

New Hampshire Municipal Energy Efficiency Program

Implementation Roadmap

Prepared by

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for

The New Hampshire Office of Energy and Planning

Energy Technical Assistance & Planning
For New Hampshire Communities

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Section 1: Introduction

Energy Technical Assistance and Planning for New Hampshire Communities (ETAP) is a two-year, \$2 million dollar stimulus-funded program, managed by CLF Ventures, Inc., to help municipalities identify and implement energy efficiency (EE) improvements in public buildings and facilities throughout New Hampshire. Through scoping audits and detailed building evaluations, the ETAP program has identified over \$10.1 million of prospective EE improvements in over 300 municipal and county buildings across the state. The identified projects range greatly in size, from \$3,000 to \$1.2 million.

Through ETAP, CLF Ventures is also working with the New Hampshire Office of Energy and Planning (NHOEP) to help the state continue to pursue its objectives of reducing energy use in New Hampshire even after stimulus funding has ended. To this end, ETAP has created a database of EE measures identified by the program to allow the state to aggregate similar projects or group adjacent town projects together to attract energy service companies (ESCOs) and to track the progress of project completion. ETAP has also drawn on the financing expertise of CLF Ventures to research and develop innovative ways to finance the municipal EE opportunities identified by ETAP. This report explores those financing options and recommends how NHOEP might structure and finance EE technical assistance to New Hampshire municipalities once the ETAP program has ended.

NHOEP has expressed an interest in developing a self-sustaining program to coordinate and facilitate financing and implementation of municipal EE projects across the state. There are many ways such a program could be structured, but each would require sources of up-front capital and attendant financing mechanisms to enable municipalities to pay for EE improvements out of energy savings, often without the need to raise funds or use their balance sheets for these purposes, as well as a means of centralized project coordination to assist municipalities in undertaking such improvements and to ensure quality control. Because many of the ETAP-identified municipal EE opportunities are relatively small, mechanisms that can provide geographic, project, and/or financial aggregation will also help to maximize EE project financing and implementation.

Section 2 below describes how the research presented in this report was developed. Section 3 of this report explores potential financing mechanisms that could be used to fund the ETAP-identified EE projects, as well as additional opportunities that have not yet been identified, building on information and recommendations presented in the recent *Independent Study of Energy Policy Issues* produced by the Vermont Energy Investment Corporation. The goals of Section 3 are to:

- Identify potential EE financing mechanisms that NHOEP could realistically consider and discuss potential advantages and disadvantages of each for the New Hampshire setting;
- Review additional options that CLF Ventures feels would not be appropriate for New Hampshire; and
- Outline a model that could be further developed into a roadmap for financing and delivering EE improvements in municipal buildings across the state.

Sections 4 and 5 provide a “roadmap” to guide NHOEP in facilitating the statewide implementation of municipal EE projects. We recommend that the roadmap can be most effectively navigated by using seed funds to hire an Energy Efficiency Coordinator, a position that will eventually become self-funded through the recovery of project fees. The details of this program are provided below.

Section 2: Report Methodology

After reviewing the EE-related analysis and recommendations presented in the September 2011 VEIC report to the New Hampshire Public Utilities Commission (*Independent Study of Energy Policy Issues*), we conducted extensive secondary research of white papers and industry analyses focused on EE financing and delivery mechanisms. Our research explored both proven and emerging EE financing and aggregation models primarily in the MUSH (municipal, university, school, and hospital) market, but also in the residential and commercial/industrial sectors.

As part of our research, we consulted with organizations and individuals in New Hampshire and Massachusetts that have had experience funding and implementing municipal EE projects. A complete list of interviewees is presented in Appendix A.

We have also created an initial matrix of EE entities, capital sources, and financing, aggregation, and coordination mechanisms to facilitate tracking and evaluation of the various entities that could potentially be involved in the municipal EE roadmap that we propose (See Appendix B).

Section 3: Municipal Energy Efficiency Financing and Aggregation Mechanisms

Recommended Municipal Energy Efficiency Financing and Aggregation Mechanisms

The following capital sources and financing mechanisms have been used to fund state and/or municipal EE projects in New Hampshire and could be further expanded in the state, or have been used to fund such projects in other states and could be considered in the New Hampshire setting.

Federal and state funding streams

The predominant funding source for EE projects in the last four years has been federal stimulus funding from the American Rebuilding and Reinvestment Act of 2009. ARRA programs that have been used to fund municipal EE projects include the U.S. Department of Energy (DOE) Energy Efficiency and Conservation Block Grant (EECBG) program, which has provided \$8.6 million to New Hampshire municipalities in the form of sub-grants and technical assistance, the State Energy Program (SEP), and Better Buildings. DOE also provided funding to New Hampshire utilities through Smart Metering grants, and USDA provided long-term secured borrowing from the Federal Cooperative Finance Corporation (USDA Rural Utilities Service affiliate) to the New Hampshire Electric Cooperative. In addition, proceeds from New Hampshire's participation in the Regional Greenhouse Gas Initiative have been used to capitalize both public- and utility-administered revolving loan funds¹ to finance New Hampshire municipal EE projects, and have also been awarded directly to municipalities.

While federal and state funding has been instrumental in moving municipal EE projects forward in New Hampshire, these sources may not be viable long-term solutions. ARRA funding – intended as a one-time stimulus investment – has expired, leaving a program like EECBG with no long-term funding source. At the same time, the future availability of funds from the Regional Greenhouse Gas Initiative (RGGI) for New Hampshire municipal EE projects is uncertain, due to recent questions regarding New Hampshire's future participation in RGGI.

¹ RGGI-funded municipal EE finance programs in New Hampshire include the CDFA-administered Municipal Energy Reduction Fund, as well as three utility programs offered by PSNH, Unil, and National Grid.

Bonds

New Hampshire towns and cities can issue long-term municipal bonds to pay for EE improvements. The New Hampshire Municipal Finance Act limits outstanding net debt by cities, towns, and school districts to specified percentages of their tax valuations. While financing for energy production and certain other utility expenses are excluded from these limits, it appears that financing for energy savings improvements is not. Issuance must have a defined public purpose, such as purchase of equipment or public works. Bonds may not be issued for operating expenses and are subject to voter supermajority approval at town, school district, or town council meetings.

Twice a year, the New Hampshire Municipal Bond Bank (MBB) purchases municipal bonds from New Hampshire cities, towns, and school and fire districts in varying amounts (as small as \$30,000, but usually much larger) by issuing its own bonds in the public municipal bond markets. MBB has issued \$2.4b in such bonds, of which \$683m are currently outstanding. This arrangement allows all municipalities, large and small, financially weak or strong, to access MBB's "A" bond rating and the lower interest costs that go with it. However, the transaction costs to municipalities of seeking MBB financing are relatively high and administratively complicated, as municipalities must provide audited statements and opinion of bond counsel and pay application fees and a pro-rated share of the MBB's bond issuance costs. In addition, municipalities must obtain town meeting supermajority votes approving the town bonds proffered to MBB. The MBB director has informed CLF Ventures that she sees no problem in buying qualifying bonds from towns to fund EE improvements.

Utility-run municipal energy efficiency programs

Utility programs include those run by the investor-owned utilities (IOUs) and the New Hampshire Electric Coop (Coop). Utility programs leverage utility expertise and billing infrastructure, which can allow for on-bill financing. Also, because utilities serve a customer base, they are a natural fit as a project aggregator and have easy access to reliable funding sources that they can use for short-term project financing. On the other hand, these programs are actively changing and in the future may not be available, or may not be available in a format that will be useful to implement municipal EE projects. Ultimately, utility programs provide incentives for specific equipment and improvements; they will therefore likely be most useful for projects that can take advantage of the existing project funding for specific project types, such as lighting upgrades.

Loans

Loans are another source of EE project funding for municipalities. These could come in the form of direct private bank loans, or revolving loans programs through utilities or entities such as the New Hampshire Community Development Finance Authority (CDFA). While CDFA's Municipal Energy Reduction Fund has been successful in that it is almost fully subscribed, our interviews with CDFA confirmed that the organization had initial problems getting subscribers due to the requirement that the loans go through town meeting supermajority approval processes. This approval process slowed down initial adoption of CDFA's program and could hamper the expeditious initiation of projects using CDFA loan funding.

