



# HOW TO MARRY AN ESCO

*And not have to worry about divorce!*

BY JAMES P. WALTZ, PE, CEM

**P**erformance contracting is all the rage with “lean and clean” managers. After all, who wouldn’t want to get their building all fixed up at no out of pocket cost and with “no risk?” But is this “free lunch” too good to be true? Well...it all depends.

The economy isn’t in a recession these days, but everywhere you look companies are downsizing, outsourcing, and, in general, learning to live on less. One of the areas of *less* seems to be capital funding for facility improvements.

Facilities management departments have always been the *poor relations* in the capital funding *buffet*, with management often viewing facilities engineers (even us professionals!) as *janitors with screwdrivers*. Even projects that pay for themselves and bring along a host of non-monetary benefits often find difficulty getting funding. What’s a facility manager to do?

Here comes the performance contracting *cavalry* to the rescue! Well, maybe not exactly like that.

The energy services industry was conceived in the late 1970s and developed in the early 80s to address several problems. The industry recognized that most companies

aren’t in business to manage facilities. Facilities are a *necessary evil* that must be taken care of on the way to executing a core business, be it providing insurance, selling widgets, or publishing magazines. As a result, management generally has difficulty getting excited about putting money into some *thing* called an “EMCS” (energy management control system) or “VAV” (variable air volume) — which they don’t really understand — when they could be using that money to automate their customer billing system or put in a new packaging line.

The problem here is twofold: First, management really wants to focus on their core business. Second, facilities folks have a hard time achieving credibility with management. To slay this two-headed dragon, the energy services industry developed a compelling business proposition: it bundled the capital to finance facilities improvements, the technical expertise to identify and detail the needed improvements, the brawn to build the improvements, and a guarantee of performance, all together in a single, turnkey package. In fact, *compelling* is a modest description of how attractive the energy services or performance contracting proposition is to managers who encounter it for the first time.

On the other hand, there are the *horror stories* about performance contracting deals gone sour. So which is it? Nirvana or a modern-day version of purgatory? Actually, it’s both. Which one you get as a facilities manager depends on how well you inform yourself and how well you curb your own rabid self-interest, as we’ll see in the following discussion of ESCOs, project management, case studies, guarantees, and guidelines for dealing with ESCOs.

## Who are the ESCOs?

The folks doing performance contracting call themselves by many names, yet energy services company (ESCO) is perhaps the most common. Whatever they call themselves, though, these companies are not homogeneous. ESCOs can generally be grouped into four basic "models" (see **Table 1**):

- Manufacturers
- Brokers
- Contractors
- Utilities.

These models may be a bit simplistic, but they pretty well define the characteristics of most of the players who offer performance contracting services. Each brings a unique bias to the table, which astute facilities managers must be aware of.

The **manufacturer** model usually stems from a manufacturer of energy conservation products that has branch offices which have traditionally sold and/or serviced the products the factory produces. In most cases, performance contracting is an added *product* to their existing line of products and services. Generally, the local branch office is fairly well-equipped with engineering and installation staff. However, if a local branch approaches you, beware: they may or may not have any experience in the performance contracting business and may just be selling a program that has been handed down to them from headquarters. In that case, they may see the performance contract as just another way to peddle their wares.

The **broker** model covers most of the nationwide companies. Usually, these firms lack in-house engineering and installation capabilities. They typically have a core team of managers, sales, and technical people who set up the deals and then sub out the work to local or regional engineering and contracting firms.

The **contractor** model most often exists on a local or regional basis. These are usually Design/Build mechanical, electrical, or controls contractors who realized they could either be

a sub to a performance contracting broker (as described above), or compete directly against other performance contracting firms in their own markets. While lacking the *big guns* of national players, these ESCOs usually have much greater in-house engineering and installation capability. When new to the business, these ESCOs may not always be as seasoned in their approach, but they usually counterbalance that with their technical know-how.

