

Best Practices in Community Energy Efficiency Programs Facilitating Energy Performance Contracting (EPC) Effectively

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Performance contracts are paid from savings agreements in which an energy services company provides energy audits, designs measure specifications, selects and oversees contractors, arranges the financing, commissions completed installations, monitors the savings and trains maintenance staff and occupants to maintain the savings it guarantees. Performance contracts are commonplace in the MUSH sectors—municipalities, universities, schools and hospitals. It also works well for public housing authorities. Local energy agencies that can serve as owner’s agents (facilitating consultant) for municipalities and others provide a useful service in facilitating performance contracts, and in earning a fee for the service. This paper describes approaches to offering this service to appropriate end users.

Performance contracts are typically familiar to the Local Energy Alliance (LEA) management and staff, but to many procurement officers, facility managers, and legal departments of program participants — including those in public jurisdictions—they will be a new and foreign way of doing business.

For the LEA, an EPC or other form of performance contracting is a tool it can bring to some of its market sectors; but it must be brought with some delicacy. Many potential customers have heard of abuses and complexities that they will want to avoid. Others will be averse to jumping into a major commitment with unfamiliar financial risks. Still others will not want to change procurement practices in a way that seems radical. For example, in one major jurisdiction it has taken six months to go through the process of drafting an RFQ, proving that state law permits EPCs, drafting answers to bidder questions, and getting approval of a contract template. In another major city, the city manager views EPCs as illegal.

Therefore, the LEA should start with a more hands-on partnership like the “Sustainability Partnership” introduced in the Large Commercial and Industrial Paper (App. C). Once the LEA is involved in the customer’s facility and delivering services of proven value, the opportunity for financing capital improvements with private investment can be more readily introduced. These improvements can include the customer’s own priorities (including some deferred maintenance) as well as opportunities discovered by an ESCO. The LEA will be in a position to help identify capital improvements and to be the customer’s trusted agent in facilitating an RFP for performance contracting. All these services can earn revenues for the LEA—and pay for themselves out of savings.

An example of a starting service under a Sustainability Partnership might be the “*Energy Watchperson*” concept, named after the tried-and-true night watchman practice. This concept came out of CESI discussions with many Public Works and other City staff. It became clear in these discussions that—as in

most cities—there is a shortage of staff and budget to maintain and manage municipal and school facilities and the energy- and water-using equipment within them. Yet frequent attention to settings, openings, valves, filters, adjustments, occupancy –related controls, leaks, replacements, switches, and other matters of operation and maintenance (during both occupied and unoccupied hours)—not to mention the simple closing of windows and turning off lights and faucets, etc.—will often have as great an impact on cost and complaints as equipment retrofits, and in any event is crucial to their long-term success.

The “Sustainability Partnership” can include important services that the LEA can deliver with modest staff, to great customer benefit. Some of this attention may be considered “retro-commissioning,” some may be catching up on deferred maintenance, some behavioral coaching and incentives. But once the relationship is established, the customer (be it a city or a hospital or a school) will be ready to trust new ways of bringing private investment into larger capital projects.

During this engagement, the EPC can be introduced. Appendix A is a primer on EPCs that has been found useful in when explaining EPCs to potential participants. Even after the EPC itself is explained, the process for a no-risk energy audit and design may remain unclear. Appendix B is a description of that important process, found in most EPCs.

One of the important services of the LEA is to prepare such contracts in a form that is transparent and fair.¹ Introducing a transparent and fair contract can be done as part of the LEA’s sponsoring of RFPs for EPC contractors (ESCOs, design-build firms). That whole process is essential to many customers, especially in the public sector. Finally, the LEA can then engage an Independent Engineer to review proposals and designs, oversee commissioning, and verify savings.

There are, of course, other forms of contracts that will be useful in situations where special marketing barriers exist:

- Power-purchase Agreements (PPAs), frequently used for renewable-energy installations but adaptable to energy-efficiency improvements
- Energy Outsourcing – e.g., the “MEMBERS” Offer for building owners who want off-balance-sheet financing and would like to be rid of energy management (see Section B.5, App. C)
- Operating leases, also qualifying in some cases for off-balance-sheet financing
- Construction, ownership and operation of cogeneration or renewable-energy plants, selling their outputs as commodities (these can include the energy, waste heat, chilled water, refrigeration, and compressed air)

These are more sophisticated, however, so should be introduced only when the customer is ready to consider such mechanisms and needs a form different from a standard EPC.

¹ A full EPC standard contract has been developed by CESI in cooperation with the legal departments of several jurisdictions, and is available to LEAs on request.

Appendix A. EPC Primer

Energy Performance Contracting (EPC) is a technique that uses cost savings from the installation of energy-efficient facility improvements to repay the approved costs of the improvements over a period of time. For instance, if a building's current annual energy and water costs are \$200,000, and \$300,000 worth of energy efficiency measures (such as lighting, water, refrigerators, and HVAC improvements) are installed that save 25% of that annual cost (\$50,000), the "simple payback" would be 6 years. If the improvements are financed, the time required to repay all costs (including contractor fees) would be greater than six years, depending on the interest rate applied.

Under an EPC, one organization, typically an energy services company ("ESCO") serves as a general design-build contractor, providing energy audit, design and specification, procurement of equipment, arranging financing, construction management, commissioning and documentation of completed work, and a guarantee that savings will exceed debt service payments. Once the efficiency measures are installed, the ESCO provides annual services over the life of the contract, featuring equipment troubleshooting, maintenance staff training, and measurement and verification of savings.