Municipal operating leases

Tax-free municipal operating leases of both EE equipment and infrastructure improvements are very common financing mechanisms for state and municipal EE improvement projects nationwide. The principal attraction of such leases is that their payment obligations can be included in a municipality's annual operating budget, which usually requires simple majority votes by town meetings and town councils (or state legislatures), as opposed to the supermajority needed for the approval of bonds or loans. Transaction costs for creating and funding such leases are also generally less expensive than executing a bond or note issue or a bank loan. Moreover, since lease payments are tax free, the interest cost of a municipal lease is usually only slightly higher than for a municipal bond. Municipal operating leases are usually structured like installment sales, with the municipality taking title to the improvements at the outset, subject to a recorded security interest in favor of the lessor

triggered only in the event of a default. To qualify as an operating lease, annual payments must be subject to annual appropriation by the lessee's legislative authority. Failure to appropriate, non-payment and, frequently, negative changes in bond ratings are typical events of default. While municipal operating leases are not considered debt, rating agencies will include payment obligations in their debt service calculations for rating purposes.

Under the New Hampshire Municipal Finance Act, municipalities may enter into leases of equipment, "as required by the municipality." Lease-purchases, sale and leasebacks, installment sales, and "other similar agreements to acquire use or ownership of such equipment as is from time to time required by the municipality" are considered to be leases. It would thus appear that a municipality could use municipal operating leases to finance purchase and installation of EE improvements that consist of equipment, such as HVAC systems, boilers, lighting, and controls. However, building envelope improvements, such as air sealing or insulation, may not be as financeable. Depending on the relative costs of the elements of an improvement project, it might be possible to finance the equipment elements using municipal operating leases and the envelope elements through other sources. Municipal leases may be structured as operating leases with non-appropriation clauses, with annual appropriations being approved by a "simple majority vote of the legislative body" and not treated as debt.

CLF Ventures and NHOEP have both sought to clarify state rules around municipal leases, but have not received firm guidance to date. The issue of which types of EE projects may be leasable therefore remains unresolved, and the option to use leases as an EE financing mechanism may not be feasible.

Energy performance contracts

Energy performance contracts (EPCs) are popular mechanisms that have been used nationwide to deliver EE improvements to municipalities. EPCs are typically delivered by an energy services company (ESCO), which identifies, constructs, and maintains energy savings improvements at no up-front cost to the municipality (other than the obligations undertaken to finance their cost) and guarantees the energy savings, which must be sufficient to pay for the EE improvements, interest, and ESCO fees. ESCOs are profit-seeking private companies, so their fees can be high. For this reason traditional ESCOs focus on EE projects that provide significant energy savings. Where the savings exceed such fees and debt service/lease costs, the municipality keeps the benefits. When the financing obligations have been satisfied, all savings accrue to the municipality for the remaining life of the EE improvements.

EPCs are typically financed through a combination of sources, including utility incentives and rebates, private/public/utility loans, leases, bonds, tax equity, or public grants. Because the municipality pays back the financing out of the energy savings, it incurs no additional net annual operating or capital cost. If the financing is structured as a tax-free municipal operating lease, the municipality can account for the improvements and payment as an item in the energy portion of its annual operating budget, rather than as a capital budget expense. Some ESCOs will arrange for debt or lease financing, if the municipality opts not to bond or lease the improvements on its own.

The ESCO brings the technical capacity to assess improvements and energy savings to the municipality, as well as the ability to construct and install them at competitive costs and to maintain them or train municipal staff to do so, all capacities which municipalities, particularly smaller ones, may not have. Because they guarantee the savings, ESCOs have a strong interest in making sure the improvements are high quality. However, there are two significant limitations to engaging ESCOs through performance contracting: most ESCOs are interested only in improvements costing over \$500,000, and EPCs are highly complex technically and legally.

Under New Hampshire law, both the state and municipalities may enter into EPCs for up to 20-year terms, and are subject to annual appropriation and termination if there is no appropriation. State law also requires that repayments be limited to the extent of the guaranteed energy savings over the life of the contract and are interest free and that title to any system financed goes to the contracting agency at the end of the contract.

Not Recommended Municipal Energy Efficiency Financing/Aggregation Mechanisms

The following financing mechanisms have been adopted or proposed outside of New Hampshire, but CLF Ventures does not recommend pursuing these options for New Hampshire municipal EE projects:

Create new Energy Efficiency/Renewable Energy Utility or other quasi-state agency with bonding authority

Delaware created an entity called a sustainable energy utility that assumed responsibility and authority for implementing all energy programs in the state. Other states are now following this example with similar models. There are many existing entities in the state that have specific bonding authority and access to different funding sources that can be used to implement EE projects. While we recommend increased coordination among these groups, we do not suggest creating a new entity that would take over these various programs, as was done in Delaware. That new entity was created to manage all renewable energy and EE funding and programs. NHOEP is addressing a more targeted need to facilitate municipal EE projects, and this can be accomplished without the substantial restructuring required for a new quasi-state agency.

Energy Services Agreement (ESA) or Managed ESA

Energy services agreements require the creation of a special purpose entity for each project, which manages invested funds and administers an agreement that is similar to a power purchase agreement. The concept is relatively new and primarily used for large commercial and industrial (C&I) efficiency projects. We do not recommend ESAs or Managed ESAs for municipal projects in New Hampshire because of their complexity and their primary use as a C&I tool for larger projects.

New market tax credits

New market tax credits are not specific to EE projects, and the process of using them in a development project is highly complex. In addition, to be eligible for the credits, projects must be located in economically challenged communities and must meet criteria for community benefits and job creation. While many EE projects may meet these criteria and create these benefits, the financial complexity of involving investors who can use the tax credits could hinder the implementation of municipal EE projects, particularly those of medium or small size.

Section 4: Statewide Municipal Energy Efficiency Project Implementation

Based on our research into various funding options and mechanisms for financial and project aggregation, CLF Ventures has developed two alternative funding models. We used the following criteria and preferences:

- Avoid overreliance on unsustainable federal or state sources of capital, including RGGI;
- Minimize the need for legislative change;
- Use existing, New Hampshire-based long-term funding sources;
- Use existing entities capable of project aggregation;
- Increase coordination of existing programs and funding sources rather than create new programs; and
- Centralize coordination of EE project aggregation to enhance implementation of municipal EE improvements as well as project quality control.

Using these criteria, we have identified two prospective program models for further exploration: one for EPC-type projects and project aggregations and one for non-EPC projects and project aggregations. The primary distinction between the two models is the presence or absence of ESCO-guaranteed energy performance contracting as the mechanism to enable financing. EPCs are an established means for paying back the capital costs of EE projects and are a preferred option, because the cost of the improvements can be paid back over time using the cost savings that result from the project work. However, EPCs are often not a viable option for smaller, low-cost projects.

Based on our research, we recommend developing an EPC-based model for batches of aggregated ETAP-identified projects and a non-EPC model for the remaining smaller and non-aggregated projects. As new municipal EE projects are identified, they will need to be evaluated, and we recommend this be done by a new Energy Efficiency Coordinator position (described below) to determine which model they should follow.

Option 1: ESCO-Guaranteed EPCs for Aggregated Projects

An EPC allows a municipality to pay back the cost of the work from the energy savings, but the model still requires a funding source, funding structure, and project aggregator/coordinator. CLF Ventures examined different options in these three areas to develop a roadmap for financing and implementing larger municipal EE projects.

Possible sources of funding include:

- The New Hampshire MBB, which buys individual municipal bonds (and, potentially, municipal operating leases) by issuing its own, larger bonds;
- New Hampshire CDFA, through the existing Municipal Energy Reduction revolving loan fund (which will require recapitalization, either with additional RGGI funds or through other sources);
- Private banks, such as Bank of America, which has demonstrated a willingness to support EE leasing structures.

Possible funding structures include:

- Bonds, whether individual municipal bonds, qualified energy conservation bonds (QEGBs), or an aggregation of municipal bonds via the MBB;
- Municipal operating leases, assuming 1) clarification from the NH Legislature on whether municipalities can enter into such leases expressly for all EE improvements, and 2) that long-term funders (such as MBB or the New Hampshire Electric Coop) can become comfortable with buying such obligations as part of their standard funding programs; and
- Loans, either issued by private banks directly to municipalities, obtained by an ESCO on behalf of a municipal EE project, or through a revolving loan program, such as CDFA's Municipal Energy Reduction Fund.

Possible aggregation and coordination entities include:

- A new Energy Efficiency Coordinator Position, self-funded (through a fee that could be rolled into the project financing), which could act as a liaison to individual municipalities, manage the RFP process for an aggregated group of projects, and potentially manage a new PPESCO program.
- CDFA, which could hire an Energy Efficiency Coordinator to coordinate and aggregate small EE projects and use its access to RGGI money to bundle large and small project finance obligations for resale to a long-term funding entity, such as the MBB;

- The New Hampshire Electric Coop, which could aggregate and coordinate projects in its service territory and similarly bundle them for the MBB or fund them using federal sources to which it has access;
- The investor-owned utilities, which could similarly aggregate and coordinate projects in their service territories using system benefit charge (SBC) funds to cover the cost of their efforts, and then bundle these projects for the MBB or fund them using SBC or RGGI funds;
- ESCOs (potentially including a public-purpose ESCO, or PPESCO), which may be willing to aggregate some of the larger and/or geographically proximate EE improvement projects;
- New Hampshire Regional Planning Commissions (RPCs), which could provide aggregation and coordination functions either individually, or in conjunction with some of the other aggregation/coordination entities listed here.

