



Energy Savings Performance Contracting Program **Process Description**

I. Program History

The Energy Savings Performance Contracting (ESPC) program was developed to provide a means to install Energy Conservation Measures (EEMs) in State facilities without affecting the State's capital budget. The ESPC program within the Department of Enterprise Services (formerly General Administration) has since been expanded to provide energy conservation services to all public facilities in the State.

In 2001, the Legislature found that the economy of the state and the health, safety, and welfare of its citizens were threatened by the current energy supply and price instabilities. The ESPC program has been involved in over \$300 million in total energy construction projects since its inception in 1986, resulting in \$15 million a year in annual utility costs reductions to public facilities.

II. Energy Service Company pre-qualification

On a biennial basis, the Energy Program prepares an advertisement to be placed in the Seattle, and Portland editions of The Daily Journal of Commerce, and the Spokesman Review in Spokane. The advertisement describes the intent to develop a pre-approved list of Energy Services Companies (ESCOs) providing services to public facilities in the State for the upcoming biennium. ESCO firms submit a summary of their qualifications and experience. The submittals are reviewed by the Energy Program and those ESCOs deemed to be qualified are interviewed and offered a Master Energy Services Agreement. This makes them eligible to participate in energy related projects at public facilities managed by the DES Energy Program.

III. Client agency and DES contractual agreement

Local governments, school districts and state agencies (referred to as Client Agencies) must enter into an Interagency Agreement (IAA) with DES before they can participate in the program and work with one of the pre-qualified ESCOs. The IAA is drafted pursuant to Chapter 39.34 RCW. It allows the DES Energy Program to provide overall contracting and project management services to the Client Agency. All work by the Energy Program is authorized by amendments to the Agreement. Compensation for DES's Energy Program services is based on a pre-determined fee schedule that sets project management compensation levels based on the total project value. If the Client Agency proceeds with a project, then they are obligated to pay DES based on the project management fee schedule. If the ESCO fails to develop a project that meets the Client Agencies established cost-effectiveness criteria, then there is no cost to the Client Agency.

IV. ESCO selection by the client agency

Client Agencies are allowed to select any of the pre-qualified ESCOs to work with under the ESPC Program. The DES Energy Program Manager assigns energy project managers (PMs) to work with clients based on their locality within the state or by client organization. The Energy Program PM will provide the client with a copy of executive summaries from each ESCO's statement of qualifications. The summaries provide key information on how each firm approaches projects, their specific experience, and the scope of projects completed in recent years. The PM also has access to the full Statement of Qualification and sample energy audits that each of the ESCO's submitted for evaluation by the pre-qualification selection committee. Client Agencies may use whatever selection process that complies with their own policies and procedures for selecting firms that provide professional services. If the Client Agency chooses to interview firms as part of the selection process, the Energy Program PM may sit in on ESCO interviews but does not participate in the final decision-making process. The Client Agency selects the ESCO.

Energy Program PMs have engineering and other technical experience in energy efficiency technologies and construction projects. These individuals are primarily licensed professional engineers who can interact with the ESCO on issues such as appropriate modification to existing building energy systems, control strategies for heating, ventilating and air-conditioning (HVAC) systems, and appropriate measurement and verification (M&V) methods associated with these retrofit projects.

V. Preliminary audit

After the Client Agency has selected an ESCO for their facility or project, the PM will conduct a walk-through energy audit of the facility with the selected ESCO and the facility representative to determine the general scope and size of the project. During the development of the preliminary audit, energy baseline development and M&V methods will be discussed. DES and the Client Agency will review and agree with the methods proposed.

Prior to the walk-through the Client Agency will provide the ESCO with information about the facility, including utility billing information from at least the most current 12-month period (data covering the past two years is better). Utility data may include electricity, natural gas and water consumption records as appropriate. Information about the facility such as operating schedule, typical number of occupants and square footage are also helpful. This data is analyzed to establish the energy utilization index (EUI) of the facility. EUI may be thought of as similar to a car's fuel efficiency in miles per gallon (mpg). In buildings the lower the EUI, the better it's performing.

The purpose of the preliminary audit is to determine if a potential project exists and, to identify potential EEMs. This is also the time to evaluate equipment data-logging opportunities. (It is difficult, for instance, to get a good representation of cooling equipment operation in the winter or true occupancy patterns of a school in the summer.) The preliminary audit stage is an opportunity for the Client Agency and the PM to clarify with the ESCO the Client Agencies cost-effectiveness criteria and any specific requirements or limitations for the project. ESCOs use the preliminary audit and subsequent proposal process to ensure there will be a feasible project established.

VI. Investment grade audit

Once the ESCO, DES Energy PM, and the Client Agency are satisfied that there is adequate energy saving potential in the facility, the next step is to move to the investment grade audit. The ESCO will develop a proposed scope of work that will include the systems to be evaluated, the timeline to completion, and the cost to conduct the investment grade audit. The PM will review the proposal and negotiate the cost of the audit prior to the proposal being presented to the Client Agency.

