Performance Contracting

Appendices to Summary Report

Task X within the
IEA DSM Implementing Agreement

International Energy Agency (IEA) DSM Implementing Agreement
/Swedish Energy Agency

Performance Contracting

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Task X within the
IEA DSM Implementing Agreement

Hans Westling

Stockholm, Sweden, 2003

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Also, visit the Task X website: http://dsm.iea.org/NewDSM/Work/Tasks/10/task10.asp

Stockholm, Sweden, 2003

LIST OF APPENDICES

APPENDIX 1 – Examples of Country Case Studies - Overviews

1.1 Overview - Finland

Case Studies			
	Case 1	**Case 2**	**Case 3**
1. Name of project	City of Turku, Kupittaa Sports Center	Ruoka Saarioinen Ltd.	Metso Paper Ltd.
2. Overview			
3. Type of facility	Municipality Sports Center	Food processing industry	Heat-recovery from process to ventilation
4. Size of project	Total USD 330,000		
5. Time and period	1996-1997 until 2004	1998-2000	1999-
6. Type of contract	Spar Trim TM EPC + OM	EPC	EPC
7. Procurement process, if public	Negotiated	Negotiated	Negotiated
8. Name of ESCO	ABB		Inesco
9. Installed project cost	USD 390,000 50/50	USD 370,000 20% subsidy	
10. Contract terms (number of years)	1996-2004 8 years		No security
11. Annual energy saving (in comparable units, if possible)	1,500 MWh/a 60%	5,800 MWh/a 25% of previous consumption 10% of total energy use	3,000 MWh/a 20%
12. Annual cost saving	USD 68,000		
13. Source of project financing	Through ESCO	ESCO	ESCO
14. Energy measures installed	Refurbishing of services New ventilation system Built in 1974	Heat pump Waste heat Cooling of hot water	Heat recovery
15. Other benefits (environment, air quality, etc.)	Improved indoor air quality	Reduction of 1,300 t/a CO_2 19%; SO_2 20%; NO_2 19%	Pawn
16. Measurement and verification	Monthly monitoring	Only at commission fixed payment of exceed 50/50 ???	First 6 months monthly documentation, later fixed payments
17. Comments (important lessons learned)	9 EPC projects in 2001	Biggest heat pump in Finland. EPC covers introduction of new technology	Payback time too long for traditional solutions. Try to reduce M & V work.

1.2 Overview - France

See *Country Report France* (pages 50 – 65) where five different Case Studies have been described.

1.3 Overview - Italy

Case Studies		
	Case 1	**Case 2**
1. Name of project	Caserta Civil Hospital	Omegna Local Health Board
2. Overview		
3. Type of facility	Hospital	Hospitals
4. Size of project		
5. Time and period		
6. Type of contract	Shared Savings Contracts Tranches 100%; 85/15; 75/25	Shared Savings Contract Different tranches 100%; 75/25; 60/40
7. Procurement process, if public	Tenders being evaluated	Very elaborated with criteria and weights
8. Name of ESCO		Dalkia
9. Installed project cost	3,000,000 Euro	1,890,000 Euro
10. Contract terms (number of years)	15 years	1 + 8 years
11. Annual energy saving (in comparable units, if possible)		Bid base 2,310,578 Euro Annual fee agreed 2,104,050 Euro
12. Annual cost saving		
13. Source of project financing	ESCO	ESCO
14. Energy measures installed	Ordinary & extraordinary maintenance; financing of co-generation plant. Requalification, optimisation of existing plants Automatic control system	Ordinary & extraordinary maintenance of thermal and conditioning; cogeneration plant; Technological requalification, optimisation of existing plants
15. Other benefits (environment, air quality, etc.)		
16. Measurement and verification		
17. Comments (important lessons learned)		Administrative advantage with one single procurement. Also many technical & financial advantages.