CLF Ventures ascertained the capacity and willingness of the entities described above to provide the funding and to undertake the funding mechanisms, project aggregation activities, and small-project finance bundling concepts we have suggested. Based on our outreach and research, it is clear the CDFA, Coop, IOUs, and RPCs do not currently have the resources to coordinate and aggregate municipal EE projects. Rather than look to one of those entities to take on this new responsibility, we recommend that NHOEP hire a third-party Energy Efficiency Coordinator to implement a municipal EE program. A roadmap for this process is provided in Section 5 below.

Option 2: Non-EPC Projects

Some projects may be too small for energy performance contracts to be economical, even in aggregation. Based on our research, projects that generate less than \$100,000 in energy savings will likely not be financially attractive to ESCOs. In addition, such projects often do not make economic sense for municipalities, as the ESCO contracting and administrative costs involved would be high relative to a municipality engaging in a direct negotiation with a local contractor/supplier for a small improvement – although aggregated bundles of some of the projects may work for the EPC model.

These small projects would benefit from technical assistance provided by a state-level EE coordinator or a coordinator with technical expertise in energy efficiency who is housed elsewhere but working on behalf of the state. This person or organization will advise municipalities on how to work with their local lenders and contractors to perform the work, and will facilitate and coordinate the initial interactions between these various stakeholders.

Possible non-EPC project funding sources could include:

- Local banks with relationships with towns;
- CDFA;
- MBB; and
- Utilities, including investor-owned utilities and the New Hampshire Electric Coop. Investor-owned utilities could provide funding via the system benefit charge and potentially RGGI money, while the Coop could also use federal coop funds.

Energy Efficiency Coordinator Position

Based on our research, we recommend creating an Energy Efficiency Coordinator (EEC) position to coordinate the financing and implementation of EE projects for NH municipalities. The EEC position is critical to the successful coordination of municipal EE technical assistance under either proposed program model because the EEC will implement the roadmap and drive municipal EE project implementation. Our recommendations are based on interviews with people who are actively involved with municipal EE project work and research into

how other states have implemented municipal EE project aggregation. Detailed interview and research notes can be found in Appendix C.

Below, we describe the EEC position, including an outline of a job description for hiring purposes and a draft work plan, with budget, to inform funding requirements. The position will require an initial injection of seed money, from a grant or other source that does not require payback, and has a goal of being self-funded by the fourth year of operation. The program will generate revenue from fees charged as a percentage of the EE project costs. For the purpose of this document, we assume a fee of 3% of project costs for traditional ESCO projects and a fee of 40% of project costs when the EEC provides the type of services that would otherwise be provided by a traditional ESCO. OEP and the EEC can adjust the percentage as necessary and appropriate to address program needs. These fees will be added to the total financed project cost, which in turn will be repaid through energy savings.

While there are options for where this position can be housed and the required skill set of the person who will staff it, we recommend the state staff the EEC position by hiring an outside consultant who possesses sufficient technical expertise to write and administer an ESCO RFQ process, as well as the knowledge necessary to serve as an owner's rep to the towns that participate in ESCO projects. We further recommend that the state strongly consider hiring an EEC with the expertise necessary to coordinate and implement a pilot Public Purpose ESCO (PPESCO) program to provide ESCO-type services to municipalities with smaller projects. To our knowledge, there are no operating PPESCOs at this time, but the Vermont Energy Investment Corporation (VEIC) has developed a model and is actively seeking pilot opportunities. The PPESCO model, described in more detail below, has been conceived to provide ESCO-type services to EE projects that are typically underserved by for-profit ESCOs. The PPESCO model may add significant value to New Hampshire municipal EE efforts.

This process of writing a RFP for the EEC position and hiring will take several months and should be started as soon as possible. The RFP should require specific technical and financing expertise – including good understanding of ESCO and PPESCO models – and should list the following responsibilities:

EE Coordinator Responsibilities/Required Expertise (job description)

- Serve as liaison to all New Hampshire communities and as a clearinghouse of EE information: financing, implementation, contracting, etc.
- Facilitate a standard ESCO RFQ process.
 - Write ESCO RFQs.
 - Select winning ESCOs.
- Once ESCO is selected, provide initial coordination between town, owner's agent, ESCO, financial partner.
- Serve as owner's representative for participating towns, or advise towns on hiring independent owner's representatives.
- Help identify and secure project financing from available sources, including:
 - Municipal bonds;
 - Municipal leases;
 - Other sources (e.g., private bank loans).
- Provide technical assistance for non-EPC, non-ESCO projects regarding funding sources and how to contract with companies that will perform the work.
- Respond to requests for assistance from municipalities.
- Market energy efficiency to other municipalities that have not yet sought assistance or participated in an ESCO project bundle (maintain project pipeline sufficient to fund/partially fund the EEC position).

- Establish a pilot PPESCO for New Hampshire municipalities.
 - Set up the PPESCO entity.
 - Market PPESCO services to towns that cannot participate in any phase of the traditional ESCO work.
 - Secure a bundle of appropriate projects for a pilot program.
 - Implement the PPESCO.
 - Monitor program and adjust as necessary to create a long-term, self-funded energy efficiency project program.

ESCO Project Coordination/Facilitation

The high priority initial task for the EEC will be to aggregate bundles of already identified projects into packages that can be bid on by ESCOs. The EEC will work with communities to bundle projects into packages that will provide at least several hundred thousand dollars in annual energy savings and will write and issue RFQs for ESCO services. For example, as shown in the cost models below, it is possible to aggregate identified projects within geographically proximate RPCs into three bundles of several million dollars each. The EEC will also select winning ESCOs for each package of projects. This bundled approach will maximize near-term project implementation by aggregating some of the previously identified projects into packages that are financially interesting to ESCOs.

Through our research and interviews with people involved with municipal EE projects and ESCOs, we established that the process for selecting an ESCO and contracting for EE project services is relatively standardized. The Massachusetts-based Merrimack Valley Planning Commission, Metropolitan Area Planning Commission, and Franklin Regional Council of Governments each issued RFQs to solicit ESCO services for a bundled group of EE projects in multiple municipalities. Examples of those RFQs are included in Appendix C.

Once the ESCOs are chosen, the individual municipalities will either need to work with the EEC as an owner’s representative or contract with a third-party owner’s representative. The involvement of an owner’s representative is critical to ensure the contract between the town and ESCO provides favorable terms to the town. The costs of providing this service will have to be recovered, and we suggest the EEC charge a fee of 3% of the aggregated project costs. This will increase the amount that needs to be financed, but the fee can be rolled into the total cost of the project and would be repaid by the town over time through energy savings. The ESCO will be paid in the same way.

Once project packages are identified, the EEC will work with the municipalities and ESCOs to determine upfront capital costs (project costs) and determine the funding/finance mechanism (e.g. bond or lease). The process for using bonds to fund municipal projects is well-established in New Hampshire. While there are hurdles associated with bonds because of the need for Town Meeting approval, the existing structure of the state MBB allows the bank to issue its own bonds for bundles of municipal bonds. While not necessarily easy, this structure could be used to fund municipal EE work.

Leases, on the other hand, are not subject to Town Meeting approval, and were earlier discussed as a potentially easier way to fund municipal EE work. Unfortunately the viability of using leases to fund EE improvements remains unclear. The MBB does not currently accept leases, and it is still unclear if it is legally able to do so. In addition, over the course of this project, the ETAP team was unable to clarify which types of EE improvements municipalities are legally able to lease, e.g. new HVAC systems vs. building insulation. It is clear from our interviews that different individuals and entities working in the area of municipal EE have different interpretations of what can be leased legally. Ultimately the opinion that matters is that of the state, and this issue will need to be clarified by the state before attempting to finance a large number of municipal EE projects with leases or with a master lease.

PPESCO Pilot Program Development and Implementation

The Public Purpose ESCO (PPESCO) is a concept currently being developed by the Vermont Energy Investment Corporation (VEIC). A PPESCO provides energy management services similar to a for-profit ESCO but operates more like a non-profit. Revenue is put back into the program to fund additional EE work. This model allows the company/program to provide services to projects that have an energy savings dollar value too small to be financially attractive to traditional ESCOs.

