Use a Performance Contract for Municipal Efficiency Projects

An energy savings performance contract (ESPC) is a special contracting tool that allows building owners to pay for energy efficiency upgrades out of the energy cost savings guaranteed by the contractor. In Massachusetts, ESPCs are defined as a subset of energy management services (EMS) agreements, which can also include performance-based energy generation projects. MGL Ch. 25A sections 11c and 11i allow public entities to contract for the full range of EMS through a single solicitation process. This eliminates the costs associated with multiple bidding processes, as a single vendor is selected to complete engineering, design, construction, commissioning, and savings measurement and verification.

EMS agreements are often used for "big ticket" asset modernization projects with long paybacks but will typically also address a range of end uses, building systems, and equipment. This guide outlines the process for hiring a qualified energy services company (ESCO), including creating an energy baseline, developing a business case, drafting and issuing a solicitation, selecting a vendor, securing project financing, and implementing the project.

Introduction

What is an ESCO?

The term "ESCO" refers to an energy services company. Most ESCOs do lots of different types of projects in the building energy management, construction, and project management space. Some of them are part of larger manufacturing companies that specialize in building control systems, HVAC equipment, and so forth. Some of them are independent companies that specialize in energy efficiency and renewable energy practices.

What is an ESPC?

When a municipality says they are working with an ESCO, it generally means that they have entered into an energy savings performance contract (ESPC) with an ESCO. This contract states that the ESCO will install a portfolio of energy saving measures (such as control systems, heating system upgrades, and lighting improvements) that are guaranteed to save a save enough energy on an annual basis over the lifetime of the contract (up to 20 years) such that the town can repay

the debt service on the up-front investment, and the project is ultimately cost-neutral. If these guarantees aren't met, the ESCO has to pay the difference to the town. This is why ESCOs tend to be conservative in their estimates of guaranteed savings.

How does an ESPC work?