1.4 Overview – Japan

Case Studies		
	Case 1	**Case 2**
1. Name of project	Mitaka Municipal Office	OMRON Business Office in Mishima
2. Overview		
3. Type of facility	Local government office building	Business office
4. Size of project	9,600 m^2	33,118 m^2 Contract power 1,650 kW
5. Time and period	March 1999, 6 months	April 1999
6. Type of contract	Energy Savings Guarantee Contract	Guaranteed Savings Contract
7. Procurement process, if public	Invitation of tenders	
8. Name of ESCO		
9. Installed project cost		
10. Contract terms (number of years)	7 years	
11. Annual energy saving (in comparable units, if possible)	509 GJ/year; 32.4 % savings	2,045 GJ/year; 13.9 % savings
12. Annual cost saving	USD 20,769/year (10 % reduction) Cost recovery period	USD 106,000/year (11.2 % reduction)
13. Source of project financing	Own funding, 50 % by the Environmental Agency Subsidy Programme for Model Project to Cope with Global Warming	Own funding 67 %, Subsidy 33 % from the retrofitting model project subsidy program
14. Energy measures installed	Lighting; air conditioning; inverter power units; monitoring systems	Adoption of inverters in secondary cold & hot water pumps and AHU air-conditioner fans. Replacement with more efficient lamps. Occupancy sensors and energy management system (EMS).
15. Other benefits (environment, air quality, etc.)	CO_2 reduction	EMS with both energy conservation and improved indoor air. EMS creates a positive understanding of energy consumption.
16. Measurement and verification		
17. Comments (important lessons learned)	Some difficulty with decision process with contract of more than 2 years Monitoring showed at the main lobby	Higher level of illumination where needed. Frequency of replacing bulbs decreased. EMS also for managing appliances.

* Exchange rate: 1USD = 130 yen

1.5 Overview – Norway

Case Studies		
	Case 1	**Case 2**
1. Name of project	Rakkestad Municipality	Mosvik Municipality
2. Overview		
3. Type of facility	Energy optimising in two buildings	Energy optimising in five buildings of different kinds
4. Size of project		
5. Time and period	January 2000 until June 2001	2002. Monitoring starts Nov. 2002
6. Type of contract	Shared Savings Contract; Result agreement adjusted to Norwegian law	Result-agreement adjusted to Norwegian laws
7. Procurement process, if public	Seller takes initiative. ESCO responsible for investment and tendering procedure is irrelevant. Sub-suppliers are tendered.	Seller takes initiative Tendering procedure, 3 sub-projects
8. Name of ESCO		
9. Installed project cost		
10. Contract terms (number of years)	10 years	7,2 years
11. Annual energy saving (in comparable units, if possible)	Guarantee 20% Calculated 0.42 GWh/a	Guarantee 27% energy reduction
12. Annual cost saving		61,000 Euro/year
13. Source of project financing	ESCO	ESCO via financial institution
14. Energy measures installed	Energy optimising, upgrading of electric installations, new panel heaters, boiler room, automatic choice of energy carrier.	New verification system included. Upgrading of electric installations.
15. Other benefits (environment, air quality, etc.)	Lower service-costs and janitor costs Integration of several buildings to one SP-installation Possible to outsource administration	Lower service costs and janitor costs
16. Measurement and verification	Automatic collection of data every quarter	3 years consumption as reference, every quarter
17. Comments (important lessons learned)	References: http://www.energispar.no/news/pdf/overhalla.pdf http://www.netedit.no/kunder/energispar/upload/husbanken.pdf	Sales process involving municipalities takes a long time.