Upon receiving Client Agency approval to go forward, the Energy Program PM will prepare an Energy Services Authorization. The Client Agency also receives a Funding Authorization document for signature. By authorizing the funding, the Client Agency certifies to the Energy Program PM that funds are appropriated and/or allocated for the project.

The ESCO will then proceed to conduct a detailed investment grade energy audit of the facility(s) and submit an investment grade audit and energy services proposal to the Energy Program PM and the Client Agency for review and approval.

The investment grade audit is to analyze all cost-effective EEMs for lighting, HVAC equipment, building envelope, steam systems, chilled water systems, domestic hot water and other water using systems, controls, energy generation and distribution systems, and waste management systems. The audit will evaluate the economic performance and investment value of the EEMs.

There are three potential outcomes of the Investment Grade Audit:

1. If a facility does not have EEMs that meet the “cost effectiveness criteria” established by the Client Agency, there is no cost to the Client Agency for the audit. This is true unless the Client Agency, DES, and the ESCO agree to other arrangements. In that case these special arrangements must be reflected in the Authorization between the ESCO and Client Agency.
2. If the ESCO identifies cost-effective measures and the Client Agency decides not to proceed, then the ESCO will be reimbursed for the audit and the Energy Program will be paid a termination fee. This occurs rarely.
3. If the ESCO identifies cost-effective measures and the Client Agency decides to proceed, an energy services proposal is presented to the Client Agency.

The energy services proposal outlines the maximum guaranteed construction cost guaranteed and guaranteed equipment performance.

VII. Cost-effectiveness criteria

The definition of cost-effectiveness for energy conservation projects is found in Chapter 39.35C.010 RCW. It states:

"Cost-effective" means that the present value to a state agency or school district of the energy reasonably expected to be saved or produced by a facility, activity, measure, or piece of equipment over its useful life, including any compensation received from a utility or the Bonneville power administration, is greater than the net present value of the costs of implementing, maintaining, and operating such facility, activity, measure, or piece of equipment over its useful life, when discounted at the cost of public borrowing.

This means that projects are considered cost-effective if they result in a net positive present value over their economic lifetime. For purposes of determining economic lifetime, ESCOs rely on generally accepted engineering practice as is guided by entities such as the American Society of Heating Refrigerating and Air-Conditioning Engineers (ASHRAE), or other national or international standard setting bodies.

The following general criteria are commonly used to determine the cost-effectiveness of EEMs proposed in the energy services proposal. Occasionally a Client Agency will have additional criteria that must be met, such as shortened facility life time due to planned replacement.

- The Client Agency may use any combination of the following funding and payment options to discharge its obligations under the Energy Services Agreement:
 - ESCO financing;
 - ESCO arranged Municipal Lease financing;
 - State Treasurer's LOCAL Program;
 - Other third-party financing (banks, etc.)
 - Energy cost savings, utility cost savings, and approved O&M savings to pay off any of the above debt structures;
 - Grants, loans and/or incentives from utilities or other funding sources; and
 - The Client Agencies capital budget or any other funds at the Client Agencies discretion.
- The Client Agencies loan term may not exceed the economic life of the ECM, unless otherwise approved by the Client Agency and DES.
- Not more than 90% of the energy cost savings may be used to repay the loan, unless approved by the Client Agency.
- Up to 100% of utility grants may be used to defray project costs or to repay the loan.
- Labor or maintenance cost savings shall not be included in energy cost savings for the purpose of determining cost-effectiveness, unless specifically approved by the Client Agency. These will typically represent costs for purchased parts and service contracts, not internal labor costs.
- The cost of the EEMs will include: the cost of the investment grade audit and preparation of the energy services proposal; project design; construction; ESCO's construction and project administration; DES's project management fee; system commissioning; bidding; bonding; overhead and profit; permits; taxes; training; cost and saving guarantees, and other costs that may be agreed to by the ESCO PM and the Client Agency.
- The Client Agencies cash flow including savings, utility contributions, cost of measurement and verification services, cost of EEMs, and loan repayments shall be neutral or positive with respect to the baseline cash flow and based on guaranteed savings.
- Current utility rates shall be used for the purpose of calculating energy and utility cost savings. Energy and utility cost inflation factors shall not be used without the Client Agencies expressed approval.

VIII. Energy services proposal and ESCO construction contract

The energy services proposal contains a breakdown and details of the following:

- Facility name, description, EUI, square footage, existing equipment, etc.;
- The EEMs proposed for installation, including quantities;
- The EEMs analyzed but not recommended;
- The EEMs proposed/analyzed but not chosen by the Client Agency;
- Improvements to operations and maintenance (O&M) practices for existing equipment;
- The maximum guaranteed project cost, including engineering and design, permits, materials, construction, commissioning, ESCO fees, DES Energy Program fees, measurement and verification fees, etc.;
- The energy and energy cost savings expected from the EEMs and O&M recommendations;
- Savings guarantee;
- Project cash flow over the term of the project financing, including capital infusion, financing expenses, and M&V costs;
- A detailed schedule for project completion;
- Verification that comfort conditions will be maintained at the facility;
- Identify the services and associated costs for the ESCO during the course of the project, including but not limited to; engineering, construction management, preparation of O&M procedures, training of facility personnel, commissioning, functional testing, HVAC testing, adjusting and balancing, start-up/stop, warranty services, and equipment maintenance; and
- The nature and extent of work and equipment that the ESCO will receive from other firms under subcontract.

