



Energy Program Outsourcing

*By Greg Haddow
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Increase Energy Program Effectiveness and Value

There is a growing interest in outsourcing the implementation of energy programs and energy services among utilities, energy agencies and regional energy offices. This practice has the potential to increase the participation in new and existing energy programs and initiatives (i.e., energy efficiency, demand response, energy resource procurement), as well as create additional value for customer participants, and improve overall program effectiveness. Energy program outsourcing has a number of implementation alternatives:

- Program design utilizing third party suppliers
- Unique program implementation through “private labeling” of high value-offerings provided by energy services delivery companies
- Complimenting existing programs with energy service company in-house technical support or service enhancements
- Outsourcing entire programs to a qualified energy services delivery company

Energy program outsourcing could provide results that:

- Encourages market players to introduce innovative approaches addressing both energy supply and demand side opportunities
- Allows utilities and agencies to focus on their relationships with their “customers” and let energy services companies focus on program delivery and measurable results
- Increase participation in and collaboration with existing federal, state, as well as local utility and agency energy programs and initiatives
- Improve the overall performance of existing and new energy programs

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Energy Program Outsourcing

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The Partnership: Challenges & Opportunities

Planning and implementing high performance energy efficiency and demand response programs requires a design that maximizes timely and sustainable installations. Educational programs, “free” audit services and energy consultation activities, play a key role, but more is needed to maximize equipment and facility changes necessary to achieve desired reductions in energy usage and demand. The historical performances of such activities, while necessary to heighten customer awareness of opportunities, tend to lack the necessary “push” to achieve installed and sustainable energy efficiency and demand reductions. In addition, while utility and energy agency program designs certainly have delivered measurable results, more is potentially achievable when these program designs rely on implementation resources from the energy services community. As regional power systems look upon these programs as “resources,” maximum performance become essential. “Partnering” with the energy services community will also ensure that these programs reach their highest level of performance by delivering what matters most to customers: saving money and creating value. What can be done to increase the performance of these initiatives? This discussion reviews the value of, and ways to leverage today’s energy services marketplace to increase the performance of energy efficiency and demand response initiatives, with two key objectives in mind:

- Increasing the level of participation from potential program outsourcing suppliers
- Increasing the level of performance & assurance among program outsourcing suppliers and customers

This discussion identifies some of the ways to take advantage of the natural market incentives captured in today’s maturing energy services marketplace and steadily growing energy services provider community (hereafter referred to generally as energy services companies or ESCOs). Energy services companies (ESCOs), when partnered with today’s utility companies or energy agencies, will be more effective in achieving energy efficiency and demand response goals than either of these parties working separately. Utilities and energy agencies offer energy industry expertise, utility system knowledge and customer relationships, while ESCOs provide technical diversity in their business models and services, uniquely available in their industry, and compatible with today’s business customer. (Please see [Table 1](#) for a breakdown of these complimentary resources).

This discussion pertains mainly to commercial, institutional and industrial business customers. The broadly interpreted ESCO business model is described in the context of these specific business customer sectors. Some of the points made may apply to residential and small business customers, but no attempt is made to identify these applications. Also, this discussion assumes that utilities or energy agencies

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usually operate their energy efficiency or demand response programs in the context of some system requirement, performance goal or resource plan. Hereafter, this discussion will refer to these as “resource plans” and yet, these applications should not be limited to a resource plan oriented use of ESCO services. Instead, this discussion is focused on broadening the use of the ESCO in any application of energy program execution: “franchise-based,” full program implementation under a utility or agency “private label,” integral service provider in the context of a larger program, and more. And, while the use of “standardized performance contracting” type programs continue to attract ESCOs to provide project by project services, the intention here is to broaden the reader’s understanding of additional ways the energy services community can provide increasing value to the utility or energy agency and its customers. For a comprehensive review of additional program implementation approaches with “third parties” please see the work sponsored by Connecticut Light and Power (Goldman, 2000)².

Table 1 – Core Strengths and Complimentary Resources “Team-up” to Benefit Customers

Utility or Energy Agency	ESCO
Knowledge of the customer, customer’s energy and demand use; billing history	Technical expertise of customer energy solution alternatives & customer business models
Customer transaction interface, communications & local presence	Dedicated team of energy experts assigned to a specific customer & solutions / projects
Knowledge of customer requirements for utility services, infrastructure & system economics	Knowledge of customer energy plant interface / interconnect with utility infrastructure; project economics
Business objectives are broadly focused: system, regulation and the customer	Business objectives singularly focused on the customer’s business needs and values
Utility/agency programs may add to overall system costs and are less market efficient	Provides natural market efficiencies that reduce societal costs and increases sustainability
Regulated energy services that are responsive to regulation, with multiple stakeholder input	Comprehensive mix of energy services, driven by customer specific needs
Regulated business incentives to reduce costs and create system efficiencies	Natural business incentives to create a value proposition; bias to take action in response to shared objectives