1.6 Overview – Sweden

Case Studies	Case 1	Case 2	Case 3
1. Name of project	Alcro-Beckers Systems AB, Stockholm	Ormingehus, Wallenstam AB, Nacka	Forvaltaren AB, Sundbyberg, public Energimarknad C. Forsberg AB
2. Overview	Includes several buildings, industry office	Upgrading ventilation, regulation	
3. Type of facility	Paint manufacturer	Former hospital, now used as offices	Apartments and commercial (50/50)
4. Size of project	33,000 m^2 total floor area	15,750 m^2	400,000 m^2
5. Time and period	1998	2000 – 2001	2001 – 2002 + additional work
6. Type of contract	Energy Management with service contract EPC (modified equal weight) with indoor climate	EPC Shared Savings	Partnering agreement /AFF General conditions for facility management
7. Procurement process, if public	Private	Private property company	Procurement, prequalification
8. Name of ESCO	ABB Building Systems	Siemens Building Technologies	TAC Energy Solutions
9. Installed project cost	Total SEK 3.5 million financed by energy savings	Euro 735,870 approx.	
10. Contract terms (number of years)	6 years	6 years	5 years
11. Annual energy saving (in comparable units, if possible)	2,200 MWh or 37%	3,100 MWh, of which 80% guaranteed = 2,500 MWh or 38%	Estimation 15% district heating and electrical. 10% water
12. Annual cost saving		Euro l00,000 approx.	See 11
13. Source of project financing	ESCO (main part)	ESCO	ESCO
14. Energy measures installed	Heat recovery, new air handling units, computerised control and monitoring	Upgrading fans, motors, new automation, monitoring, regulation. Removal of several booster fans not required for office use	Upgrading ventilation, regulation + additional to be decided Weather risk also taken by ESCO
15. Other benefits (environment, air quality, etc.)	Improved indoor climate and working conditions, reduced CO_2 emission	Better air quality, more even temperature. Reduction of noise level from ventilation	Better quality, quicker repairs after complaints
16. Measurement and verification	Monthly follow-up	Monthly follow-up	Monthly
17. Comments (important lessons learned)	Trust and open minds from both parties	Be innovative!	EPC a dynamic process involving all parties

1.7 Overview – United States

Case Studies		
	Case 1	**Case 2**
1. Name of project	Syracuse University	Houston Independent School District
2. Overview		
3. Type of facility	Private university	Public school district K-12
4. Size of project	8 million sq. ft.	22 buildings; 2.9 million sq. ft.
5. Time and period		
6. Type of contract	GESPC (Guaranteed Energy Savings Performance Contract)	GESPC (Guaranteed Energy Savings Performance Contract)
7. Procurement process, if public		
8. Name of ESCO	Alliant Energy Integrated Services Company	Sempra Energy Solutions
9. Installed project cost	Design/consult contract USD 2.5 million Perf. Contract: USD 10-12 million	USD 12.7 million
10. Contract terms (number of years)	5 years	10 years
11. Annual energy saving (in comparable units, if possible)	62,995 mmBtu	7,955,295 kWh
12. Annual cost saving	USD 1,858,134 million	USD 1,381,291 million
13. Source of project financing	Syracuse University	Tax exempt municipal bonds and ”Cool Storage Incentive” from Houston Lighting & Power
14. Energy measures installed	Heating; ventilation; lighting; electrical, Energy Management control systems; boiler; HE motors	Chillers; thermal storage; lighting; Energy Management control systems; heat exchanges etc.
15. Other benefits (environment, air quality, etc.)	Emissions reduction specified.	
16. Measurement and verification	Performance based on calculations Periodic confirmation	Utility bill reconciliation
17. Comments (important lessons learned)		

APPENDIX 2 - Estimated EPC Market Potential

The size of the ESCO industry and market potential has been estimated in various earlier reports and also in some of the Country Reports. A very rough overview is given below. The material should be treated with great care but indicates that the market potential is very large – only a few per cent of the opportunities have been utilised so far.

The annual increase in the USA from 1990 to 2000 has been 24 per cent. A cautious estimate would indicate that the market could increase by ten times or more in countries where EPC solutions are just starting (Lambert, 1999; Leutgöb et al, 2000; Country Report Japan; NAESCO Database, Task X Documentation from Expert Meetings 2001-2002). The resulting energy savings would eventually have been realised through other energy-efficiency activities.