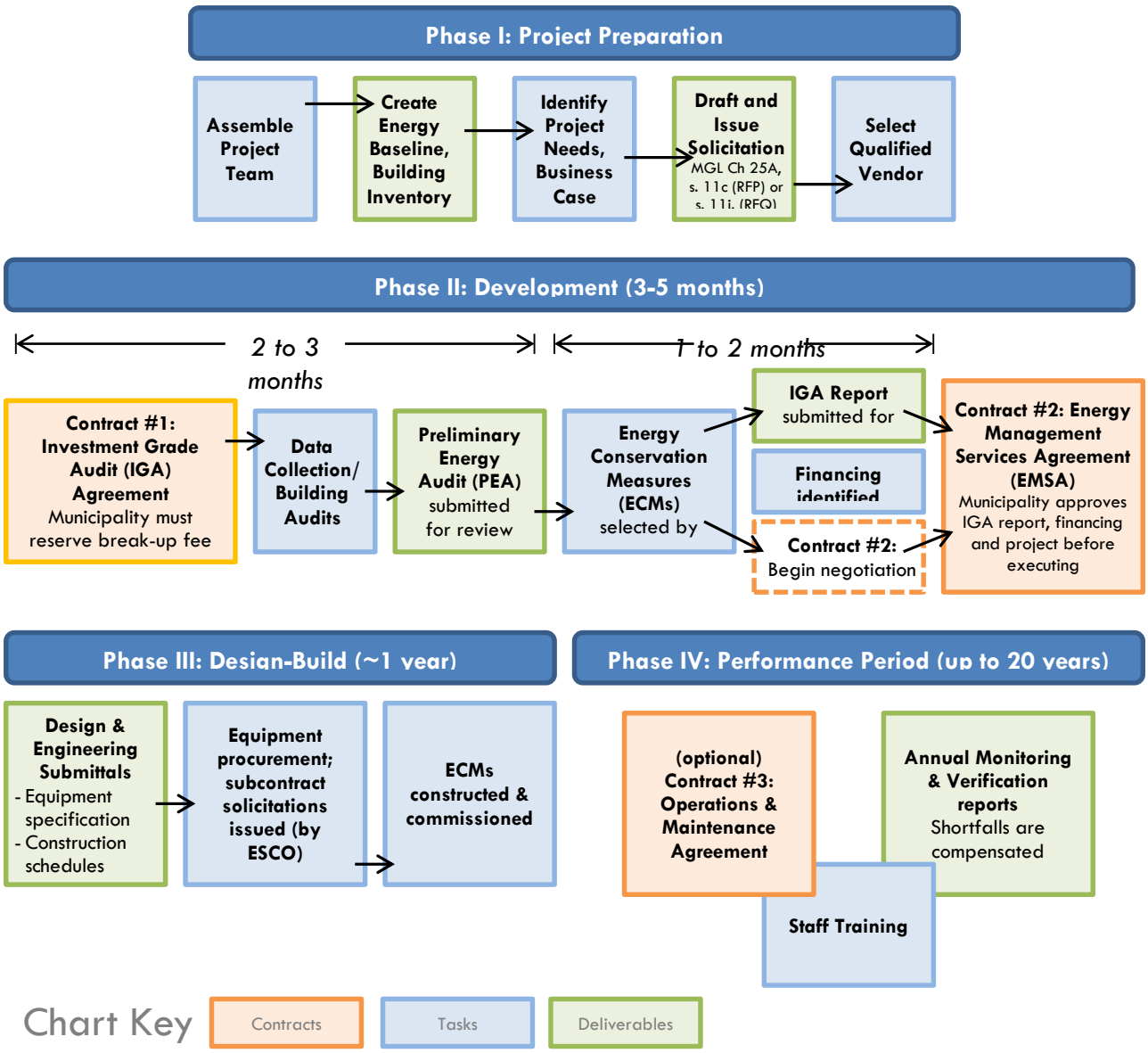
Energy performance contract engagements are phased, beginning with preliminary assessments that determine the range of opportunities with costs and savings for each and followed by detailed investment grade engineering and ultimately project construction. Contracts are also phased, with the contracting parties working through the details of potential projects and coming to agreement about a final scope or potentially disengaging under terms specified in the initial energy audit contract if a construction agreement is not executed.

Here is some important information to keep in mind regarding ESPCs:

- **Energy efficiency is one of many benefits of working with an ESCO through an ESPC.** While saving energy is certainly going to be an outcome, ESPCs can also be a way to finance improvements to buildings, providing a mechanism for asset modernization.
- **ESPCs need to have financing secured upfront.** This financing is then paid off through the performance contract using energy cost savings and other funding (such as utility rebates or grant funds).
- **ESPCs are a great mechanism for municipalities to get started on energy work, but every municipality is different.** Hiring an ESCO may not make sense for municipalities who have already done a significant amount of energy-related improvements in their buildings.
- **MAPC can help municipalities go out to bid for ESCO services in groups.** This process shifts much of the administrative burden associated with procuring ESCOs away from municipalities. Municipalities often benefit from volume pricing, as well.

Process

Completing an ESPC is a significant undertaking, and the process from start to finish could take several years. The information in this guide has been organized using the four phases of the process:


Phase I: Project Preparation
Assemble Project Team
Create Energy Baseline, Building Inventory
Identify Project Needs, Business Case
Draft and Issue Solicitation
MGL Ch 25A, s. 11c (RFP) or s. 11i. (RFQ)
Select Qualified Vendor
Phase II: Development (3-5 months)
2 to 3 months
1 to 2 months
Contract #1: Investment Grade Audit (IGA) Agreement
Municipality must reserve break-up fee
Data Collection/ Building Audits
Preliminary Energy Audit (PEA) submitted for review
Energy Conservation Measures (ECMs) selected by
IGA Report submitted for
Financing identified
Contract #2: Begin negotiation
Contract #2: Energy Management Services Agreement (EMSA)
Municipality approves IGA report, financing and project before executing
Phase III: Design-Build (~1 year)
Design & Engineering Submittals
- Equipment specification
- Construction schedules
Equipment procurement; subcontract solicitations issued (by ESCO)
ECMs constructed & commissioned
Phase IV: Performance Period (up to 20 years)
(optional) Contract #3: Operations & Maintenance Agreement
Annual Monitoring & Verification reports
Shortfalls are compensated
Staff Training
Chart Key
Contracts
Tasks
Deliverables