The **utility** ESCO is oftentimes a broker ESCO that got acquired by a utility, or an in-house brokerage operation that was created by hiring local talent to start it up. The principal motivation of a utility ESCO is to help the utility ensure long term survival and success by diversifying into an unregulated business. Since the business is so foreign to their core business, success is often elusive. Some utilities are in their second or third ESCO start up.

## What Do ESCOs Do?

When they do their business well, ESCOs bring a great deal to the table, including:

- Project funding and a way to ensure that the project will be successful, thereby reducing the risk and perception of risk related to the project
- Project management, including organizing and managing all team members and their activities
- Engineering, including performing the feasibility study and performing the final design
- Contracting, including obtaining the materials and equipment, installing the project, and commissioning the project upon completion
- Monitoring the performance of the project and maintaining it over time.

When done right, these services are invaluable. This is especially so when the engineering and contracting resources work together to identify and implement cost-effective retrofits which otherwise would be overlooked through the more traditional plan-and-spec/competitive-bid method of design and contracting. Indeed, it's this Design/Build aspect that really helps a well-executed per-

ESCO CHARACTERISTICS				
CHARACTERISTIC	ESCO "MODEL"			
	MANUFACTURER	BROKER	CONTRACTOR	UTILITY
GEOGRAPHIC SCOPE	NATIONAL	NATIONAL OR REGIONAL	MOSTLY REGIONAL	NATIONAL OR REGIONAL
PRINCIPLE FOCUS	INSTALLATION & SERVICE	PLACING FUNDS	INSTALLATION & SERVICE	DIVERSIFYING INTO UNREGULATED BUSINESS
IN-HOUSE ENGINEERING	MODERATE TO SUBSTANTIAL	GENERALLY NIL	MODERATE TO SUBSTANTIAL	NIL TO MODERATE
IN-HOUSE INSTALLATION	MODERATE TO SUBSTANTIAL	GENERALLY NIL	MODERATE TO SUBSTANTIAL	GENERALLY NIL
ON-GOING SERVICE & MONITORING	GENERALLY IN-HOUSE	GENERALLY SUB-CONTRACTED	GENERALLY IN-HOUSE	GENERALLY SUB-CONTRACTED

**Table 1. Escos can basically be broken down into four categories.**

SUMMARY OF CASE STUDIES							
PROJECT CHARACTERISTICS	TYPE OF FACILITY						
	COUNTY OFFICES	PRIVATE HOSPITAL	PRIVATE HOSPITAL	COUNTY BUILDINGS	COUNTY BUILDINGS	COUNTY BUILDINGS	PRIVATE HOSPITAL
RESULTS	SUCCESS	SUCCESS	FAILURE	FAILURE	ABORTED	QUALIFIED SUCCESS	MIXED
TYPE ESCO	CONTRACTOR	MFGR.	MFGR.	BROKER	BROKER	CONTRACTOR	BROKER
PROCURED BY	RFP/NEGOT	NEGOT.	NEGOT.	RFP/NEGOT.	RFP	NEGOT.	RFP/NEGOT
ENGINEERING	EXCELLENT	V. GOOD	DISMAL	DISMAL	N/A	MIXED	MIXED
INSTALLATION	GOOD	GOOD	INCOMPLETE	N/A	N/A	EXCELLENT	N/A
MONITORING & MAINTENANCE	GOOD	GOOD	FRAUDULENT	N/A	N/A	GOOD	N/A
GUARANTEE?	YES	YES	YES	YES	YES	NO	YES
COMMENTS			1	2	3	4	5
<p>1. NO SAVINGS PRODUCED AT ALL AFTER 1.5 YEARS. ESCO SUBMITTED FRAUDULENT MONITORING REPORTS. OWNER SUED ESCO.</p> <p>2. FEASIBILITY STUDY WAS FRAUDULENT. OWNER SUED ESCO.</p> <p>3. FOLLOWING PRE-PROPOSAL WALK THROUGH WHERE IT WAS DISCOVERED THAT THE FACILITIES' HVAC SYSTEMS WERE VIRTUALLY NON-FUNCTIONAL AND IN NEED OF MAJOR RESTORATION ONLY ONE ESCO SUBMITTED A PROPOSAL - WHICH WAS BOGUS. OWNER DECLARED THE PROPOSAL NON-RESPONSIVE AND TERMINATED PROGRAM. OWNER LATER SOLE-SOURCE NEGOTIATED A LIGHTING RETROFIT PROJECT ONLY.</p> <p>4. FEASIBILITY STUDY WAS ERRONEOUSLY OPTIMISTIC. ACTUAL SAVINGS HAD TO BE VERIFIED FOR UTILITY REBATE. OWNER ULTIMATELY SATISFIED WITH WELL PLANNED &amp; IMPLEMENTED PROJECT, EVEN THOUGH SAVINGS WERE LESS THAN ANTICIPATED.</p> <p>5. ESCO HIRED TWO ENGINEERING FIRMS TO PERFORM THE FEASIBILITY STUDIES FOR THE FACILITIES. ONE WAS VERY WELL DONE, THE OTHER WAS DISMAL. OWNER TERMINATED CONTRACT AT COMPLETION OF STUDY DUE TO CHANGE IN OWNERSHIP.</p>							