The Benefits of the “Partnership”

The **Partnership** described here relies on collaboration among customer, utility or energy agency and ESCO participants. These parties must “partner” or tactically ally to survive the volatile energy environment and help customers decrease or stabilize their “total cost of energy.” More importantly, successful implementation will, in the end, reduce the energy-related business risks for each customer. [Table 2](#). summarizes the issues and recommendations regarding the implementation of today’s energy efficiency and demand response programs. This discussion expands on these issues and recommendations.

First, let’s explore some of the benefits of the “Partnership”.

² Goldman, C., (prepared for Connecticut Light and Power, Connecticut Department of Public Utility Control, Docket 99-09-30), Role of Third Parties in Energy Efficiency Programs: A Review of Alternative Approaches & Experiences, 2000.

Focused Resources

The ESCO's primary business objective is to provide energy services to the customer on a stand-alone basis, or, as promoted here, on behalf of the utility or energy agency within an outsourced program structure. This delivers a tighter focus of resources with a single objective, that is, when contrasted with full utility or agency program implementation or with utility or agency implementation supplemented with piecemeal-outsourced components (e.g., the ESCO provides only the energy audit). Plus, where an energy program is "turn-keyed" fully to an ESCO, they will also be able to take on the time consuming program administrative and performance reporting responsibilities, freeing up utility or agency time and resources for their core responsibilities.

Trusted Commitments & Shared Objectives

In many cases the ESCO builds its relationship with the customer through some form of guaranteed results or a "performance contract." By definition, the performance contract drives the mutual commitments between ESCO and customer; complete with terms and conditions that create assurances that the desired results or objectives will be achieved. The performance contract holds the parties to shared objectives with financial rewards when achieved, and financial consequences should they not be achieved.

Speed

Because the ESCO business objectives are compatible with that of the customer's, and is driven by the customer's business objectives, the pace of implementation is also likely to be compatible. Plus, because the ESCO is usually bound contractually to provide energy service to the customer, as well as the accompanying resource to the utility or agency, the ESCO can work creatively within that structure to deliver the requirements more rapidly than perhaps a regulated utility or agency may be able to. Contrast this with the utility's perspective, designed to be responsive to system service needs, and because of the additional element of regulation, the pace and responsiveness may be less compatible with the business needs of the customer.

Innovation

A flexible agreement between the ESCO and the utility or energy agency, (i.e., in implementing energy program objectives), will increase the potential for innovation and customization of energy solutions for a given customer. A target is agreed to and the ESCO and the customer set out to achieve these targets. By contrast, less flexibility in implementation could result in less focus on the customer's needs and increased "cream skimming" mainly to achieve a specific utility or agency program requirement (e.g., a narrower set of energy efficiency measures). More unique energy applications can be created through the ESCO and customer business relationship.

Costs & Market Efficiencies

In the cases where the "program" design gives a selected ESCO a broad market (i.e., customer sector or "franchise" and a flexible range of energy solutions), this will allow for increased economies-of-scale and reduced transaction costs, among other efficiencies ([discussed below](#)). For example, if the ESCO agreement with the utility or agency allows for a more comprehensive maximization of the number energy efficiency measures per customer, the transaction costs decrease measurably. Similarly, the greater the flexibility to respond to a single market, the greater the economies-of-scale, due to extended use of methods unique to that market. Achieving more energy efficiency per customer site means that parties are less like to make return visits in subsequent years, thereby lowering customer transaction

costs and program costs. This may also lead to serving fewer customer sites per year, which increases sustainability. The New York Power Authority's recent RFP for their Energy Services Statewide Program is an example of an effort to capture some of the benefits of the ESCO business model with increased implementation flexibility³.

Sustainability: allowing the market to perform

Two design features will increase market sustainability: the adopted business model and term. As described below, adoption of a robust ESCO business model will drive sustainability. Once the ESCO is given implementation flexibility, for example, a variation of a "franchise" or "right to serve" several markets over an extended period of time, the ESCO creates natural market alliances (e.g., manufacturers, installers, design firms, lenders, other ESCOs and customers) that take advantage of the mature energy efficiency marketplace. Then, sustainable relationships with customers develop further, perhaps well beyond the scope of the energy interests of the utility or agency, because the value delivered by the participating energy services companies, and allies, are driven by the customer's business needs. Sustainability increases as the term of the agreement or "franchise" increases, providing the more time to develop lasting customer business relationships, the backbone of market development and sustainability.