Phase I: Project Preparation

1. Assemble a project team.

Forming a project team is a critical first step for the planning process to implement an ESPC project. Involving the relevant stakeholders early on in the process can help to avoid miscommunications and surprises further down the line. An ideal project team will consist of a variety of members:

- **Facilities or maintenance staff** who are up to date on past, current, and ongoing improvements
- **Administration/finance staff** to determine whether financing an ESPC project out of the operating budget will be helpful and what the financial capabilities and needs are
- **Procurement staff** to inform the team about procurement mechanisms available (like M.G.L. ch. 25A) when getting ready to release a solicitation
- **Legal staff** to talk through the process of contracting for EMS later on in the process.

Be sure to consider the inclusion of members from other departments (e.g., schools, fire, police, etc.) who may want to be involved in the planning process. Ideally, schools should be included in the ESPC; however, their buildings may already be more up to date than other municipal facilities. It is important to find out the state of school facilities early on.

2. Create an energy baseline and compile a building inventory.

An accurate energy baseline is crucial in determining the amount of savings that could be available in an ESPC. ESCOs will usually conduct their own baseline analyses, but it is beneficial for the municipality to have a picture of current consumption before proceeding further.

- **MassEnergyInsight (MEI)** is a great tool to develop an energy baseline for municipal buildings. A variety of reports relevant to ESPCs can be generated directly from its dashboard. (See the Track Municipal Energy Use with MassEnergyInsight strategy for more information on how to set up an MEI account.)
- **Fact-check all utility accounts**, such as electric and gas, to ensure that the information is up to date. Municipalities often find themselves still being charged for old or closed accounts. Upload other fuel data (heating oil, propane) as necessary.
- **Ensure a complete building inventory** by adding useful information such as square footage, year of construction, completed upgrades/retrofits, and number of occupants, if available.

3. Identify project needs and develop a business case for performance contracting.

In order to establish whether performance contracting is an effective energy- and cost-saving solution for a municipality, a variety of important factors about its current circumstances have to be considered:

- **What is the condition of the energy infrastructure?** – In many municipalities, systems may be functional but out of date. While new technology could seriously improve performance, there may be more pressing capital budget needs. Performance contracting is a way to accelerate the renewal of energy systems and infrastructure, rather than leaving them to compete for resources in the capital improvement planning process.

- **Is there available energy efficiency potential?** – Since energy technology is always changing, there may always be energy efficiency potential available even if the municipality has participated in utility programs in the past. How broadly and how recently it has participated will have an inverse impact on the energy efficiency potential available. Alternatively, if building maintenance and management resources are limited, there is a higher chance of energy efficiency potential being available. **If there is no available energy efficiency potential, performance contracting is probably not a good choice,** since that is the main resource tapped to pay for performance contracts.

- **What, if any, are the municipality's Green Community aspirations and goals?** – If the municipality has committed to a 20% reduction in energy consumption but is unclear about how to implement it within a five-year timeframe, performance contracting may be a good option. If the municipality has started to report to Green Communities and is finding savings to be below projections, performance contracting might be a way to catch up. Finally, if the municipality hasn't become a Green Community, working with an ESCO will fulfill criterion three, the energy reduction plan. (See the Receive Green Communities Designation strategy for more information.)

- **What are the in-house technical capacities and capabilities?** – It is very time-consuming to complete multiple projects in multiple buildings under the conventional Ch. 149 procurement process, and staff may not have the engineering expertise or knowledge about technology advancements. If this is the case, a performance contract may make more sense.

  Keep in mind that commissioning is important but tends to fall out of project budgets. The ESPC process requires ongoing commissioning and verification in order to meet the savings guarantee.