ESCOs typically arrange for project financing through a third party, although some offer financing backed by their own capital. In any case, the debt is a contract between the lender and the customer.

One common form of financing for a municipality engaging in an EPC is a tax-exempt municipal lease, which in many jurisdictions may be considered an "off balance sheet" operational expense.

The term for a typical performance contract depends on the ratio of costs to savings (the "payback period") and the interest rate. More comprehensive improvements lead to longer terms, but in every case the term must be long enough for the savings to exceed debt service (principal + interest). Typical terms are 8 to 15 years and typical interest rates are in the range of a few points above Prime, depending on the underlying credit of the customer.

The municipality may engage an independent engineer—often through the LEA—to oversee the ESCO's work, participate in commissioning, and verify savings.

The ESCO industry has grown steadily for thirty years and includes such well-known companies as Honeywell, Johnson Controls, and Siemens, large independent firms like Ameresco, several of the largest utilities in the country, and forty or so less familiar names. Their largest customers have been the U.S. Defense Department, GSA, and DOE, but they work for hundreds of cities, counties, school districts, universities, hospitals, commercial, industrial and residential clients. The largest ESCO market sector is local government, educational and health facilities. In 2008 the combined revenues of the American ESCO industry were a little over \$3.5 billion, and this is expected to double to over seven billion dollars in 2011. A May 2010 survey of the industry performed by the Lawrence Berkeley Laboratory and funded by the U.S. Department of Energy provides greater detail.

In 2006 the Bush Administration sponsored and won extension of the legislation that encourages government facilities to take advantage of performance contracts to improve public facilities using private capital. The reason is that public funds are limited for such facility upgrades and for catching up

on deferred maintenance. Energy-Saving Performance Contracts can save tax revenues by requiring ESCOs to bring in private capital and take the risk that future savings will repay the debt incurred to finance the improvements.

The name “performance contract” comes from its requirement that the ESCO must prove, to the satisfaction of the customer, that the energy savings it produced exceed the cost of the improvements -- or make up the difference. In other words, this is a way to get new equipment, upgrades, and greater efficiency without net cost to the customer. (The customer can choose to use its own debt to reduce interest cost if it chooses, but in any event the ESCO must make up any shortfall between debt service and proven savings.) Once the customer’s or a third-party’s debt is retired by the savings, those savings continue for the life of the improvements installed.

Over the history of the industry, less than 5% of predicted savings have failed to be realized – and in those few cases the ESCO had to compensate the customer for the difference between actual and guaranteed savings. Since the customer will presumably choose only experienced and respected ESCOs to work in its facilities, the risk will be entirely on their shoulders.

Under a performance contract, every design, procurement, and installation done by the ESCO must be approved in advance by the customer. Also the method used to compute the savings must be pre-approved by customer engineers. The customer will negotiate strict and transparent contracts, and the LEA will help.

The largest improvements made by ESCOs are in heating, cooling, and lighting buildings. Substantial investments are also made in solar and other renewable energy, controls, local generators, insulation, and the building “shell.” All systems that use energy or water are examined by the ESCO, which will do the initial exploration without charge. They will then recommend replacements or improvements that will improve comfort, reliability, and security, while saving enough money to pay for themselves out of the savings. After customer approval of those improvements that it wants—including its own ideas—the ESCO will hire local subcontractors (subject to customer approval) to install the work. They will then offer to enter into a service contract, if the customer wishes, over a term at least as long as the debt repayment.

Appendix B. Energy Auditing Process

1. Energy data & Letter of Interest requested by LEA and completed by Customer
2. ESCO scheduled to complete an initial Energy Audit of the Customer’s facilities
3. ESCO completes the initial Energy Audit of the Customer’s facilities:
 - a. This initial on-site audit is without obligation.
 - b. ESCO develops rough predictions (+/- 20%) of the needed energy upgrades, their costs, lifetimes, and accompanying energy savings these will produce.
 - c. ESCO develops a Letter of Intent for the Customer which includes the recommended energy upgrades and their expense and the savings that will pay for the debt service, and a proposal (with a not-to-exceed budget) to complete designs sufficient to support firm cost estimates and savings guarantees (the “Investment-Grade Audit”).

- d. The Customer can either opt to continue the process and have an Investment Grade Audit completed or decline the ESCO recommendation and end the process at this point (at no cost to the Customer).
 - e. If the Customer opts to proceed with the process, it will sign the Letter of Intent and the ESCO will initiate an Investment Grade Audit.
4. ESCO completes an Investment Grade Audit for the customer:
- a. If the ESCO cannot verify that the guaranteed energy savings and costs are within 20% of the originally proposed energy savings and costs, the Customer can again choose to end the process at this point (at no cost).
 - b. If the ESCO verifies, and offers to guarantee, the predicted energy savings, it then develops the financing package for the Customer that could include Utility and State incentives and any “buy down” of the debt service available from LEA. This package will also include the long-term guarantee and lifetimes of energy savings incorporated with a maintenance contract developed by the ESCO. The cost of the investment grade audit will be rolled into the financing package.
 - c. If the Customer chooses to complete at least two thirds of the ESCO’s recommended improvements, the cost of the investment grade audit will still be rolled into the financing package.
 - d. If the Customer chooses to complete less than two thirds of the ESCO’s recommended improvements, a proportional part of the cost of the investment grade audit will still be charged to the Customer. This will be spelled out in the ESCO’s Letter of Intent (Step 3.c).