The major difference between a PPESCO and a traditional ESCO is the profit model: the PPESCO is designed to aggregate and support EE projects that provide lower or longer term paybacks, and are therefore not financially attractive to for-profit ESCOs. As the PPESCO uses the revenue it receives to support ongoing EE services, it can evolve into a self-funded model for implementing EE projects that for-profit ESCOs won't serve and that municipalities won't address on their own.

VEIC is very interested in developing the PPESCO concept into an actual pilot project and has expressed interest in doing so in New Hampshire. Whether or not VEIC is involved, NHOEP should seek to develop a pilot PPESCO model for New Hampshire as part of the role of the EEC.

While the EEC is working to coordinate a standard ESCO contract for the first of three anticipated project bundles, s/he should also be developing a pilot PPESCO program for municipal projects that do not fit the for-profit ESCO model. It is unlikely the PPESCO pilot will launch in the first year of the roadmap. The EEC should work to pilot the PPESCO program in years two and three, with the goal of building a self-funded program by year four. The ESCO bundles should be complete by the end of year three and state funding should also end at that time, so ongoing program funds will need to be derived from the PPESCO program only.

Non-EPC Project Facilitation

At the same time the EEC is working to bundle some projects into ESCO and PPESCO packages, the EEC will also need to work with individual towns that either do not want to use an energy performance contract to pay for the project work or are unable to be a part of a package. This will be an ongoing role of the EEC.

For non-EPC projects, the EEC will advise municipalities on options for individual project financing and serve as a clearinghouse of information on specific lenders as well as model financing and construction contracts. These will generally be smaller projects that can be funded using smaller loans or existing utility programs and implemented by local contractors that town personnel can oversee directly, obviating the need to negotiate a complex EPC or manage an ESCO contract.

Payback can work in a variety of ways, depending on how the project is funded. In most cases, this will probably be a standard bank loan paid back with appropriated funds, but the use of EE grants and loans may provide less costly options. It will be the responsibility of the EEC to work with towns to identify the least expensive and most appropriate funding and financing options for each project.

Funding the EE Coordinator position

Based on interviews CLFV conducted, municipalities would not necessarily want a state employee to serve as their owner's representative in ESCO negotiations because a municipal contract with an ESCO is a local government business decision. In addition, structuring the EEC as a state position would require expensive overhead. A better option for the EEC position would be for the state to secure seed funding to issue an RFP and hire a technical consultant (or qualified organization) that can serve as the EEC on behalf of the state, for a period of four years. The first year of the contract will be covered entirely by the seed funding at \$100,000. The next year will be partially funded by the state at \$50,000. Additional budgetary needs will be covered through fees recovered from ESCO work, which will be based on a percentage of project costs (e.g. 3%). The budget for

the final year will be covered entirely by fee recovery, at which point the position/program should be self-funded and no additional state funds will be necessary to maintain its operation.

A self-funded program should be the goal of the RFP and may be accomplished through a combination of fee recovery from the facilitation of standard ESCO projects and cost recovery/reinvestment as part of a pilot PPESCO program, described above. Most municipal projects already identified by the ETAP program are small and will likely benefit from the creation of a PPESCO program, which can generate revenue from smaller projects and use that revenue to fund additional small project work.

Work plan and budget

Funding

NHOEP will need to secure a grant of at least \$150,000 to fully fund the project in year one and partially fund year two. Additional program funds will be raised through ESCO and PPESCO fees charged by the EEC, as shown in Table 1 below. The fees charged by the EEC to administer the municipal EE program are in addition to any fees charged by the ESCO for its services.

Table 1. Anticipated Program Revenue by Sources and by Program Year

Year	Source	Seed Grant	ESCO Fees	PPESCO Fees	Year budget
1	Seed grant	\$100,000			\$100,000
2	Seed grant + fee recovery	\$50,000	\$95,522		\$145,522
3	Fee recovery		\$70,778	\$60,000	\$130,778
4	Fee recovery		\$70,512	\$60,000	\$130,512

Table 1 assumes the EEC will recover a fee of 3% of project costs for facilitating traditional ESCO projects and a fee of 40% for providing PPESCO services. This also assumes the EEC is able to perform a certain level of project work in years two through four. The 3% fee for traditional ESCO work is low because the EEC will be less involved in the actual project work. If the EEC is able to implement a pilot PPESCO program, s/he will be acting as the ESCO and will thus be able to charge a much higher 40% fee for providing the type of services that would otherwise be provided by a traditional ESCO.

Table 2 below shows the basic calculations and assumptions about participation in three phases of ESCO project bundling. This is one example of how bundles could be structured, based on the geographic proximity of New Hampshire regional planning councils. No projects from the North Country Council are captured by this structure; due to the small size of projects in that region, it is unlikely they will be large enough to attract the interest of a traditional ESCO. It is also likely that almost 40 towns from the bundled regions will fall out of this process due to their small size or because they choose to not participate in the ESCO process. The EEC can provide individual assistance to the non-ESCO towns or seek to aggregate them in the pilot PPESCO program, thereby providing program coverage to smaller projects and projects in the North Country region.

Table 2. Example ESCO Bundles with Anticipated Participation and Revenue

ESCO Packages by RPC area	RPCs	Estimated project costs (aggregated)	Estimated total project costs (at 60% participation)	Estimated project fee (assumes 3% project fee)	Number of towns	60% participation
1	Southwest/ Southern/ Nashua	\$ 5,306,784	\$ 3,184,070	\$ 95,522	28	17
2	Lakes/Upper/ Central	\$ 3,932,091	\$ 2,359,255	\$ 70,778	36	22
3	Rockingham/ Strafford	\$ 3,917,338	\$ 2,350,403	\$ 70,512	26	16
Totals				\$ 236,812	90	54

Budget/Estimated Project Costs

The project costs for this position will be approximately \$400,000 over four years. The state should seek an initial \$150,000 grant to seed the position in years one and two, with the remaining funds being recovered by the EEC through fees charged for provided services, as outlined in Table 3 below.

Table 3. Draft Work Plan and Four-Year Budget for EEC Position Tasks

Task	Action	EEC Est. Hours	Cost*
1	ESCO projects	1010	\$ 185,588
1.1	Aggregate existing projects into ESCO packages	20	\$ 3,675
1.2	Develop RFQs for each package (3)	80	\$ 14,700
1.3	Administer RFQ process		
	Issue RFQs and respond to questions	45	\$ 8,269
	Collect and vet responses	120	\$ 22,050
	Select winning ESCO for each package	45	\$ 8,269
1.7	Facilitate ESCO contracting process		
	Provide technical assistance to towns	320	\$ 58,800
	Serve as an Owner’s Representative to participating towns	320	\$ 58,800
1.5	Act as liaison between stakeholders	60	\$ 11,025
2	Non-ESCO projects	1112	\$ 204,330
2.1	Marketing/Pipeline development	312	\$ 57,330
2.2	Provide responses to requests for assistance	400	\$ 73,500
2.3	Provide responses to developed new business	400	\$ 73,500
	TOTAL Labor	2122	\$ 389,918
Materials	Project related expenses (printing, room rentals, etc.)		\$ 5,000
Other	Travel		\$ 5,000
	TOTAL Materials and Other		\$ 10,000
	TOTAL Estimated Project Cost		\$ 399,918
	Recommended seed grant		\$ 150,000
	Estimated fee recovery from ESCO work		\$ 236,812
	Estimated non-ESCO fee recovery (PPESCO)		\$ 120,000
	Additional funding required (grants or fee recovery)**		\$ (106,894)

*Costs based on an estimated consultant rate of \$175 per hour. This budget does not assume that these tasks are all completed by one individual. While that is a possibility, this program should allow for an organization with multiple staff to respond to the EEC RFP, as long as that staff can complete the tasks within the estimated budget.

** Based on these assumptions and estimates, the program will generate close to \$106,000 in “profit” over the four-year period, which can be used to further support the ongoing program. In practice, the revenues from fee recovery may be less, based on actual participation and project implementation rate. For this reason, we still recommend securing a \$150,000 seed grant.

Section 5: The Municipal Energy Efficiency Roadmap

The following roadmap outlines a municipal EE project implementation program predicated on the creation/hiring of an Energy Efficiency Coordinator. The EEC will implement both aggregated EPC projects and non-aggregated, non-EPC projects with the potential for the program to be self-funded by the fourth year of operation. The roadmap is as complete as possible, but there are remaining decision points that will need to be addressed by NHOEP. We have presented options and follow-up steps as appropriate for each decision point.

The roadmap is designed as a four-year program. Before the start of the first year, NHOEP will need to secure seed funding for the EEC position, draft and issue the EEC RFP (based on the four-year program we describe), and select a winning consultant or organization. This process will likely take several months and should be started as soon as possible. Once the EEC is in place, that person or organization can begin to implement the program.