Other Interests Leveraged

As noted above, ESCOs offering a broad range of energy services (e.g., retail electricity and natural gas, facility management and comprehensive energy risk management) have the potential to provide the customer with increased value beyond the program. This will further drive the market sustainability through the specific customer-ESCO energy service relationship.

Program Implementation Conditions

The following are important aspects of implementation that allow the utility to take advantage of the ESCO's strengths in the marketplace, as well as the unique role they can serve for the customer.

Timetable: delivery of energy savings

Timing recommendations tie to two key elements of implementation: compensation / incentives and resource plan true up. One recommended schedule for both is illustrated in [Table 3](#) below. Compensation should be tied to a "pay-for-performance" business model where, aside from an initial compensation for program start-up, payment is tied to performance milestones. Plus, it is recommended that these milestones be related to key points in energy savings delivery to allow for a true up to the resource plan, based on actual measured program performance.

Markets

As mentioned [above](#), a higher performing implementation approach would allow an ESCO a "franchise" or exclusive role with a specific customer sector, within certain market performance conditions (e.g., energy efficiency services provided to all customers in that sector by request, by geographic roll out, and/or by specific time based milestones). Allowing more than one ESCO to serve a specific market could create customer confusion, uneconomic competition that could erode the economies-of-scale, and potential for differing performance standards with customers. Movement toward this "ideal" operating

³ New York Power Authority Request for Proposal, Energy Services Statewide Program, Program Management & Implementation Services, Inquiry No. Q-02-3492jb, September 13, 2004.

condition increases the importance of ESCO qualifications. To achieve all the advantages of this “partnership” approach, and to deliver large-scale impacts in a short period of time, qualifications become a key to success.

Qualifications of Energy Services Companies

To capture the above-mentioned benefits several qualifications need to be met by participating ESCOs.

Credit & Guarantees

The ESCO and/ or its parent company should have an investment-grade bond rating. This, in part, is a necessary to determine if the organization has the financial strength to deliver and support long term guaranteed energy savings performance contracts:

Performance Contracting

An energy savings performance contracting service generally provides:

- Installation of all cost-effective measures
- ESCOs make up the difference financially if the savings are not achieved
- Payments made from energy savings, with flexible payment options
- Offers turnkey financing for multiple projects
- Meet customer and utility or agency environmental requirements
- Allows the customer to pay for other building and facility improvements
- Help the customer qualify for federal, state and utility financial incentives

Design / Build Engineering

This is the delivery of energy efficiency measures, from energy evaluation, to design, to installation and commissioning. Some customers may prefer not to have a long-term energy savings guarantee and at the close of construction will stipulate to the energy savings agreed to during the contracting process.

Retail Energy Commodity and Comprehensive Risk Management

Some customer projects or business conditions may require an evaluation of energy efficiency measures in light of an anticipated energy commodity contract (i.e., electricity and natural gas) as part of the implementation process. For such cases, the cost savings of the energy efficiency measure will depend on the terms and conditions of this contract, and may influence or trigger discussions with the retail energy commodity supplier. This condition may delay implementation and expand the comprehensiveness of the energy solution.

The customer may already be operating under a retail energy commodity contract, or may be contemplating such an action (or suspect that utility tariffs will dramatically change) in the context of making and energy efficiency investment. For these customers, the ESCO, at a minimum, needs to be able to evaluate potential energy efficiency investments under various expected future price conditions.

Facility / Asset Management & Ownership

ESCOs sometimes recommend, or the customer prefers that an operations and maintenance (O&M) contract be included as part of the performance contract to ensure that the energy savings are delivered over the life of the contract, especially if the energy measure has O&M requirements not easily served

by the existing facility staff. Some ESCOs may be requested to take an ownership position in the newly installed energy measure (e.g., high efficiency central chiller plant).

Size & Scale

In order to achieve the results expected for energy efficiency and demand response program procurement an ESCO must have size and scale in a number of specific energy services areas noted here:

Energy Program Support

- Program design
- Administration and management
- Site implementation and installation
- Monitoring and verification
- Measurement, evaluation and reporting

Energy Program Technical Support

- Energy-related institutional (i.e., hospital, college, university, government, schools), industrial and manufacturing processes
- Upstream central energy plant and output distribution
- Installation and commissioning

Comprehensive Energy Audits

- All end uses and energy inputs (e.g., natural gas, electricity, fuel oil, central plant)
- Energy supply and procurement strategies
- Cost-effectiveness analysis and financial evaluation

Energy Supply & Demand Risk Assessment

- Simultaneous examination of energy efficiency and demand response opportunities in light of existing and forecasted energy supply position (contracted with a non-utility entity or under utility tariff)
- Understands energy commodity hedging tactics (price risk management)
- Understands customer's energy related cost-of-doing-business and related risks

