIFFERENT STAGES-B**

### Tendering
- **Property Owner/Customer**
  - Organise financing if not in proposals. Select winner. Clarify technical principles and contract details, Award Contract.
  - Submit guarantee for payment if agreed.

- **ESCO**
  - The invited prequalified bidders develop their proposals with prices and possible financing.
  - Submit Performance Bond and/or other guarantee document if agreed.

### Delivery
- **Property Owner/Customer**
  - Approve details.

- **ESCO**
  - Detailed engineering, Specifications and verification principles.
  - Deliver, Install.
**EPC PROCESS - DIFFERENT STAGES-C**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Property Owner/Customer</th>
<th>ESCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery</td>
<td>Inspect</td>
<td>Correct</td>
</tr>
<tr>
<td></td>
<td>Participate in commissioning</td>
<td>Commissioning</td>
</tr>
<tr>
<td></td>
<td>Formal Takeover if agreed</td>
<td>Formal Delivery if agreed</td>
</tr>
<tr>
<td>Operation</td>
<td>Operate if agreed or Outsource</td>
<td>Assist in operation, training and maintenance or Operate (FM) the facility if agreed</td>
</tr>
<tr>
<td></td>
<td>Measure savings</td>
<td>Measure savings</td>
</tr>
<tr>
<td></td>
<td>Pay proportionally</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final Inspection after Contract period</td>
<td>Final maintenance</td>
</tr>
</tbody>
</table>

Exchange of Documents