**Table 2 highlights seven performance contracting projects performed by different types of escos — some were successful and some failed.**

formance contract *kick butt* by creating added value that you just can't achieve through the traditional bid process.

However, there's a dark side. When performed unscrupulously — and new *scammers* creep into the industry daily — the process brings some not-so-good stuff to the table:

- Project funding that isn't competitive due to the need for performance contracts to be negotiated rather than competitively bid
- Fraudulent performance "assurance" — the antithesis of the "no risk" initial proposition
- Pseudo project management, where everything is subbed-out and no one's really watching the store
- Bogus engineering, where the feasibility study has the goal of justifying a predetermined sales figure, rather than attempting to uncover the true inefficiencies of the facility and its energy using systems
- Little or no documentation of the actual installation work
- "Low-buck" sub-contracting, where price is the only issue and "commissioning" is a concept foreign to the contractors
- Monitoring in the form of phony reports, which simply regurgitate the original bogus estimates of savings from the original feasibility study
- Maintenance, where the maintenance budget is spent trying to finish the original installation work.

Our company has seen both scenarios, in all their contrasting *glory* (or *gory*, as the case may be). Good or bad results aren't restricted to any of the ESCO models. Smaller, local contractors can turn out marvelous projects, and large, nationally-prominent

firms can produce projects that are truly despicable. This range of possibilities is conveyed in **Table 2** which summarizes a variety of real projects we've been involved with, sometimes as the expert witness investigating the reasons for non-performance.

### Potential Pitfalls

There are too many program managers (*i.e., bean counter* types) who approach an energy conservation program like it's no different than buying a million rolls of bathroom tissue. You borrow someone else's spec, put it on the street, take low bid, and wait for delivery. Nothing could be simpler, right? Unfortunately, the difference between success and failure is all in the details — and the attitude.

*Greed* can be a fatal flaw in a performance contract, be it on the part of the ESCO, the owner, or both. In business school they teach about the *greater fool* syndrome. This is what occurred in the late 1920s when the stock market went crazy because stock buyers bid up the price of stocks to unbelievable levels. How can this happen? Well, as the instruction goes, it doesn't make any difference what you pay for a stock, as long as you can find someone who is an *even greater fool* than yourself to sell it to.

Owners go astray if they focus almost exclusively on the "financial" side of an ESCO's offering. This is an easy trap to fall into when the whole reason for hiring an ESCO is because your organization doesn't have the capital funds to pay for the project and is locked into the mindless procurement methodology

of awarding contracts based on *low bid*.