- **What are the other capital improvement funding sources?** – Evaluate whether the municipality's financial rating is good enough to undertake projects of this scale. How much additional debt can be taken on? Is the municipality willing to level-fund utility

budgets up to 20 years? In order for an ESPC to work, the municipality has to commit to using energy savings to pay for the debt service on the performance contract and refrain from reallocating those savings elsewhere.

A key difference to note between the two procurement processes (explained in detail later in this guide) is that for Ch. 25A the municipality is responsible for paying the debt service out of its operating budget and for Ch. 149 the funds are from another source. Under both procurement processes, however, the municipality is responsible for paying the contractor.

Alternative Pathways to Fund Smaller Projects

Engage the utility early to let it know what projects the municipality would like to do and to make sure incentives are taken advantage of. As an alternative to using a performance contract, ch. 25A sec. 14 allows municipalities to contract directly with utility vendors for projects under $100,000 (This does not apply to municipalities with municipal utility service. See additional guidance from the DOER.) The municipality may want to use this pathway if the following conditions apply:

- Grant money or appropriations are available to spend immediately or there is the ability to budget for projects in the next fiscal cycle
- Projects are under $100,000
- Buildings are mostly new and well maintained
- There is staff capacity to oversee projects

4. Consider hiring an owner's agent.

Municipalities should give serious consideration to engaging an independent owner's agent with prior performance contracting experience. While an owner's agent's services may not be necessary if a municipality has the technical capabilities and staff resources available to protect its interests and provide project oversight, independent expert support can help ensure that there is someone knowledgeable sitting on the municipality's side of the table at critical decision points such as finalizing contract language, selecting projects, specifying equipment requirements, confirming proper installation and operation, and verifying savings. The owner's agent's role includes:

- Providing support during contract review
- Reviewing proposed project list and pricing and savings estimates
- Reviewing proposed measurement and verification protocols
- Critiquing design submittals and proposed equipment
- Observing systems commissioning and testing during construction
- Verifying that documentation is complete and that staff receives proper training

5. Draft and issue a solicitation.

Massachusetts General Law chapter 25A, sections 11c and 11i allow public agencies to contract for energy management services (EMS) through a single, streamlined process. This reduces the time and cost associated with multiple bidding processes and allows a single vendor to carry a project from design to construction and guarantee performance through ongoing monitoring and verification services. The intent of M.G.L. ch. 25A procurement guidelines is to acknowledge the unique challenge that energy projects present – that they require a holistic approach to initial energy analysis, measurement selection, installation, and long-term monitoring and verification. (See the Procure Energy Services strategy for more information.)

- **Why consider a ch. 25A procurement?** – 25A EMS projects allow municipalities to reallocate resources from the operations budget to finance up-front improvements to buildings. Obviously, it is cheaper to do projects without financing if a municipality has the up-front resources and capacity to manage them. However, if it lacks technical project management expertise and has limited access to capital, EMS may be a good tool, and will result in projects with guaranteed performance.

- **How is ch. 25A different from ch. 149?** – Both laws apply to public construction projects. ch. 25A (part of the Green Communities Act) provides an expedited procurement pathway for energy management services, an alternative to the procurement process under ch. 149.

  - Ch. 149 contracts are design-bid-build. After a certain dollar threshold, the municipality has to conduct feasibility studies and hire a designer/engineer before getting to the construction process. General contractors/subcontractors also have to be prequalified.

  - Ch. 25A contracts are design-build. There is no dollar threshold; the process is the same regardless of project value. The Department of Energy Resources is the filing agency that regulates 25A procurements.

- **What is the difference between sections 11c and 11i?** – Under 11c, vendors respond to a request for proposals (RFP) for a specific set of pre-identified measures and provide a fixed price for the measures and guaranteed energy savings. Under 11i, vendors respond to a request for qualifications (RFQ), offer a fixed price for energy audits (e.g., cents per square foot), describe their approach and potential energy savings measures they will investigate, and propose markups above installation cost (in percent) for services they will provide.