Performance Contracting (repeated from above)

An energy savings performance contracting service generally provides:

- Installation of all cost-effective measures
- ESCOs make up the difference financially if the savings are not achieved
- Payments made from energy savings, with flexible payment options
- Offers turnkey financing for multiple projects
- Meet customer and utility or agency environmental requirements
- Allows the customer to pay for other building and facility improvements

- Help the customer qualify for federal, state and utility financial incentives

Track Record of Performance

Consider these criteria for screening an ESCO's background:

Proven Performance & Experience with Guaranteed Savings Contracts

At least 10 years of verifiable guaranteed energy savings contract experience with a portfolio of existing performance contracts in place. More can be learned about the qualifications of the ESCO in question, in following up on a list of credible references.

Utility and Energy Agency Program Experience

In reviewing the ESCO background in delivering energy services, look for those who have worked within the context of utility or energy agency programs. Some have experience in working directly with an energy program in a support role or more directly in administering and implementing some of the energy program elements. Some may have a background in delivering a turnkey energy program through an "outsourcing" approach, or "all resource bidding" procurement efforts where they may have been given a "franchise-like" opportunity to deliver results to a specific market. Please refer to the few evaluations in the literature that review the earlier DSM Bidding experiences in our industry (for example, Goldman and Kito, 1994⁴) for more information on the work done by the utilities and the energy services community.

Vendor & Manufacturer Neutral

The ESCO that is not restricted to use a specific manufacturer or contractor usually has the flexibility to provide the customer with a variety of solutions that best meet their business needs.

Knowledge Of Energy Efficiency Laws

The ESCO has demonstrated that they have a working knowledge of applicable energy efficiency laws and related building codes.

Strong Financial Integrity

As noted above under [qualifications](#), the ESCO or affiliate should have a bond rating of investment grade in order to carry out and guarantee a longer-term performance contract.

⁴ Goldman, C. and Kito, M., Review of Utility Experiences with DSM Bidding, LBL-35021, 1994.

Mechanical & Electrical System Expertise

ESCOs with comprehensive skill sets can deliver comprehensive solutions, which provide the customer will more options. At a minimum, mechanical and electrical engineering expertise will usually be required.

NAESCO Accreditation



The National Association of Energy Services Companies or NAESCO is one of the few organizations with a range of energy services accreditation programs. In their Web Site: <http://www.naesco.org> NAESCO describes each of their accreditations and how they are applicable to a given customer's situation. NAESCO explains, "Companies seeking NAESCO Accredited status must apply to a committee of industry experts, and undergo a rigorous examination of their technical competence and business practices. The committee carefully reviews detailed documentation and consults with selected customer references. The committee looks at ten criteria including the precise nature of the applicant's business; the range of measures and services offered to customers; the availability of a performance-based project approach; ethical business proactive commitment; project engineering and design, financing, project management, operations and maintenance capabilities; and the capability of verifying and monitoring energy cost savings."

NAESCO recognizes three categories of company: 1) The full-service Energy Services Company (ESCO); 2) the Energy Service Provider (ESP); and, 3) the Energy Efficiency Contractor (EEC).

NAESCO accreditation was designed to highlight the managerial, financial, and technical capabilities of energy services organizations, for all members and customers, to recognize quality and experience.

Rebuild America and ENERGY STAR Business Partnerships

Various business partnerships with government and non-governmental organizations also help round out the value that an ESCO can bring to a customer through an energy program or stand-alone service. Both Rebuild America and ENERGY STAR offer nationally recognized efforts to increase the energy effectiveness of its participants. For example, in the case of ENERGY STAR, sponsoring ESCOs can also offer assistance to aid in the customer's participation in its energy efficient building-labeling program. Training efforts and trade advances are just a few of the benefits of ESCO and customer participants alike.



Comprehensive Range of Energy Services

The more comprehensive and integrated the menu of energy services options, the more valuable an energy services company can be to a customer. Here is a summary of some of the more popular energy services requested (some noted above):

- Energy Asset & Facility Management
- Energy Infrastructure Ownership
- Design Build Performance Contracting
- Energy Efficiency Audits (investment grade or otherwise)
- Real-Time Energy Information

- Electricity & Natural Gas Products
- Price Risk Management

Value-added Services

Here are some examples of the types of “value-added” services ESCOs can offer to compliment to their core business:

Internet Access Services

- Energy use monitoring (real time or day later; data storage & analysis)
- Settlements / billing (billing imaging; explanation of all energy bill charges)
- Service requests (online customer services portal)

Reporting

- Regulatory and state agencies
- Environmental and air quality districts
- Local utility or agency regarding program performance