The ESCO's overhead and profit and other approved markups to the overall cost of the project are set in the Master Energy Services Agreement. A contingency amount is included to cover any hazardous material costs or additional work for unforeseen conditions that may be encountered in the construction of the project. If contingency is used, it will be managed jointly by DES, the ESCO, and the Client Agency. The use of the contingency requires a change order to the ESCO construction contract.

Once the Client Agency approves the energy services proposal, the PM amends the Energy Services Authorization to add the design, construction contract administration, and overhead and profit.

After the project design is completed and approved by the Client Agency and the Energy Program PM, the ESCO will begin the procurement process. ESCO projects are delivered through a turnkey negotiated process and the ESCO is not required to publicly advertise for bids. The ESCO can procure the equipment through bidding, negotiation, or thru self performance.

- For bidding, the ESCO can solicit bids from preselected sub-contractors, and will consider the client agencies requests for specific sub-contractors. Typically, only two or three subcontractors (pre-approved or requested by the Client Agency) are asked to bid the work.

The ESCO is not required to take the lowest bidder if it is determined to be detrimental to the performance of the project. All sub-contracted work is expected to be competitively bid by the ESCO to assure the ESCO and the Client Agency of a cost-effective installation.

- For negotiation, the ESCO may be allowed to negotiate with specific subcontractors or vendors if it is determined to be beneficial to the project providing that both the client agency and the Energy Program PM agree.
- For self performance, the ESCO may be allowed to self-perform the work if it is determined to be beneficial to the project and both the client agency and the Energy Program PM agree. For work that is self-performed by the ESCO, the project team must agree on whether the construction group will act as a bidder in a selected bidding process or be treated in the same manner as negotiated procurement. If it is through the selected bidding process, it is recommended that the owner or the Energy Program PM receive the bids and the team open the bids as a group.

The ESCO construction contract identifies the acquisition and installation costs associated with the work, overhead and profit margins, bonds and insurance costs, commissioning activities, training for the Client Agencies maintenance personnel, and Washington State Sales Tax.

IX. Notice of Commencement of Energy Cost Savings

When project construction is complete, the ESCO will issue a Notice of Commencement of Energy Cost Savings. This document is the formal written notification to DES and the Client Agency that the ESCO has substantially completed installation of ESCO equipment and/or provided ESCO services. This validates that the equipment or services are now providing sufficient energy savings for the Client Agency to begin making payments, as set forth in the energy services proposal. Acceptance of the Notice of Commencement of Energy Cost Savings by the DES Energy PM and the Client Agency constitutes the date of substantial completion of the project. The Energy Program PM and Client Agency will have inspected the project and accepted it prior to this notice.

The ESCO is confirming that they have inspected the project and that it is complete, that all previously identified “incomplete work items” have been fulfilled, and that the project is providing cost savings sufficient to repay the investment.

X. Invoices

One of the cornerstones of the ESPC program in Washington State is “open book” pricing. Construction costs are defined as “the actual cost of purchasing and installing the ESCO equipment, as demonstrated by the installation price quotes or construction contracts”. This means that the ESCO furnishes all the subcontractor and equipment invoices as backup to the invoices it submits. The ESCO will track project costs by listing subcontractor amounts and equipment quotes as individual lines on the schedule of values (further broken down by project phase if appropriate) on the “APPLICATION AND CERTIFICATE FOR PAYMENT ON CONTRACT” form that accompanies invoice voucher form A-19. It is preferred that subcontractors and equipment purchases over \$10,000 be listed as individual line items on the schedule of values. All contract invoices will be broken down to show all materials and labor costs, even if that contractor is a subsidiary of the ESCO.

If the project is completely financed by the Client Agency through lease purchase or other loan provisions; the ESCO invoice will not be submitted until the project or approved project phase is complete, and the ESCO has submitted the “Notice of Commencement of Energy Cost Savings”. Payments to the ESCO that are dependent on, grants, loans or utility incentive payments will be made within 30 days of the date the Client Agency receives the funds. Payments to the ESCO, which are dependent on funding provided by the Client Agency, may be made by monthly partial payments depending on services provided. The ESCO must meet deadlines for completion and invoicing in order to not delay financing.

XI. Measurement & Verification

The ESCO will enter into an M&V Authorization with the DES Energy Program to provide measurement and verification services as described in the energy services proposal to the Client Agency. M&V services are used to verify that energy or other utility savings are indeed being achieved. The recommended time period for M&V services is three years, with a one-year minimum. The Energy Program PM and the Client Agency may determine that additional M&V is required or beneficial in order to ensure savings continue to accrue, or to meet requirements established under utility reimbursement programs.