Green Communities Act of 2008

Since the passage of the Green Communities Act in 2008, there has been explosive growth in the use of energy management services by Massachusetts municipalities. The Green Communities Act included significant changes to M.G.L. ch. 25A RFQ procurement regulations and extended the time frame for energy management service agreements for up to 20 years.

- **Who can respond to ch. 25A RFPs or RFQs?** – Only ESCOs certified by the Massachusetts Division of Capital Asset Management and Maintenance (DCAMM) can submit a response to ch. 25A procurement RFPs or RFQs. The ESCO will coordinate all of the activities of a performance contracting project, including: technical audits, design engineering, equipment installation, construction management, project financing, staff training, equipment maintenance and project monitoring.
- **Is there a process prescribed by ch. 25A, sec. 11i?** – Municipalities must follow five steps to procure energy management services through ch. 25A sec. 11i:
  - Develop ESCO RFQ
  - Publish RFQ and select vendor
  - Negotiate and sign energy audit agreement
  - Negotiate and sign energy management service agreement
  - Maintain equipment and monitor and report energy performance
- **Are utility incentives still available under performance contracting?** – Municipalities can work with an ESCO and leverage utility programs at the same time. Utility incentives are effectively applied to "buy down" the cost of an ESCO project. In other words, energy savings don't have to cover the entire cost of the project. Utility rebates, grant funds, and additional resources can cover additional improvements outside of the guaranteed energy savings.
- **What are the eligibility criteria for projects under ch. 25A?** – Any project for which energy savings can be quantified and guaranteed is eligible under ch. 25A. The solicitation must include two years of energy use data, a building inventory, and likely projects. See the DOER's website for sample RFQs.

6. Select a qualified vendor.

Selecting a vendor can be an overwhelming exercise. Read all of the responses as if they were blind proposals, and note both the similarities and dissimilarities between proposals to build up understanding of the core services that most ESCOs offer and how they are unique. Take

into account the following specific considerations while preparing to review responses to an EMS solicitation:

- **Proposed measures** – Do the measures proposed make sense for the municipality?
- **Proposed services** – ESCOs provide a number of important services as part of a successful energy project. Think about which services are most important for the municipality and which ESCOs sound like they meet its specific needs. The major categories include energy analysis, financing, bids and specifications, construction management, monitoring and verification, guaranteed savings, and maintenance. For each of these services, does the municipality want or need extra services or extra creativity? Does it want a company that will be as aggressive as possible or a company that will be as conservative as possible?
- **Proposed staffing** – Does the vendor propose to include project staff with the right mix of training, skills, and experience?
- **Access and capacity** – Will the vendor be readily accessible during all phases of work? Does the vendor appear to have adequate capacity to deliver the proposed services for the municipality and any other ESCO RFQ participants?
- **Recent experiences and references** – Do the ESCO's recent experiences and references included in the RFQ proposals align well with the municipality and its facilities? Do they inspire confidence about the ESCO's capabilities?
- **Pricing and terms** – Examine the proposed pricing by category. First look at the audit pricing per square foot. Consider the overheads and profit margins. Look at the differences in the markups for different technologies. How do the proposed pricing levels by the ESCOs compare? Are the generic terms included in the RFQ response acceptable?

The above considerations should help narrow down the top-ranked proposals for the municipality. At this point, it is good practice to ask top-ranked vendors the following questions through a final interview process:

- Who exactly will be on the core team?
- Please describe your past experiences working with other, similar municipalities in New England with similar issues, such as old and historic buildings.
- Energy management systems will be an important measure that you will probably recommend. Explain your energy management systems philosophy for city-wide installations. Central or stand alone? Integrate with existing or replace with new? All buildings or just large buildings? Describe the level of programming you intend to do: simple on/off or more complex? All equipment or just some equipment?

- What has been your past experience working with an owner's agent?
- What strategies will you use to keep the core price down? Are the interpretations we have made of your soft cost markups accurate?
- Please describe the process for applying certain soft cost markups. Are markups such as site conditions and hazardous waste removal always applied or applied only on a case-by-case, project-by-project basis?
- What support does your company provide for project financing? Describe your ability to research grants and rebates.
- Provide two examples of projects where something has gone wrong and what you did to address it.