First of all, almost nowhere is the concept of *you get what you pay for* more true than in the world of retrofit. Retrofit work can't be defined with the same ease as new construction. When well done, the least costly retrofit is a product of the engineer and the installer working in intimate collaboration. This means it's the product of a Design/Build process, which is nearly impossible to competitively bid (and you're mistaken if you think it can be!).

Second, just as Design/Build retrofit is impossible to competitively bid, the "savings" to be produced in a performance contract also can't be competitively bid. This is for a few reasons, including the fact that a good, honest estimate of potential savings *can't* be made until a detailed feasibility study has been performed. Such a study is expensive to complete and **no** ESCO can afford to incur this cost on a speculative basis prior to the signing of a contract.

Also, accounting for the savings actually produced by an energy retrofit project can't be established with absolute certitude — only with a fairly high degree of confidence. As a result, the inability to document savings with absolute precision means that someone who has sold you a ridiculously high estimate of savings, can perpetuate your role of the *greater fool* by selling you a similarly bogus monitoring report.

The fourth case study in **Table 2** is a case in point. This County chose their ESCO based almost entirely on the ESCO's *projection* of savings following a very sketchy survey of 50 or so facilities. In fact, the County even chided proposers who presented reasonable (low) savings estimates for trying to "cheat" the County! The County's program manager (a contract employee) was compensated based in part on the projected savings (the bigger the estimate, the bigger his compensation), so he was an active *promoter* of big savings numbers. Combined, these forces allowed an unscrupulous ESCO to generate wildly optimistic savings estimates during the sales process and be *welcomed* by the buyer in doing so! Fortunately for the owner, they realized their folly fairly early (though not before paying the ESCO nearly a million dollars for "services" provided) and terminated the relationship before it got completely out of hand.

The third case study was similarly unfortunate in that the owner bought a wildly optimistic savings estimate. Unfortunately, they didn't discover their folly until 1½ years after the project was complete, when somehow, the meter just didn't seem to be spinning any slower (even though the ESCO was *certifying* monthly that it was!).

A word of caution: Pay close attention to ESCOs whose organizations are dominated by marketing-types. In these organizations, the

sales folks sometimes come up with outlandish preliminary projections of savings during the sales process. Then, during the detailed feasibility study phase of the project (if there even is one — which there should be!), they coerce the engineers into making the sales "lies" into "truths" by finding (read *creating*) the savings which justified the sale in the first place. This may seem unbelievable, but it happens. Unfortunately, it seems that once an organization allows themselves to start down the crooked path, it's seldom possible to make a *course correction* later on.

## **Guarantees: What Are They Worth?**

If you've been reading this article and thinking, "but I'll be OK — I have a *guarantee* in my contract," think again.

The problem with guarantees? As mentioned earlier, *the savings actually produced by an energy retrofit project can't be established with absolute certitude*. There are lots of ways to account for savings (or, more correctly, *cost avoidance*). Among the methods are utility bill comparison, measure-specific instrumentation, and stipulated calculations.

No matter what the *monitoring and verification* experts tell you, there is no perfect method to account for the energy saved by a retrofit project. Any method is subject to error and interference. After all, we're measuring something no longer there.

Think about this: Will the guarantor even let you exercise the terms of the guarantee? For example, say you went with a broker or a local branch of a national vendor. What if you made a claim against the guarantee, and by doing so, you put the local branch manager's job on the line? In that case, the manager would likely stonewall the situation until the very end — at which point he'd probably be let go and you'd find yourself dealing with corporate counsel.

So, the bottom line here is that figures don't lie, but liars can sure figure. If your ESCO wants to lie to you, there are a thousand ways to do so. And since they're the ones generating the data, most owners are going to be largely at their mercy when it comes to cost avoidance accounting. Ask yourself if your counsel can overpower the ESCO's. If not, your guarantee isn't worth much.