EPC Market Potential per year – Data & Estimation

		Today 2000 – 2001		***Total potential***		***%***
		Euro	**USD**	**Euro**	**USD**	**Today/ potential**
1	"Europe"	150 mill[1)]	135 mill	70 bill[1)]	63 bill	0.2 %
2	Japan		64-196 mill[2)]		19 bill[2)]	1 %
3	USA		1.8-2.0 bill[3)]	~ 70 bill[4)]	~ 63 bill	3 %
Total 1-3			***2.3 bill***		***144 bill***	***1.5 %***

1 USD = 1.1 Euro

Sources:
1) Lambert, P (1999): "Pointers to the future". In *Proceedings from the EU Conference "SAVE for the Future"*.
2) Sugai, N & Sugano, M (2002): *IEA DSM Task X Country Report - Japan*
3) Singer T.E. & Kogan Lockhart, N (2002): *IEA DSM Task X Country Report - United States*
4) Leutgöb K et al (2000): *Third Party Financing of Energy Efficiency in Public Buildings. Pilot Actions and Schemes for Implementation*. Final Report – April 2002. Report from a SAVE project for EC DG TREN, E.V.A., Vienna.

See also Chapter 7.4 in the IEA DSM Task X Summary Report

APPENDIX 3 - Energy Savings Performance Contracts (ESPC) and Public Procurement Regulations

Energy Savings Performance Contracts (ESPC) and Public Procurement Regulations

MEMORANDUM

Gösta Westring,
Legal Specialist

Stockholm, 19 February 2002, revised 11 May 2002

Energy Savings Performance Contracts (ESPC) and Public Procurement Regulations

MEMORANDUM

Introduction

In the context of various initiatives to promote energy conservation measures, the International Energy Agency has established an expert group to study Performance Contracting (IEA DSM, Task X). At the request of Mr Hans Westling, Operating Agent for the Expert Group, I have been asked to comment on the following documents related to Performance Contracting, notably:

– IEA DSM Task X – Country Reports (drafts autumn 2001);

– Minutes of Meeting 5-6 November 2001, Coral Gables, Florida, United States;

– ”How to Hire an Energy Services Company”, California Energy Commission, April, 1999;

– Model State Performance Contracting Regulations;

– IEA Task X, Task Status Report, September, 2001;

– Notes from the United States Federal Energy Management Program;

– Various notes and copies of slides.

In this memorandum I will use the abbreviation ESPC for Energy Savings Performance Contracts and ESCO for Energy Services Company. My comments are made against the background of my experience as an advisor on procurement in the World Bank (1985 - 1991) and as a lawyer practising in Sweden and specialising in public procurement. I propose to discuss, mainly, the treatment of Performance Contracting under laws, such as that in Sweden, which build on European Community legislation. I will try to draw, also, on the extensive material made available to me on performance contracting in the United States by members of the IEA Task Force. The differences between American and European concepts and practices were highlighted – and in many ways brought to harmonise – in the context of the negotiations leading up to the 1994 World Trade Organisation Agreement on Government Procurement. After ratification, this agreement forms part of European Community law, and the overall trend is to assimilate vocabulary and practices relating to public procurement on a global basis. The United Nations' Commission on International Trade Law (UNCITRAL) has contributed towards this development through its work on a model law on public procurement of goods, construction, and services, published in 1994. Thus, it would be fair to say that the policy issues relating to performance contracting in public procurement would be handled similarly under all the major national systems.

ESPC and Public Procurement Norms

The Country Reports drafted in the context of the IEA DSM Task X include as ESPCs several types of supplies and services contracts, which have no special features distinguishing them from any other such contracts that fall under the public procurement legislation. This memorandum focuses rather more on what the French Country Report refers to as ”selling of energy savings,” i.e. contracts where the supplier guarantees that a certain investment will lead to energy savings for the customer. The US legislation on the subject (42 USC § 8287, sec. 801) defines energy savings performance contracts (ESPC) as those that ”provide that the contractor shall incur costs of implementing energy savings measures, including at least the cost (if any) incurred in making energy audits, acquiring and installing equipment, and training personnel, in exchange for a share of any energy savings directly resulting from implementation of such measures during the term of the contract. ”

One of the Country Reports studied describes an ESPC situation which comes close to the US definition. It regards an agreement by a city to obtain energy savings through improvement of the ventilation and heating system in a sports facility. The characteristics of this case were:

– The potential for energy savings had been identified in relation to an ”energy audit”;

– An ESCO designed the project;

– The agreement covered the period 1997 - 2004;

– The ESCO supplied equipment along with installation, operational management and maintenance services;

– The ESCO and the city shared financing on a 50/50 basis (partly because the investment served other purposes than energy savings);

– Periodical payments to the ESCO were made in proportion to calculated energy savings, subject to adjustment in the light of actual performance; and

– The ESCO took the risk that energy savings would not accrue during the period of the agreement in sufficient quantity to pay for its inputs.