Environmental

- Permitting and licensing
- Monitoring, reporting and remedial diagnostics

Energy Market Tracking

- Energy market outlook reports (market conditions, forward prices, transmission constraints, reserves, storage, planned generation)
- Weather reports (impacts on energy use by region)
- Energy efficiency technologies and “best practices” updates

Energy Services Outsourcing

- Energy audits
- Technical support
- Industrial process expertise
- Energy project financing

Customer Services

- Energy-related technical support
- Billing support
- 24 hour phone representatives / hot line
- Internet-accessible customer services portal

Table 2 – Procurement Components & Evaluation

Component	Issue	Expectation	Recommendation
Cost Effectiveness: minimum thresholds vs. maximization	By measure, by project, by program year / by overall proposal?	Should utility or agency sponsor only cost effective measures?	Increased economies-of-scale & lower transaction costs, when by market, program & project
Energy savings commitment, a priori (ex ante)	What level of savings should be forecasted in the Resource Plan & when?	“Realistic” resource value of the energy efficiency “program” (for Resource Plan)	Savings commitment should be only those under a “guaranteed savings” provision, as per the customer contract
Energy savings adjustments, ex post	Adjustments in energy savings for the Resource Plan	True ups to the Resource Plan should be made	Adjustments should be made based on M&V results of performance
Customer information (e.g., usage, demand, tariff / contract, site data)	Customer information improves savings forecast & decreases risk	ESCOs can make improved commitments as customer information is improved	Utility or agency should create ways to improve quality of customer information early in process
Measurement & metrics	Clarity upfront: methodology, avoided costs & reporting requirements, etc.?	Uniform across ESCOs & consistent with utility / agency requirements	Identify all parameters & requirements before agreements / commitments made
Customer interface	Level of customer communications, endorsements & assistance?	What is appropriate level of involvement from utility/agency?	Partnership: Tight collaboration with & sponsorship from utility/agency before, during, & after “program”
Premiums	Level of difficulty in achieving savings should be “rewarded”?	Not all program implementation targets are equal in level of “difficulty to achieve”	Tie premium to length of time & cost to achieve installation, penetration rate & “hard to reach” characteristics
Cream Skim vs. Comprehensiveness	Cost effectiveness decisions (above), range of acceptable measures & program flexibility?	Comprehensiveness per customer site improves economies of scale, lowers transaction costs; impacts cost effectiveness	Encourage & reward comprehensiveness per site; ESCO flexibility tied to customer business needs.
Qualifications of energy services provider	Qualifications may preclude firms that can’t guarantee energy savings	Utility/agency should focus on performance, not supplier equity	As noted above in section 1., minimum qualifications regarding credit & experience are essential
Timetable for energy	C&I & Institutional	Resource Plan may	Multiple adjustments to the

savings delivery	customer projects require about 24 months to deliver savings	need adjustments out one year	Resource Plan at each of the three stages, as proposed here
Compensation and incentives	How should ESCOs be compensated for delivering savings?	Utility/agency must work within regulatory guidelines	Four payments at each of the three phases proposed here for units of kWh & kW achieved
Energy savings guarantees	Energy savings do not materialize	Resource Plan must be supported	ESCO replaces non-achieved energy savings with additional projects without utility compensation
“Markets” awarded to the ESCO? (Energy services “franchise”)	ESCOs “energy service markets” should not overlap for effectiveness?	Program economics depend on market availability and “mutual exclusiveness”	Utility/ agency guarantees and supports mutually exclusive market “franchises”

Program Design: “Cream Skimming” vs. Comprehensiveness

This is a fundamental decision point in the policy direction the utility or energy agency wishes to take in designing its energy program (or “resource procurement”) process. This decision determines the extent to which the ESCO business model will be applied, and from that, the level of overall program cost effectiveness, as well as the measures that will earn their way into the utility’s or agency’s program mix, or resource plan. These points are discussed below but can be summarized with these guidelines:

- The more the ESCO is encouraged to apply their business model to the customers and markets, the more comprehensive the set of energy efficiency and demand reducing measures will be installed per customer site. The “comprehensiveness” of these measures will be driven by customer business needs and determination of value to their organization. For example, it’s possible that the customer may value a number of measures not recognized by utility or agency program, and yet these measures may provide the necessary economic value to the customer to execute the contract. As noted above, the ESCO business model allows for increased innovation and is an essential ingredient to market sustainability. Enabling the ESCO business model to run its course allows a longer-term relationship to develop with the customer. It is this relationship that sustains this market, through the development of creative energy solutions, guaranteed performance contracts, and responsiveness to changes in the energy market over time.
- As the implementation or procurement requirements move away from utilizing the ESCO business model, there could be a greater tendency toward “cream skimming” or rather, selecting only the most cost effective measures per customer site (i.e., moving away from a more comprehensive mix of measures). The mix of measures selected may be driven more by utility, agency and system requirements (e.g., the value of demand reduction for the utility or agency may be greater than that realized by the customer). With this framework there may be a tendency to implement only prescribed measures, and achieve volume-oriented goals. This approach provides a limited foundation upon which a longer-term relationship can be developed, which leaves less opportunity for market sustainability.