Compounding the situation is the fact that even a worthless guarantee still costs a lot of money. Before the ESCO writes a guarantee into your contract, someone on their side will make sure they've budgeted for the instrumentation, data gathering and reduction, data analysis, regular reporting, and answering all the questions you're going to ask when you

start getting the monitoring reports. That costs a lot of money — say 5% of the total project cost — and in the end, may be worth nothing.

What if your organization insists on having a guarantee? Well, that's fine, but don't buy into your *bean counter's* reliance on the guarantee as your *salvation*. Recognize it for what it is (a way to neutralize management's veto) and focus on what it really takes to get the job done:

- A team (possibly an ESCO) with the real capability to perform all the necessary work
- Actually doing the work, *i.e.*, finding the inefficiencies in your facilities and correcting them.

These are the foundations of a successful project — not a lot of paper.

### **The Importance of Project Management**

If you're looking for someone to handle your program for you, it's probably not best to let the mice take over management of the cheese factory. Even well-meaning mice frequently succumb to the lure of a late-night snack.

The ESCO you hire may be very honest and diligent in handling their part of the deal, but you need to be right there in the trenches too. If you need help monitoring the ESCO's work, get it — and have the ESCO fund the cost.

Whether you handle the project management entirely in-house or get help, there are a few critical issues you need to attend to:

- Make sure your contract puts *you* in charge — your approval should be required at every step in the process
- Make sure that the various milestones are clearly identified in the contract including -hiring of any subs, be they engineers or contractors
  - performing the feasibility study(s)
  - deciding on which retrofit measures to incorporate into the final program
  - final design and equipment selection
  - start-up and commissioning
  - selection of monitoring methodology.
- Make sure that *escape routes* are identified in the contract — it's much better to pull out of the deal after a "botched" feasibility study and start all over again than let an ESCO proceed to follow an erroneous "road map."
- Make sure that the services and deliverables to be provided are clearly defined, both in

terms of how the work is to be done and what the finished product will look like (*e.g.*, it does no good to have a contract merely say that a "full energy audit" will be performed — ask to see the criteria the firm will use to perform it — or provide your own. Also ask for sample documents from similar projects — these can help clarify the content and character of deliverables).

There's no rocket science here, just common sense. Do your homework carefully, and your project will succeed.


### **Tips for Hiring ESCOs**

Here are some guidelines to think about while you're looking for, and later working with, an ESCO:

#### **Procurement**

- Don't allow yourself to be swayed by visions of cash flow — this will only prevent you from focusing on the *right stuff*.
- Don't overestimate the value of a guarantee. Perhaps your board will insist on one, but remember, doing the homework is your best guarantee.
- Focus on the team's expertise and experience, especially on the technical side. Don't let the sales and finance people distract you.
- Look for local companies to work with. These people have a reputation to maintain in the local marketplace — they'll have as big a stake as you do in a successful project.
- Pay close attention to implementation criteria such as the feasibility study, final design, and commissioning. If you don't know where you're going and what it looks like, you'll never get there.

#### **Implementation**

- Never tie the program manager's compensation to savings
  - Carefully define the following, and demand they be satisfied:
    - investigation duties and deliverables
    - final design duties
    - start-up duties
  - Carefully define the cost account procedures and actively critique results
  - Actively monitor the program — don't be an absentee manager. Get help if you need it.
- In our experience, we've never seen a performance contract *go south* where these guidelines were followed. Consider them seriously if you're about to embark on such a trip. 

---

**James P. Waltz, PE, CEM, is president of Energy Resource Associates, Inc. He is a charter member of the Association of Energy Engineers (AEE), and also a member of the Association of Energy Services Professionals (AESP), Demand Side Management Society (DSMS), and the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE). He has a B.S.M.E., holds an MBA, and was named International Energy Engineer of the Year in 1993 by the AEE. He has extensive experience performing energy audits and providing expert testimony related to failed energy services projects.**