The typical ESPC, then, provides for design, supply and installation of energy conservation facilities financed with private sector funds, which are repaid out of the resulting energy cost savings over a period of time. Several questions arise as to the application of public procurement legislation to this type of contracts.

Is ESPC a form of contract which falls under the public procurement regulations?

In America, there were apparently some questions surrounding this issue which led to new legislation, issued in April 1995, that made it possible for federal agencies, on certain conditions, to engage in procurement on an ESPC basis. In fact, action was taken both at federal and state levels to actively promote the use of ESPCs. A good example is the Model State Performance Contracting Regulations referred to in the introduction to this memorandum.

In the case of Europe, I see no reason why one should not apply public procurement regulations to ESPCs for the mere reason that such contracts include a whole range of goods and services, that the supplier's remuneration accrues only in step with and in proportion to actual energy savings, and that the contracts tend to expand over a longer period. Neither would I – for reasons developed further down in this memorandum – consider the method of financing the contract as an issue which would affect the categorisation of ESPCs. Only in those exceptional instances where the arrangement between the customer and the supplier takes the form of a partnership, the creation of a new legal entity, would one shift from the area of ”acquisition of goods and services” to company law. My conclusion, therefore, is that public entities, which plan to procure a combination of goods and services under an ESPC must do so following regular public procurement rules. The question then is how the selection of an ESCO should be made, how the principles of open competition on equal terms between all potential suppliers should be implemented?

Potential conflicts of interest at different stages of an energy conservation project

The first question regards potential conflicts of interest in the initial phases of an ESPC project. In the US Model State Performance Contracting Regulations one can distinguish the stages of:

– Needs assessment (section 11:a)

– Feasibility analysis (section 11:g)

– Financial grade energy audit (section 11:m)

– Complete design (section 11:q).

Several of the European reports distinguish ”audits”, which appear to be similar in scope and purpose to feasibility studies in the US terminology, followed by ”conceptual design”, similar to the US financial grade energy audit. Is it permissible under the procurement regulations to allow the person making the feasibility study or audit to compete for supply of services and/or equipment in a later stage of the project?

All the European procurement directives contain express provisions to restrain contracting entities from discriminating between different providers of goods and services (see e.g. Article 3:2 of the Services Directive 92/50 EEC*)*. Allowing an advisor

to compete for additional services within the scope of terms of reference that he himself has prepared would, in the opinion of many authorities, involve potential conflicts of interest and discrimination of competitors. The WTO Agreement on Government Procurement (Article VI:4) even more poignantly provides that:

"Entities shall not seek or accept, in a manner that would have the effect of precluding competition, advice which may be used in the preparation of specifications for a specific procurement from a firm that may have a commercial interest in the procurement."

The World Bank *Guidelines for Procurement (§ 1.8 (b*) also contain an express provision that any consultant providing advice on the preparation or implementation of a project funded by the Bank must refrain from any interest in subsequent supply of goods and services for the same project.

There appears to exist, thus, a conflict between public procurement principles and the business strategy of major ESCOs, which is to rein in the entire process from idea to project completion.