Year One

Primary focus: Bundle projects for ESCO work and issue first RFQ

The process for aggregating municipal EE projects into a master agreement for one ESCO is straightforward but by no means simple to implement. Example RFQs are listed in Appendix D, and we outline the process below.

- **DECISION POINT:** Determine and develop project bundles for ESCO interest.
 - a. Table 2 above lists one possible aggregation method to achieve three project bundles of the appropriate size.
 - b. ESCO process is likely appropriate for bundles of 15 to 20 municipalities per year with projects aggregating approximately \$2 to \$3 million in project costs per group.
 - c. 15 to 20 municipalities may prove to be too complex.
 - d. Any bundle method should be based on geographic proximity and project costs.
 - e. Each bundle for a RFQ will require approximately six months to secure entity participation and to obtain necessary project info and utility bills.
- Write a RFQ for ESCO services, for the group of participating towns.
 - a. RFQs for ESCO services are complex and technical (see examples in Appendix D).
 - b. Particular care should be taken to ensure the RFQ requires responding ESCOs to clarify their method of payment, markup structure, audit process, and methodology for measurement and verification.
- Issue the RFQ for the first bundle of projects; we envision issuing one RFQ per year for three years to cover three project bundle.
- Select the winning ESCO.
- **DECISION POINT:** Determine and develop sources of financing for projects:
 - Aggregated municipal bonds through the Municipal Bond Bank
 - a. The bonding process is straightforward but potentially problematic for a group of municipalities because of Town Meeting approval requirements.
 - b. The EEC may chose to try to coordinate bonds from each participating municipality, with the risk that some bonds may not be approved at Town Meetings.
 - Bank of America (or other) Municipal Leases.

- a. Municipal leases may avoid the need for Town Meeting approval, but it is not clear if leases can be used to finance energy efficiency projects.
- b. The EEC may chose to seek clarification on lease-eligible projects or may chose to move forward with a lease model in order to pressure the state to make a legislative decision clarifying the rules about municipal leases.
- o Given that the bundled projects are in the \$2 to \$3 million range, the EEC could investigate the willingness of private lenders to finance the project work.

Secondary focus: Establish tools and resources for non-EPC projects

Not all municipal EE projects will work for the traditional ESCO model, and some municipalities may choose to avoid using ESCOs. The EEC will need to be responsive to these municipalities by serving as a clearinghouse of EE project implementation information.

- Develop database of financing sources for small projects, including:
 - o MBB bonding options.
 - o CDFA grants and loans.
 - o Utilities and NH Electric Coop existing programs relevant to specific municipal needs
 - o Local community banks willing to provide loans for EE project work.
- Facilitate project implementation by providing initial coordination between municipal contact(s), funding source(s), and project contractors.
- Provide municipalities with model contract language and financing terms if available and appropriate for individual projects.
- Goal of providing services to 10 municipalities.
- Charge municipalities a fee (e.g. 40% of project costs) for this assistance, which will be paid out of project finance.

DECISION POINT: Potential tertiary focus: Investigate creating a PPESCO for aggregated, non-ESCO projects

Through our conversations with VEIC, it is clear that the PPESCO model has potential as a means for implementing EE projects that are not financially interesting to traditional ESCOs. However, the PPESCO concept has not been put into actual practice, and the VEIC is looking for pilot opportunities. For this reason we feel New Hampshire should explore the creation of a PPESCO, but work to implement municipal EE projects mainly through the primary and secondary efforts described above. While this work is happening, the EEC should explore the practicality of creating a PPESCO that can serve New Hampshire communities. Three options are listed below.

- **Option one:** Work with VEIC to pilot PPESCO concept in New Hampshire with a group of appropriate projects (or if VEIC is hired as EEC, allow them to pilot the concept). VEIC has been working on the PPECISO project and is actively looking for pilot opportunities in Vermont. If VEIC were hired to perform the EEC work, they could be given the explicit task to look into establishing a PPESCO for New Hampshire as well.
- **Option Two:** If another consultant or organization is hired to perform the EEC work, that consultant or organization could be tasked with exploring PPESCO pilot options for New Hampshire with VEIC, or that

consultant could be tasked with developing an independent PPESCO for New Hampshire (i.e., no involvement of VEIC).

- **Option Three:** The State (NHOEP) could investigate creating a PPESCO independent from the EEC program.
- Contact Dan Quinlan at VEIC to discuss the PPESCO concept.
- Questions to ask:
 - What would be the anticipated timeframe for implementing a PPESCO program in New Hampshire?
 - What start-up costs are needed to form the PPESCO in New Hampshire?
 - What is the anticipated annual operating budget of a PPESCO?
 - What is the exact structure of the PPESCO revenue model? How much ongoing work does the PPESCO need to support itself?

Year Two

Primary focus – Implement first round of ESCO projects

- Monitor project implementation and provide municipal assistance, as necessary.
- Depending on consultant’s skill set, the EEC will either serve as the town agent for all towns or will need to assist towns with hiring an owner’s agent at this point in the process.
- The EEC will recover revenue through a fee of 3% of the total EE project cost. This fee, and the ESCO fee, will be added to the total project cost and financed as part of the total project cost. All costs will be paid back through energy savings. Fees will be recovered at the beginning of the project process, which should be near the beginning of the EEC program’s second year.

Secondary focus: Issue RFQ and select ESCO for second bundle of projects

- Follow similar process as in year one, for second bundle of aggregated projects.

Tertiary focus: Provide non-EPC technical assistance

- Provide technical assistance in the form of funding facilitation for all interested NH municipalities.
- Link interested municipalities with appropriate, available funding sources.
- Stay informed of existing and new funding sources.
- Market services to New Hampshire municipalities.
- Goal of providing services to 10 municipalities.
- Recover a fee of 40% of project cost for each project to which services are provided.

Potential additional focus – If feasible, implement PPESCO pilot

- Based on decisions in year one, the PPESCO will either be administered by the EEC or the EEC will facilitate PPESCO project work at a high level.
- Through targeted outreach, identify a group of interested municipalities with 5 to 10 projects that are not financially attractive to the traditional ESCOs.
- Draft and finalize contracts between the municipalities, project contractors, funding source, and PPESCO.

- NOTE: We assume there is no need for an owner’s representative in the PPESCO program because the PPESCO is set up to act in the interest of the municipality, and excess revenues are put back into the PPESCO to support ongoing municipal EE project work.
- Repeat this process on an ongoing basis to maintain a portfolio of projects that support a self-sustaining PPESCO organization.

Year Three

Primary focus: Implement second round of ECSO projects

- Follow similar process as in year one.
- Recover fees from second round.

Secondary focus: Issue RFQ and select ESCO for third and final bundle of projects

- Follow similar process as in year one.

Tertiary focus: Conduct non-EPC project marketing and provide technical assistance

- Undertake a more aggressive marketing program to provide EE project implementation services to municipalities that are not in an ESCO (or, if created, a PPESCO) bundle.
- Provided services are the same as those provided in year two.

Potential additional focus: if feasible, continue ongoing PPESCO project implementation

- Work toward making PPESCO a self-sustaining program that can continue to operate independent of state funding. This will involve ongoing marketing and business development through outreach to municipalities.
- The self-funded program will require fee recovery sufficient to cover operating expenses plus revenue the PPESCO can reinvest in its work.

Year Four

Primary focus: Implement third and final round of ECSO projects

- Follow similar process as in year one.
- Recover fees from third round.

Secondary focus: Conduct non-EPC project marketing and provide technical assistance

- Continue outreach and provide project facilitation to interested municipalities.

DECISION POINT: Tertiary focus: Evaluate options for ongoing EE project work beyond year four

Questions to answer:

- Is there an ongoing need for the EEC program?
- Can the EEC program continue to fund itself through fee recovery for provided services?
- Can additional grant or other money be secured to fully or partially fund ongoing EEC work to facilitate EE projects for individual municipalities?

DECISION POINT: Potential additional focus: Ongoing operation of a self-sustaining PPESCO

- If the PPESCO is operating successfully, assess the ongoing need and market opportunity for New Hampshire, and adjust program as necessary.
- If the PPESCO was not developed previously, investigate the market opportunity to develop a PPESCO as part of ongoing municipal EE project facilitation. Follow the same initiation/pilot steps as outlined above.