Phase II: Development (Contracts, Audits, and Financing)

7. Review the preliminary energy assessment (PEA).

Once a vendor has been selected and an agreement has been signed, it is time to review the preliminary energy assessment (PEA). A PEA is a quick evaluation, typically completed within a day, to determine the energy reduction potential of a particular project or building. Estimates in a PEA do not tend to be highly accurate, but provide insight into the types of projects that could result in favorable paybacks. The main purpose of reviewing PEAs is to identify projects that warrant a deeper study and a more comprehensive audit.

8. Review the investment grade audit (IGA) and finalize projects for the ESPC.

The ESCO will need written approval in the form of a contract to complete an investment-grade audit of assets that the municipality is considering including in the performance contract. The first contract that the municipality therefore has to sign is for an investment grade audit (IGA). The IGA agreement specifies the fee (usually 4-10 cents per square foot audited) that the municipality must pay the ESCO if it elects not to proceed with construction with the ESCO. The municipality will need to follow established municipal approval and payment procedures to ensure that the potential audit fee is properly obligated and reserved before signing the IGA agreement. The municipality will then evaluate the IGA to ascertain which measures to move forward with.

For streetlight retrofit projects, the IGA may include performance of a streetlight inventory audit. See Retrofit Streetlights with LEDs strategy for discussion of the streetlight inventory audit. If the IGA includes the streetlight inventory audit, than the IGA should also include a commitment from the ESCO to reconcile any billing discrepancies with the utility. Additionally, the IGA should includes an analysis of the economics (cost, savings, and payback) and energy savings between various brands of streetlights. The IGA should also include piloting fixtures at representative test sites for evaluation of color temperature, color

rating index, and lumen levels. The analysis and pilots should allow the municaplity to select the brand of light to be used.

9. Secure Financing

Performance contracting is a way to reinvest current energy dollars from operating budgets back into the building, in a creative way that blends projects with short and long payback times and is fuel-blind (e.g., lighting savings pay for heating upgrades). The borrowing is effectively backstopped by the ESCO guarantee rather than additional tax revenues. A crucial piece to keep in mind about performance contracting is that financing is necessary to pay for the projects. ESCOs need to be paid just like any other general contractor that a municipality may hire. Municipalities should either borrow or look for alternative funds to pay for their design, construction, project management, training, and commissioning services. Fortunately, there are a variety of ways to fund performance contracts.

- **Bonding** – A municipality can make use of general obligation bonds to pay for a performance contract. G.O. bonds are typically issued once or twice annually by most municipalities. However, there are high administrative costs associated with issuing a G.O. bond, like holding a public offering. It is therefore advisable to be familiar with any regularly scheduled bond issues that may be coming up so that performance contracting projects can be included with them. This way, there aren't any increases in administrative costs.

- **Municipal lease financing** – A tax-exempt municipal lease (also known as a lease-purchase agreement) is a mechanism that allows municipal entities to acquire energy assets (lights, insulation, boilers, chillers, pipes, etc.) without having to issue a G.O. bond. The security for the lease is the equipment itself, rather than the obligation of the municipality. Municipal lease financing can be an attractive option because a rating or a public offering document is not necessary to obtain a lease. Municipalities can also receive a low, fixed interest rate that can be locked in 6-9 months prior to the expected project start.

- **Utility incentives and grants** – Check the utility provider's website for information on any incentive or grant programs that they may currently be running. Funding from utility programs is be used in conjunction with a performance contract to bring down any up-front costs.