Separation of design and delivery in procurement of ESPC projects

Even if business practises have evolved in the ESPC area –following private sector procurement patterns – which make it difficult to fit these practises in under general rules for public procurement, gradual changes in the overall business structure may be in the making which will reduce the problem. One such development is the coming into existence of independent consulting firms offering advice on energy savings technology and willing to compete for services to analyse and design ESPC projects. The market in this respect may differ from one country to another, however. For example, the definition of ESPC in the 1995 US legislation cited at the beginning of this memorandum defines ESPC as including the entire spectrum of services and supplies connected to an ESPC – from energy audit to operation of the ready facility. Presumably, then the ESPC would be procured at one time and under one contract. I would assume that under European public procurement principles one would at least promote open competition at the project preparation stage by floating a separate tender for audit services. Depending in the next phase on the market situation, the time constraints, and the nature of the project one could in a subsequent stage similarly call for competition among qualified consultants for conceptual design. Alternatively, conceptual design could be brought in under a full ESPC tender with bidding documents drafted in such a way as to enable the procuring entity to opt out of subsequent project stages if the initial conceptual design provided by the chosen ESCO does not indicate sufficient energy savings potential.

An effort to illustrate this thinking is included in Annex 3:1.

The World Bank's method of "two stage tendering"

Despite predictions above that the consulting business has ripened to the stage where customers can obtain advice at several stages in project preparation, there will probably come up new situations where the customer finds himself restricted to the equipment

suppliers to obtain optimal assistance in achieving energy savings. In such situations the World Bank's method of ”two stage tendering” presents a possible way of procuring an ESPC package, including both conceptual design and supply of equipment and technical assistance. According to the World Bank's guidelines for procurement (§ 2.6) the method consists of inviting, in the first round, ”non-priced proposals on the basis of a conceptual design and performance specifications, subject to technical clarifications and adjustments, to be followed by amended bidding documents and the submission of final technical proposals and priced bids in the second stage”. The method is described in further detail in the World Bank ”Standard Bidding Documents, Supply and Installation of Plant and Equipment” (The World Bank, Washington DC, January 1996).

EU directives do not – in their present shape – recognise the concept of two stage tendering. A review of the procurement directives is under way. The rules concerning negotiated procurement are likely to become more flexible, which would open up the possibility for two stage tendering. Two stage tendering is also a recognised method of procurement in the UNCITRAL Model Law. The GATT Agreement (article XIV) also sketches out a procedure similar to the World Bank two stage tendering process. We are here entering a debated and complex topic; it is certainly true that devising proper tendering documents to go with the two stage tendering procedure is a task that requires very careful drafting.

Third Party Financing and ESPC

Annex 3:2 to this memorandum tries to summarise the effect of Third Party finance on the relationship between customers and ESCOs. The Annex distinguishes what I understand to be the two main options, described in the US documentation as ”Guaranteed Savings” versus ”Shared Savings”. The ”Shared Savings” approach apparently involves a greater risk on the supplier, and the trend in the US is said to be in favour of increased use of the ”Guaranteed Savings” approach.

Restricting myself at this stage to the question whether the use of Third Party finance has any effect on the choice of procurement procedure, I cannot see that public procurement regulations would be less applicable under one system or the other. As I see it, then, public entities opting for one or the other of these financing methods would have to be observing the same public procurement rules.

What might be a topic of interest to discuss in relation to Third Party finance and public procurement regulations is whether the ”Shared Savings” approach involves such a heavy burden of risk on the supplier that competition is likely to suffer. Certainly, and this is said also in the US documentation, small firms including energy consultants, would not have the financial resources required to bid under a ”Shared Savings” scheme.

Comments in the Country Reports regarding public procurement and ESPC

I noted that the Country Reports dealt mainly with other subjects than the application of public procurement rules to ESPC cases. The Japanese report mentions (on page 21) the

need to introduce a ”bidding system that compares submitted tenders by assessing the energy-saving effects and economical viability without specifying methods of energy-saving improvements”. The report does not go into detail about the manner in which public entities in Japan apply this principle. The Norwegian report (on page 20 under paragraph 9.7) mentions a problem which is generally regarded as associated with two stage tendering and which consists of infringement of the designer's copyright to his design. The World Bank has received complaints of this nature, and the problem is a sticky one. The US country report, as mentioned above, refers to changes in federal procurement regulations enabling authorities to make extensive use of ESPC procedures. There is more detail in supplementary documentation from the US side.