APPENDIX A: New Hampshire Energy Efficiency Financing Interviews

The following interviews were conducted:

1. Steve Weisman (Peregrine Energy)
2. David Barnes (Bond counsel and Chair, public finance practice group, Devine Millimet)
3. Richard A. Manley Jr. (Partner, Edwards Wildman Palmer LLP, MBB Counsel)
4. Holly Andreozzi (Senior Vice President at Banc of America Public Capital Corp)
5. Neil Zobler (President, Catalyst Financial Group)
6. Craig Snow (NH Electric Cooperative)
7. Gilbert Gelineau (PSNH, NH utility-run municipal EE loan/lease programs)
8. Helen Aki (Metropolitan Area Planning Council)
9. Beth Greenblatt (Independent owners' agent rep for performance contracting in NH & MA)
10. Dan Quinlan (VEIC)
11. Cindy Arcate (Power Options)
12. Ed Murdough (NH Dept of Education)
13. Joyce Ferris (Blue Hill Partners, LLC)
14. Doug Ross (Purchasing Manager, City of Concord)
15. Cathy Bogle Shields (NH CDFA)
16. Barbara Robinson (Department of Revenue Administration)
17. Robert Dean (Director of Regional Services, Franklin Regional Council of Governments, MA)
18. Len Shuzdak (USDA, Area Director, MA)
19. Sheila St. Germain (Exec. Director, NH Municipal Bond Bank)
20. Cassandra Bailey, Municipal EE Fund, and Ted Kuchinski, CFO (NH CDFA)
21. Steve Burrington (Serrafix and former CSO, Jordan Institute)
22. Eric Steltzer and Mike Pais (NHOEP)
23. Kleo Taliadouros (Director, Renewables, AMERESCO)
24. David Eisenthal (Unibank)

Appendix B: New Hampshire Energy Efficiency Financing Matrix

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Energy Efficiency or Financing Entity	Capital Source	Financing Mechanism	Project Aggregation Mechanism	Project Coordination/ Administration	NH Pros	NH Cons
RGGI money	X				Significant potential funds for EE projects	Future NH participation in RGGI uncertain
Utility system benefit charge	X				Reliable source of funds	Can only be used utility customers via utility programs
State bonds	X	X			Established financing mechanism; good rating and pricing	State could issue bonds to create a state fund to finance municipal EE projects; would probably require legislation for this purpose and to establish and control such a fund; state may be reluctant to "use" its rating for such purposes
Municipal bonds	X	X			Straightforward process; good for larger projects due to administrative costs	Town municipal bonds must be approved by town meeting supermajority and are generally inappropriate for small projects. Some towns have no or low bond ratings and would better use the MBB for bonding such projects. MBB can fund municipal debt obligations for smaller (\$100k or more) projects.
NH Municipal Bond Bank (MBB)		X	X		Existing agency with established process for working with municipalities and aggregating municipal bonds and funding these by issuing its own bonds, using its A rating to enable towns to access cheaper rates than is available to them for their own bonds	Municipal bonds proffered to MBB for funding still have to be approved by Town Meeting supermajority and can't cover operating expenses. Municipal operating lease funding is presently not an option with MBB (though MBB has indicated an interest in considering funding such leases).
Private bank loan	X	X			Straightforward process; can leverage existing relationships between municipalities and lenders; potentially good for smaller projects	More expensive option for larger projects
CDFA Municipal Energy Reduction Fund revolving loan fund	X	X	X		Existing source of financing for municipal EE projects; established, stable entity	Funds almost fully utilized. Revolving loan fund has to be recapitalized; was initially capitalized with RGGI funding obtained by an application to the Energy Board. RGGI funding in past has been too small to enable funding EE projects on the scale anticipated.
NH Electric Coop	X	X	X		A major NH utility that provides service in 115 NH communities and is funded by the USDA and Federal Coop Finance Corp at low long-term and short term rates serving 81,000 members including towns	Limited to providing funding for projects in its 115 community area. Has some small EE programs.
Qualified Energy Service Companies (ESCOs)	Sometimes	X	X		ESCOs offer energy performance contracts (EPCs) with guaranteed energy savings; install and manage retrofits; manage energy performance, and sometimes provide access to financing	Potentially not interested in working on smaller (less than \$100k) projects and may try to cherry pick the better projects
Public purpose ESCO (PPESCO)	Sometimes	X	X		Similar to traditional ESCOs, but may be more suitable for smaller, municipal EE projects	Unproven model, currently being developed by VEIC
New market tax credits	X	X			Tax credit program allowing tax credit equal to 39% of project costs spread over 7 years. For large projects using tax credit investors.	Limited to projects in economically disadvantaged areas. Very complicated to structure deals. Significant requirements unrelated to EE (e.g. jobs and community benefits).
Energy performance contract (EPC)		X			Costs of projects, including financing, must be paid for by energy savings. ESCOs guarantee these savings. Town doesn't need upfront capital. Payback over long periods allows for deep retrofits.	EPCs where savings are guaranteed by an ESCO are highly complex agreements. Transaction costs limit usefulness to smaller projects

Appendix B: New Hampshire Energy Efficiency Financing Matrix

Chauffage contract (type of EPC)		X			In theory, would provide municipality with a fixed-rate long-term contract for energy services, and all energy services would be managed by a single energy service company	In use in Europe for commercial customers, but not widely used in the US or with municipalities; requires ESCO to play a significantly expanded role, managing all the energy for a facility
Municipal Operating Lease Agreement		X			An operating lease allows a town to treat lease payments as operating expenses, usually included in the utility line of its annual Town budget, which requires only 51% Town Meeting vote for approval. It is not considered a debt obligation and is therefore not included as debt on Town balance sheet or included in Town capital budget.	May be perceived as a means of avoiding Town Meeting supermajority votes required for Town to issue bonds and notes or incur long-term contract obligations, such as capital leases. It is always subject to annual appropriation and the Town usually owns the property leased, subject to a security interest in favor of the lessor, which is triggered only if there is a default.
Master Lease Agreement		X	X		Usually offered by leasing companies and banks, Master Lease Agreements provide lessee with a line of credit under which it can proffer qualifying municipal operating leases to be accepted by the lessor finance institution. Some agreements contain escrow agreements under which the financial institution, upon acceptance of a lease, puts lease purchase proceeds in an escrow account so the escrow agent can fund progress payments on EE projects during construction.	May be perceived as a means of avoiding Town Meeting supermajority voting requirements, as above.
Utility-run municipal EE programs		X	X	X	Reliable funding source; opportunity to leverage on-bill financing infrastructure, under which utility bills customer for repayment installments as part of customer billing.	Generally for small projects; no NH requirement for utilities to offer these programs
Energy Services Agreement (ESA)		X			Similar to EPC, but based on a PPA model (investors cover upfront costs and are paid back via a contract for energy savings)	Requires forming a special purpose entity to own the assets and manage invested funds
Managed ESA		X	X		Similar to performance contract, but based on a PPA model (investors cover upfront costs and are paid back via a contract for energy savings)	Intended for large commercial property owners with multiple tenants
Self-funded EE coordinator		X		X	Allows for creation and ongoing resources for technical assistance position, to facilitate more and better projects; Single point of contact to help coordinate multiple programs and funding sources	Would require seed funding, and upfront work by the State to set up the program
Sustainable Energy Utility (Delaware model)		X	X	X	Consolidating multiple programs would help with coordination	Very hard to create a new organization that would "take over" programs and funding sources from existing programs. SEU intended to manage ALL renewable energy and EE programs, not just municipal EE
NH Regional Planning Commissions (RPCs)			X	X	Possible vehicles for aggregating projects and even bundling contracts for re-financing by MBB or Coop	May not have sufficient EE expertise and may be outside normal scope of work

Appendix C: Interview Notes

1. **Best practices for ESCO RFQs** as it relates to governance issues, include:
 - a. **Drafting the RFQ (interview with Bob Dean at FRCG)**
 - i. Bring on a hired consultant that understands the energy services business early on in the process, especially to help write the RFQ
 - ii. Recommended Beth Greenblatt at Beacon Integrated Solutions - that was who they brought on to do the work
 - b. **Services**
 - i. The MAPC RFQ says that qualifying ESCOs *should* provide “a program of services, including energy audits, energy conservation measures, energy conservation projects, or a combination thereof, and building and maintenance services, primarily intended to reduce the cost of energy and water in operating 1 or more buildings, which may be paid for in whole or in part, by savings attributable to a reduction in energy and water consumption which result from the services.” (MGL Ch. 25A, 11I)
 - c. **Contracting**
 - i. *Preliminary Audit*²:
 1. ESCO, using town billing records, building information and walk through inspection, provides estimate of possible projects and savings that will be basis for IGA below.
 2. Towns can drop out of the assessment.
 - ii. *Investment Grade Energy Audit (IGA)*³ - shall include but not be limited to:
 1. A facilities and maintenance assessment
 2. A written investment quality comprehensive energy audit report for a comprehensive and sustainable conservation and renewable program
 3. Detailed proposed technical scope of work for construction/implementation of the ESCO’s recommendations, including facility improvements and maintenance and/or owner training programs
 4. Proposed methods of measurement and verification of guaranteed savings that conform to the most recent standards established by the *Federal Energy Management Program* of the U.S. DOE
 5. Proposed Guaranteed Savings Proposal
 6. Further notes about IGAs in practice⁴
 - a. IGA contract break-up fee has not been a problem for towns in MA
 - i. Could be because the towns knew what the benefits of going forward with the contract would be or that the contract breakup fee was widely advertised from the outset
 - ii. Towns have set aside money for this
 - b. No real discussion about financing - this will start to emerge as the IGAs are completed and contract negotiations start