Cost Effectiveness Calculations: minimum thresholds vs. maximization

Let's examine how the test of cost effectiveness can be applied to the delivered energy efficiency or demand response work of an ESCO.

Minimum Thresholds

The "minimum threshold" approach for the implementation of the energy efficiency work means that all measures installed meet a minimum threshold of cost effectiveness or a "must meet" financial / economic criterion. These minimums are usually driven by a predetermined requirement, whether it be set for each measure, end-use, customer project, or annual program in order to qualify under the agreed upon "program" design. For example, for a given measure to qualify for a customer project, minimums must be met. Then, for a total program, some projects are above the minimum thresholds, some are just at the minimums, and no measure program-wide would be below the minimum. As the minimum moves away from a "per measure" basis, and toward a "per program" basis, greater flexibility is achieved and there will be an increased tendency toward more comprehensive customer projects.

Optimization & Maximization

Contrast this with the "optimization" approach where on a customer project-by-project basis the objective becomes achieving a blend of measures set at the optimal level of cost-effectiveness for that specific customer. The "maximization" approach sets out to achieve the most comprehensive energy project desired by the customer, where some of the measures may be marginally cost effective, and yet the total project meets a minimum level of cost effectiveness. This approach allows the customer to drive the decisions based on their business need and the measures implemented.

By Measure, Project & Program?

And so, the cost effectiveness requirements must be set to some level for program delivery. If examined by total program (perhaps, over some set period of time) then the ESCO is able to achieve additional economic value.

Program Design and the Economies-of-Scale

As noted above, if the program design gives the ESCO a specific market (segment, geographic, time bound or otherwise limited), the economies-of-scale are increased. Increased economies-of-scale are also realized by the trade allies the ESCO brings to market through their program. This will lead to increased market sustainability, especially if such a program is in place for a number of years. Resource deployment is more effective and customer confusion is reduced when a "franchise-like" exclusivity is granted to the ESCO with a multi-year agreement.

Lower Transaction Costs

Lower transaction costs are realized when an ESCO is granted a cost effectiveness threshold on a total program basis. This means that the cost per "reach" or costs associated with working with each customer or transaction is reduced because these costs are spread over more measures. As the ESCO works with the customer to meet their specific business needs, there may be a requirement to install marginally cost effective measures or upgrades that are best done during the installation of the energy savings measures. This approach may also lead to a more productive ESCO-to-customer relationship; driven by the customer's business requirements, and creating further market sustainability.

Measure Selection: Resource Plan vs. Customer Plan

The strength of this “partnership” approach rests on the ESCO business model working with the customer to achieve lower energy related costs and reduced business risk. The resource plan or reduced demand benefits of energy efficiency and demand reduction are the consequence of this “efficient” and responsive relationship. However, as this business model is allowed to work in this context of resource procurement the sponsoring utility or agency may decide not to include some of the marginally cost effective measures in its resource plan. If agreed to in advance, the utility or agency can select and limit ESCO compensation to only those measures it has determined will have resource value. This seems reasonable only if these “rules of engagement” are determined in advance of program implementation. This is a foundational point of this discussion and key to the success of this “partnership”: the balance between the resource requirements and the ESCO-customer business relationship. The “price of admission” to allow the ESCO business model to operate unencumbered, may be to allow less than 100% of the projects measures to be recognized for resource procurement purposes.

Commitment Up Front (a priori / stipulated savings estimates)

As illustrated below in the three-phased approach, the initial resource plan could be based on the ESCO proposal that will require an energy savings “placeholder.” This could be based on a stipulation of the expected savings on whatever program dimension agreed to (i.e., by measure, project, or program year). This is described below as [Phase 1](#).

Resource Plan Adjustment (ex post)

[Table 3](#) also illustrates when the adjustments should be made to the resource plan during Phases 2 & 3, based on achieved milestones and measured savings.

Customer Information

Another key to the “partnership’s” success will be establishing an effective way to transfer key and mutually agreed to customer information to the ESCO, as early in the sales process as possible. This should include a role for the customer to provide consent to use their energy information and an opportunity to update and improve these data (e.g., with usage, demand, tariff / contract data, site data, previous energy audit information). The utility or agency can serve a key role in facilitating this step. Also, if agreed to up front, the ESCO can provide the utility or agency updated customer information obtained through their program implementation.