Summary regarding ESPC and public procurement regulations

The discussion so far in this memorandum provides a justification for the conclusion that the expert groups within IEA DSM Task X should give some further thought to the following questions:

1. Are there qualified and independent consultants who can prepare the necessary project preparation documents, including technical performance-oriented specifications, as a basis for competitive bidding among ESCOs for an ESPC?

2. How should the bidding documents for an ESPC be drafted in other parts, such as concerning financing, supply of equipment, installation, operational management, maintenance, performance guarantees, warranties, and other general conditions of contract in order to *both* comply with the procurement regulations *and* attract effective competition among ESCOs?

3. Are customers formally competent and sufficiently qualified to manage the competitive bidding process – in several stages - and shoulder the customer's obligations under a typical ESPC (such as per the procedure outlined in Annex 3:3)?

Stockholm, 19 February 2002*, revised 13 May 2002*

Gösta Westring

Annex 3:1: Procurement process – from idea to effective ESPC

Annex 3:2: Third Party Finance

Annex 3:3: Action by parties to ESPC

Procurement process – from idea to effective ESPC

Project Stage	Activities ”Fast track”		”Modest speed track”	
	Customer	ESCO	Customer	ESCO
IDEA (”audit”)	Invites EOI to do audit Selects bidders; invites proposals Awards contract Decides to proceed	Respond with PQD Submit proposals Perform ”audit”	Invites EOI to do audit Selects bidders; invites proposals Awards contract Decides to proceed	Respond with PQD Submit proposals Perform ”audit”
CONCEP-TUAL DESIGN	Invites EOI to bid for EPC Selects bidders; invites bids Awards contract	Respond with PQD Submit bids Prepares con-ceptual design	Invites EOI to do conceptual design Selects bidders; invites proposals Awards contract	Respond with PQD Submit proposals Prepares con-ceptual design
	<u>Alternative 1 – Insufficient energy savings potential</u> Opts out; pays agreed fee		Decides to give up project	
	<u>Alternative 2 – Sufficient energy savings potential</u> Opts in		Invites EOI to bid for EPC Selects bidders; invites bids Awards contract	Respond with PQD Submit bids
PROJECT EXECUTION				

EOI = Expression of interest to participate in competition (also called pre-qualification).
PQD = Pre-qualification documents
ESPC = Energy Savings Performance Contract
(”Fast track” in ESPC includes conceptual design with opt out clause; ”Modest speed track” – ESPC based on conceptual design included in bidding documents.)

Third Party Finance

	"Guaranteed Savings"	**"Shared Savings"**
1. Who borrows	Customer	ESCO
2. Amount of loan	ESPC price + interest during construction; charges	ESPC cost
3. Amortisation period	Starting when project completed and extending through period needed to recover cost of finance through expected energy savings	As "Guaranteed Savings"
4. Source of funding for loan repayment	Actually accrued energy savings	Agreed periodic amount paid by customer, corresponding to actual energy savings, subject to max. amount/period; also to verification and adjustment
5. ESCO guarantee	(a) Top up shortfall in actual vs. expected energy savings during any instalment period; (b) Maintenance and repair warranty	As "Guaranteed Savings" (b)
6. "4th Party" Guarantee	Bank or other guarantee of ESCO performance of 5 (a) and (b)	As "Guaranteed Savings" (b)
7. Customer risk	ESCO or guarantor default or "4th Party" guarantee insufficient Own default under ESPC or exempted ESCO default	Not much!?
8. Supplier risk	Expected savings do not materialise	Expected savings do not materialise Customer default (financial or other)

ACTION BY PARTIES TO ESPC

Customer	**ESCO**
Select auditor	
	Audit (analysis of potential energy savings)
Select project designer (consultant ESCO)	Prepare conceptual design (functional description)
Select ESCO (award ESPC)	
	Detailed engineering (complete technical specifications; details of energy savings and verification)
Approve detailed engineering	
	Deliver and install equipment
Inspect and approve delivery	
	Assist in operation, training, verification, maintenance
Operate plant Measure savings Pay proportionately	