² Per MAPC RFQ

³ Per MAPC RFQ

⁴ Tom Bryan interview with Helen Aki at MAPC

- c. No real discussions about forward capacity this may be an extra benefit if the towns want to pursue it
- d. Progress - 5 IGA Agreements signed, 1 PPA landfill signed, Others moving forward with IGA negotiations
- e. MAPC hired evaluator for program: responses from towns about process, Peregrine, Ameresco all very positive
- f. General Advice for NH
 - i. Explain the ESCO process to target towns before the RFQ is issued. Have joint meetings to allow towns to see each other's concerns and begin to communicate with each other. Have meetings with town management to be sure the process is understood. Have community briefings. Where communication was good, towns moved; where it was not so good, towns have not moved-are not involved. Prepare good baseline information for the RFQ – utility bills for past 3 years, description of facilities. This gets town involved and curious about costs they have not thought much about
 - iii. Awarding Authority has the ability to negotiate out certain provisions of the initial IGA before the contract is executed (i.e. to exclude measures that are too costly, to advocate a phased approach, or negotiate simultaneous implementation of products and services before IGA is executed)
 - iv. Establish a *Scope of Work* based on the IGA upon acceptance of the IGA
 - v. *Energy Management Services Contract (EMSC)* - established after the IGA and scope of work is accepted. Should incorporate, among others:
 1. Negotiated Scope of Work
 2. Guaranteed Energy Savings Requirements
 3. Methods of measurement and verification
 4. Any operating, maintenance, and training support services
 5. Details outlining the ESCO's approach to implementing the accepted IGA report, including its approach to demonstrating how the guaranteed energy savings will be achieved
 6. ESCO's implementation and measurement strategies with respect to the construction term and performance term
 - vi. Responsibility - all shall be assumed by ESCO
 - vii. EPC contracts in MA are limited to 20 year
 - viii. *RFQ Town Selection*
 1. Somewhat *ad hoc* process
 2. MAPC knew which towns were working on energy and gave them special attention - advertised to all 101 towns about program
 3. Got 14 responses
 4. RFQ Selection Committee - 5 towns agreed to be a part
 - ix. Most towns that had participated were large, some were smaller⁵
 1. Volunteer energy committees pushed for participation
 2. Smaller towns believed they could get a better deal by taking part in a larger program than by going it on their own

⁵ Interview with Helen Aki at MAPC

3. Some larger towns are already doing EE programs on their own
- x. *ESCO Responder Selection and Evaluation Process*⁶
1. Finalists that were selected were interviewed extensively and required to do a preliminary audit, which was important during the selection
 2. Separate consultant was selected to advise throughout the process
 - a. Consultant looked over elements of the responses -- questioning unusual surveying equipment, computer programs, or contract mark-ups, etc.
 3. Factors Favoring Selected ESCO
 - a. Independent company, as opposed to division of large conglomerate
 - b. Capacity to serve large number of towns simultaneously
 - c. Knowledge of MA towns and policies
 - d. Quality of personal presentations and interview performance
 - e. Preliminary Audit
 4. Best part of evaluation process is interviews and personal performance
 - a. In future MAPC will do more of this at earlier stage.
- xi. *Contracting Responsibility* - the ESCO shall be the prime contractor and sole point of contact with regard to all contractual services, including but not limited to:
1. Design, supervision, construction, installation, security, training, and savings guarantees

d. Measurement and Verification

- i. Methods of M&V shall conform to the most recent standards established by the Federal Energy Management Program (FEMP) of the US DOE and most recent International Performance Measurement & Verification Protocol (IPMVP)

e. Soliciting creative financing solutions

- i. Savings Guarantee
 1. Written guarantee to Awarding Authority from ESCO that certain amounts of savings will be achieved on an annual basis or the ESCO shall reimburse for the full shortfall amount each year for which the shortfall exists
 2. Guarantees may not be done so by a third party, unless it is the parent company of the ESCO
- ii. Outlining innovative project funding strategy. Must include:
 1. Information regarding all potential funding sources that could be applied to any or all potential energy management services
 2. Description of the applicant's experience in securing such funding
 3. Description of any new sources of funding that may have recently become available but that the respondent has not yet had experience with
- iii. Awarding Authority gains sole ownership over rights to benefits that have monetary value that are the direct result of the project (i.e. RECs, carbon credits, emissions credits, etc.)

⁶ Interview with Helen Aki at MAPC

- f. **Assessing the technical and contractual capacity of ESCOs**
 - i. Town Agents (TA): MAPC did separate RFQ for TAs to help towns with understanding ESCO process and negotiating with the selected ESCO
 1. Towns hired TA through MAPC, which bills towns for TA costs
 2. Only the 14 towns involved can access this
 - ii. ESCO cannot cherry pick the towns, nor can they cherry pick the projects unless they find them totally unfeasible
 - iii. Energy savings valuation methodology: very little discussion of this at the RFQ selection level - left up to towns
 1. Focus on markups and soft costs, which are the primary sources of income for ESCO
 2. If town doesn't like markup they can do the project themselves
 - iv. Many of the model contracts from DOER do not fully represent ESCO practice

- g. **Financing and Insurance Requirements (MAPC RFQ)**
 - i. ESCO shall be required to provide the municipalities with 100% payment and performance bonds relating to the installation of the project for each of the Municipalities' Projects from a surety company licensed to do business in the Commonwealth of MA and whose name appears on United States Treasury Department Circular 570.
 1. In response to the solicitation, ESCOs are required to provide documentation demonstrating their ability to secure the aforementioned payment and performance bonds
 - ii. ESCO shall procure and maintain insurance as required in the IGA agreements and EMSC
 1. ESCO shall maintain at all times during the agreement Employer's Liability, Workers' Compensation, Public Liability and Property Damage Insurance, including contractual liability coverage
 2. ESCO shall furnish certificates of insurance upon successful award

- h. **Taxes, Fees, Code Compliance, Licensing (MAPC RFQ)**
 - i. ESCO shall be required to pay any required permits, licenses, taxes or fees associated with the execution of the EMSC
 - ii. If there are tax credits for which the Municipalities are not qualified, but for which the ESCO is qualified, those savings will be passed on from the ESCO to each Municipality

- i. **Existing Municipality Systems and Infrastructure**
 - i. ESCO recommendations and proposals have to seamlessly integrate with the Municipalities' existing systems and infrastructure

- j. **Project aggregation abilities and selection criteria**
 - i. In practice, aggregation will fall into two types:
 1. Project Contract Aggregation - to attract the attention of ESCOs who will only bite on multi million dollar deals
 2. Financing Contract Aggregation - harder to do, less common or feasible than the project aggregation; towns may need to "go it alone" on the financing piece although aggregation is not completely out of the question

- a. Uncertainty whether there can legally be a pool of aggregated loans/financing in New Hampshire outside of the MBB (need to look into this to clarify)⁷

- k. **Sample Questions for vetting Contractor Qualifications**, on subjects including:
 - i. General reputation and performance capabilities
 - ii. Experience and project references
 - iii. Investment Grade Audit
 - iv. Construction and Commissioning
 - v. Methodology of Determining and Guaranteeing Energy Savings
 - vi. Service and Maintenance and/or Owner Training
 - vii. Pricing Structure

- l. **Acceptance of the Audit and Audit Report**
 - i. Awarding Authority may refuse payment for the Audit Report if
 - 1. The savings identified in the Response vary more than 15% from the proposed savings identified in the audit
 - 2. The projected value of the net benefit to the Awarding Authority set forth in the response differs by more than ten percent of the corresponding purchase option price provided in the Energy Audit
 - 3. Any purchased option price set forth in the Energy Audit is greater than one hundred ten percent (110%) of the corresponding purchase option price provided in the Response

- 2. **How best practices pertain to NH governance issues specifically**, such as:
 - a. **Understanding Local Political Processes and Local Government (FRCOG interview)**
 - i. Educate ESCOs early on in the process about local government processes that influence how information flows and who has authority to make decisions (i.e. is it one person or an entire board? Is there a voting process?)
 - 1. Will help them execute and advance projects more effectively
 - 2. MA towns have a similar voting approval structure as NH municipalities
 - ii. When Siemens was hired, they did not anticipate what they would have to do to navigate local government processes such as voting referendums and town approval
 - 1. Thought all the towns would simply “fall in line”
 - 2. Having that level of understanding early on would have helped improve Siemens ability to proceed w/projects
 - 3. Would have been in Siemens best interest to get in front of towns to educate local officials on what they were getting into with their services
 - iii. FRCG did their best to educate, but every town is different in terms of how information flows and who has authority to make decisions - Siemens could have taken more ownership over this education process

⁷ From conversation with David Eisenberg at Unibank

b. Educate local officials about financing processes and options (FRCG interview)

- i. Misperception about it being “cost free” - there was a lack of understanding among city officials that they would have to pay up front for the energy services through loans etc.
- ii. FRGC eventually hired a local bank with experience in EPC that finances local debt (i.e.