Customer Interface

Similarly, the utility or agency can play an equally important role in assuring the customer and ESCO are brought together in a seamless transition to avoid the delays, increasing acceptance rates and improving performance overall by eliminating the “cold call.” Also, it is even more vital that the utility / agency and ESCO “customer outreach and communications” efforts be done jointly and in the most effective manner possible. This will reduce customer confusion, increased program penetration, increased implementation speed and foster a sense of trust and commitment.

Measurement & Metrics

All measurement related metrics and evaluation criteria should be identified as early in the program design process as possible. If conditions or requirements change post-implementation, an equitable negotiation process should be implemented where cost and timing impacts can be re-assessed into the original agreement.

Premiums for Existing Program Referral

Quality implementation efforts should help customers earn any utility, agency, state or federal incentives available through some referral or qualifying process embedded into the implementation plans of the ESCO's program. In some cases the associated measure may not be credited to the ESCOs targets, even though such an effort may help the utility or agency meet its program penetration goals, and possibly, in a more effective way. Such efforts should be expected and some premium should be given to the ESCO for accomplishing this.

Premiums for "Hard to Reach" Markets

Similarly, there are various pockets of customers in the utility or agency's service area that have historically achieved low levels of energy efficiency or demand reduction. Should the utility provide such leads, and the ESCO is successful in penetrating these markets, these accomplishments should be rewarded with some premium appropriate for the effort and impact.

The Three Phases of the Partnership Approach

As stated above, ESCOs partnered with utilities or energy agencies are more effective than either party working separately in the delivery of energy efficiency and demand reduction. A number of points have been made to support this position. In terms of specific execution benefits, in light of the system or resource planning objectives, these key attributes of this model make it effective:

- Utilities and energy agencies offer industry and system knowledge with strong customer relationships
- ESCOs provide a technical diversity that is complimentary to utility and agency expertise
- ESCOs operate a business model that is compatible with customer's business needs
- This "partnership" approach takes advantage of natural market incentives and the mature energy services marketplace

The Partnership approach can be implemented in three phases:

Phase 1. Program Design & Stipulated Savings Estimates

Phase 1. takes place at the point in time where the ESCO is awarded a "market" or program.

Awarding Successful Bidders

As noted above, the ESCO is awarded a "market" and agreements are made with the utility company to forge a partnership in serving this market.

Program Design

These awards will be primarily based on the credibility of the program design and the examination of the ESCOs capabilities and qualifications to execute it.

Stipulated Savings

Estimates of energy savings and demand reductions can be the basis for the “go-forward” nature of this phase of the program. It’s possible that the stipulated amount of savings can serve as a “placeholder” in the utility or agency’s system deliverables or resource plan until they are verified and revised as discussed below.

Compensation & Incentives

If there is some form of compensation in exchange for the meeting the program objectives, it is suggested that 25% to 35% of the total compensation or incentive pool (as determined by the utility’s or agency formula and tied to proposed savings) should be provided when the “market” is awarded to the ESCO (please see [Table 3.](#)).

Phase 2. Guaranteed Savings Contract

Phase 2. is time-bound to the program periods (e.g., per year), commencing with each signed agreement with a customer, and ending based on the program period or some other milestone. Progress is measured and reported on, contract-by-contract, and can be aggregated to provide program progress reports quarterly.

Revise Resource Plan and Reallocate Commitments Based of Program Performance

It is during Phase 2. that it is recommended that the hosting utility or agency reassign committed energy savings agreements from the less productive ESCOs or energy service suppliers to those who have made significant enough progress to warrant additional program performance goals, if parties are agreeable. Otherwise, precious time may be lost to shore up the energy savings committed to in the resource plan or overall performance goals.

Detailed Energy Audit

Early indications of potential energy savings can be quantified to refine the stipulated savings estimates (placeholders) at the culmination of the Detailed Energy Audit portion of the work with a customer. This becomes the basis for the eventual performance contract, or similar, and, if required, can be used as an early adjustment to expected energy savings. However, this stage in project development is not conclusive enough to warrant this as the final adjustment to the resource plan and can be skipped if this level of precision is not necessary for energy savings placeholders.

Comprehensive Energy Analysis

As noted earlier, for some customers being served by, or contemplating receiving service from a retail energy service provider (e.g., electricity service under direct access or similar), the Detailed Energy Audit may require a more sophisticated economic energy analysis in order to more appropriately evaluate viable energy efficiency investments. For example, because these customers may not be served energy under utility tariff, this type of analysis will be required to help the customers with their expectation of future energy prices (e.g., using the market forward curve) to calculate the potential customer-specific avoided costs.