- **Qualified Energy Conservation Bonds (QECBs)** – QECBs are qualified tax credit bonds that may be used by state and local governments to finance certain types of energy projects. QECBs are a very attractive tool for municipalities to finance energy projects, because the borrower must only pay back the principal of the bond, while the bondholder receives federal tax credits in lieu of the traditional bond interest. QECBs can be used towards qualified conservation purchases, such as:

- **Energy efficiency upgrades** – This requires a plan for 20% energy reduction in the municipality. An energy audit is sufficient, and a performance contract is a great way to reach the goal.
- **Renewable energy production** – This includes solar PV, wind turbines, etc.
- **Implementing Green Communities programs** – This could include streetlighting projects or any energy project that isn't tied to a building.

QECB Case Study: Belchertown, MA

In 2011, the Town of Belchertown, MA was issued a QECB worth around $3.1 million for energy efficiency work. This amount was arrived at after the town reduced the project cost through other sources. Belchertown opted to receive quarterly direct payment subsidies that resulted in a lower net interest rate.

Common questions asked about financing ESCOs include:

- **Do the ESCOs finance these projects?** – Participating municipalities must be able to finance and pay for the performance contract. Securing access to financing is a critical component of the overall process. Most, if not all, ESCOs understand the financial options available to public entities and many have pre-established relationships with financing firms that specialize in energy performance contracts.
- **Who gets the utility rebates?** – Utility rebates and incentives are passed on to the city.
- **Who gets the savings in excess of the guaranteed savings?** – Savings in excess of the guarantee should be passed on to the city. This is something that should be negotiated during the contracting stage.

Phase III: Design-Build

10. Implement the ESPC.

After financing has been secured for the projects identified through the IGA, it is time to enter into the second contract, an energy services agreement (ESA). An ESA authorizes the ESCO to begin the design and construction process for a locally approved set of energy efficiency measures described in the municipality-specific IGA. This agreement is the heart of the performance contracting process. It includes savings guarantees from the ESCO, methodologies for measurement and verification of savings, owner and ESCO obligations for building and equipment operations and maintenance, and procedures for sign-offs on measure completion, among other provisions.

To execute an ESA, the municipality must have secured the capital funds needed to pay for the equipment and related services. Different ESCOs have different payment procedures, but generally the ESCO will prefer that the municipality makes incremental progress payments to

the ESCO during construction, with final payment due after the measures are commissioned and when they begin to get useful benefits from the installation(s). The municipality will need to follow established municipal approval and payment procedures to ensure that vendor payments will be properly obligated before it can sign an energy services agreement.

It is important to remember that ESAs are expensive, long-term agreements that should be considered carefully and entered into with all due diligence. Contracts for the most recent 15 ESPCs recorded by MA DOER ranged from $0.1 million to $39 million, with a median cost of about $10 million. The term of guaranteed savings contracts ranged from 5 years to 20 years, with a median of about 15 years.

Phase IV: Performance Period

On-going considerations to keep in mind after installation include:

- **Equipment maintenance** – Regular operations and maintenance (O&M) work is a requirement for an ESA and is typically the municipality's responsibility. The ESCO will specify the procedures required for O&M in the contract and will sometimes offer a maintenance services agreement to the municipality, as well. If the municipality elects not to use an ESCO maintenance agreement, they can either do O&M using internal capacity or set up a different bid process to procure the services. In either scenario, the ESCO can cancel the ESA if O&M isn't in accordance with their stipulations.

- **Changes in building use or energy patterns** – As part of their services, the ESCO usually comes up with a baseline algorithm for each building based on hours of occupancy, set points, etc. If there are changes in building use or altered energy consumption patterns, the municipality should work with the ESCO to adjust the baseline accordingly to accurately reflect the savings.

Resources

- "Energy Management Services." Massachusetts Executive Office of Energy and Environmental Affairs. (2013) http://www.mass.gov/eea/energy-utilities-clean-tech/green-communities/ems.html

- "Guidance on Application of Section 44 of the Green Communities Act of 2008." Massachusetts Department of Energy Resources. (2009) http://www.mass.gov/eea/docs/doer/green-communities/pubs-reports/contract-guidance.pdf

- "Request for Qualifications for Energy Management Services." Massachusetts Department of Energy Resources. http://www.mass.gov/eea/docs/doer/green-communities/ems/model-rfq.pdf