Customer Contract and True-up to Resource Plan

Once the customer contract is signed, it is at this point that the stipulated energy savings (i.e., placeholder) can be adjusted or replaced with the contracted (and in many cases, guaranteed) energy savings in this agreement. Contracted savings amounts can be aggregated based on program time frames, the year the savings will materialize, by end use, or time of impact, to mention a few.

Compensation: Pay-for-performance

The next 25% installment of compensation or incentives toward the adjusted estimated energy savings should be paid based on the Detailed Energy Audit results (which become the foundation for the eventual performance contract).

Phase 3. Year One Performance

Phase 3. contains two key milestones that require the next two 25% incremental incentive payments, plus one last adjustment to the resource plan.

Commissioning

Once the project construction and installation portion of the work is complete, the building and its equipment are commissioned into service, and the “performance phase” of the performance contract commences. It is at this point that the next 25% incremental incentive payment should be made. This, in part, may help the ESCO pass along all or part of this payment to the customer in the form of incentive rewards for the work complete thus far.

Monitoring & Verification (M&V) and True-up to the Resource Plan

M&V commences post commissioning and once the customer’s operations resume. After one year of M&V, with the posting of agreed upon performance reporting. The last and final 25% incremental incentive payment is made and the final adjustment to the resource plan can be made (based on M&V performance measurement).

Compensation: Pay-for-performance

As noted above, ESCO compensation is made at two key delivery points in Phase 3: at project commissioning and after one year of M&V. The compensation should be matched to actual performance (achieved savings) and not the original stipulated savings, which should be adjusted in the three phases described here. The last and final incentive payment is adjusted to fit the year one M&V data, acting as a balancing account, increasing or decreasing this payment based on actual results (vs. stipulation-based payments).

Implementation of Performance Guarantee

The performance guarantee between the customer and the ESCO contains its own assurances and is tied to some financial performance mechanism. Usually, in the normal ESCO business model, if the ESCO fails to achieve the contracted savings, the ESCO pays the customer the difference. In the case of a utility or agency’s resource plan, more value may be placed on the delivery of the energy savings and demand reductions. Although the method of implementation of the guarantee will be negotiated between the utility / agency and the ESCO, one would expect to see a provision where the ESCO is allowed to “make up the difference” in energy savings through additional customer projects.

Table 3. Illustration of the three implementation phases for a typical project timeline, project deliverables, compensation schedule and adjustments to the resource plan.

Project Timeline	Phase 1. Month 1	Phase 2. Month 3	Phase 2. Month 6	Phase 3. Month 12-18	Phase 3. Month 24-30
Incremental Payment of Incentive	1st – 25% to ESCO when selected	2nd – 25% at completion of energy audits	Contract is signed; installation commences	3rd – 25% when project is commissioned	Final 25% after year one of M&V
Adjustments to the Resource Plan	Initial Plan based on a priori program estimates	1st true-up to Plan based on energy audit findings	No true-up to plan	2nd true-up to Plan based on commissioned measures	3rd true-up to Plan based on measured results

Summary of Recommendations

Once a utility or energy agency decides to implement its energy programs through an ESCO, program performance can improve greatly, as these recommendations are adopted.

Table 4. Implementation recommendations for outsourced energy programs

Component	Recommendation
Cost Effectiveness Thresholds	Increase economies-of-scale and reduce transaction costs by setting cost effectiveness thresholds at the market, program or project levels
Energy Savings Commitments	Savings commitment should be those under a “guaranteed savings” provision, as per the customer contract
Energy Savings Adjustments	Adjustments should be made based on audit results, commissioned measures and M&V results of performance
Customer Information	Utility or agency should create ways to improve quality of customer information as early in the implementation process as possible
Measurement & Metrics	Identify all parameters & requirements before agreements / commitments made with ESCO; negotiate late-breaking new requirements
Customer Interface	Partnership: Tight collaboration with, and sponsorship from utility/agency before, during, and after implementation
Premiums	Pay premiums to ESCOs based on penetration rate in “hard to reach” or based on length of time and cost to achieve installation; pay premium for ESCO customer referral to existing utility or agency programs
Cream Skimming vs. Comprehensiveness	Encourage and reward measure comprehensiveness per site; ESCO flexibility should be tied to customer business needs, as well as utility/agency needs.
Qualifications of ESCO	Investment grade credit, verified “book” of performance contracts with credible performance history (10 years), and wide range of expertise of energy services are essential
Compensation and Incentives	Four payments of 25% at: 1) program commencement, 2) energy audit results, 3) project commissioning, and 4) year one M&V