Unibank from MA)

- 1. Served as a financial advisor as well as direct source of financing for the towns and districts involved
- c. Official procurement procedures for cities and towns
- d. Limits on procurement laws for cities and towns

3. General Financing Mechanisms⁸

- a. David Eisenthal at Unibank said that two types of mechanisms are most common for the muni EE projects he helped finance with FRCOG:

i. General Obligation Bonds (GOB)

- 1. Tax Exempt - initial lower cost of borrowing
- 2. Payment terms - each payment amount must be the same, although the principal and interest within that amount may be subject to fluctuate over the life of the bond
 - a. Difficult to match energy savings (which are used to pay back the debt) /individual town savings schedule with the same payment level over the life of the bond

ii. Qualified Energy Conservation Bonds (QECB)

- 1. Not tax exempt - higher interest rate
- 2. Payment Terms - accompanied by a tax credit subsidy that can be cashed in to the federal government
 - a. This typically lowers the overall cost of borrowing to less than that of GOBs
- 3. More popular than GOBs in Unibank’s experience
- 4. QECB’s are issued by the federal government and distributed to states on the basis of their population size
 - a. With tax credit bonds, generally the borrower who issues the bond pays back only the principal of the bond, and the bondholder receives federal tax credits in lieu of the traditional bond interest. The tax credit may be taken quarterly to offset the tax liability of the bondholder.
 - b. The tax credit rate is set daily by the U.S. Treasury Department; however, energy conservation bondholders will receive only 70% of the full rate set by the Treasury Department under 26 USC § 54A. QECB rates are available at https://www.treasurydirect.gov/govt/rates/irs/rates_qtcb.htm.
 - c. Uncertainty on whether the Municipal Bond Bank can access QECB’s
 - d. Critical question lies in determining which New Hampshire agency controls the distribution of QECB’s

- b. David also gave insight on these mechanisms:

i. Tax Exempt Leasing

- 1. Works in places where it is harder to issue a General Obligation bond

⁸ Interview with David Eisenthal at Unibank (which has experience w/municipal EE financing)

2. Higher risk strategy than issuing a bond since it is not subject to same revenue raising mechanisms as bond (need to clarify this with Tom)
 - a. Lessors assume additional risk which is reflected in the borrowing rate
3. Shorter payment terms, higher interest rate as a result
 - a. Payment terms, however, could hypothetically be structured to ascend as you increase in energy savings

4. **Active Local Banks in the Muni EE Market**

- a. Unibank - out of western MA
 - i. Worked extensively with FRCOG on their municipal energy efficiency projects, as well as with large ESCOs and the USDA
 - ii. Smallest project they had done was \$120,000 - with a small, unrated town
 1. This project was done through true tax credit bonds - found another bank that was willing to take the subsidy credit - at which point there was a substantial balloon payment at the end of the bond
 2. Town paid into an escrow account throughout the project, which was then used to pay the substantial balloon payment at the end of the bond
 - iii. Very interested these types of deals - would be open to serving an aggregation role of sorts
 - iv. Would be open to further advising on an hourly basis about setting up these types of markets/systems/projects in New Hampshire
 1. They played a similar role in Franklin county when they did stuff with large ESCO, FRCOG, and USDA

5. **Community Facilities Loan Program (USDA)**

- a. Eligibility - who may apply
 - i. Rural towns with a population of 20,000 or less
 - ii. Applicants may be a public entity such as a municipality, county, or special purpose district
 - iii. Applicant must be unable to obtain the loan from private or cooperative lenders, at reasonable rates and terms
 - iv. All facilities to be improved with loan funds shall be for the benefit of the public at large
- b. Use - how the funds may be spent
 - i. Funds can be used for construction, land acquisition, legal fees, capitalized interest, initial operation and maintenance costs, project contingencies, and any other cost that is determined by Rural Development to be necessary for the completion of the project
 - ii. Can be used for necessary equipment for the operation of the facility
- c. Borrowing Terms
 - i. Maximum term for all loans is 40 years
 - ii. Repayment period is limited to the useful life of the facility or any statutory limitation on the applicant's borrowing authority
- d. Rates
 - i. Poverty Line Rate: the poverty line rate will not exceed 5 percent per annum and must comply with the following conditions:
 1. Primary purpose of loan is to upgrade existing facilities or construct new facilities required to meet health or sanitary standards
 2. The median household income of the project service areas below 80 percent of the statewide non-metropolitan median household income

- e. USDA Funding as it applies to New Hampshire - interview with Mark Kroprowski
 - i. Community Facilities Loan program
 - 1. Full details can be found [here](#)
 - 2. Three fixed interest rates
 - a. Poverty Rate - set at 4.5% via mandate
 - b. Market Rate - fluctuates
 - c. Intermediate Rate - halfway between market and poverty rate
 - 3. Millions of dollars available
 - 4. Can do a combination loan and grant
 - 5. Applies only to cities with populations of 20,000 or less
 - 6. Fund uses
 - a. Loan funds may be used to construct, enlarge, or improve community facilities for health care, public safety, and public services. This can include costs to acquire land needed for a facility, pay necessary professional fees, and purchase equipment required for its operation.
 - b. Refinancing existing debts may be considered an eligible direct or guaranteed loan purpose if the debt being refinanced is a secondary part of the loan, is associated with the project facility, and if the applicant's creditors are unwilling to extend or modify terms in order for the new loan to be feasible
 - 7. Schools districts are eligible - however, USDA would have to look at what other sources of funding are available to them to affirm whether USDA funding is the best option
 - 8. They *cannot* fund recreational based projects, even if they are municipally-owned (i.e. pools, recreation centers, etc. - although YMCAs have passed because of their community-based component)
 - 9. Agnostic to type of facility improvement - applies to all types of energy efficiency projects
 - ii. Grants
 - 1. Up to \$135,000 available for the entire state
 - 2. Will fund anywhere from 15-75% of the project costs, including construction costs
 - 3. Grant disbursement depends on the median household income of the community served
 - 4. May be useful for small projects that have trouble with financing
 - 5. Eligible communities can be found at <http://www.rurdev.usda.gov/supportdocuments/NHCensusListforWeb.pdf>
 - iii. Application Details
 - 1. Have to handle each project on an individual basis
 - 2. Each project would have to be bid out separately under the "fair competition" requirement

6. Utility-Based Programs

a. PSNH - "Smart Start" program for municipalities

i. Size - \$2 MM revolving loan fund that was started through an initial system benefits charge

ii. Conditions

1. Applies only to electrical-saving equipment - does not apply for upgrade of gas driven HVAC equipment or for envelope improvements
 - a. This is under review by the PUC through an existing docket
2. Loans are interest free but there is a 5% upfront charge
3. Payback can be anywhere from 1 to 12 years
4. Project has to show a positive cash flow from the project savings
5. PSNH recommends the equipment to be used
6. Projects can use any available rebates

iii. Aggregation Perspective

1. They are open selling its Smart Start loan portfolio to a long term investor such as MBB and using the revolving loan fund to aggregate and bundle project obligations for resale. As long as PSNH took no loss and got paid for servicing, they would be interested in doing this.
2. However, interest free obligations would be a problem because they would have to be purchased at a discount (I'm assuming when they sell those to someone like MBB) - to avoid this loss, PSNH would have to build in an interest rate on the obligations in the future

b. New Hampshire Coop - "Smart Start" like program that wraps municipals into their commercial customer base

i. 75% of the savings go to the service obligation but is funded through the system benefits charge and is limited

ii. Project Size

1. Most of the municipal projects are in the \$10-20k range (towns are small and it would be rare to get anything above a 1600 sf. project)
2. It would be rare to get a \$75k project. They have worked with schools, which have larger projects in the \$30k range. Municipals seem to slowly do one project at a time each year, rather than try to do a lot at once. This keeps their investment costs down.
3. There is no limit on the amount of Coop funded program funds. Smart Start is limited to System Benefit Charge income and repayments

iii. Business Programs

1. There are also small and large business programs for rebates for specific electrical efficiency improvements such as refrigeration, HVAC, lighting for small businesses and a range industrial electric motors, controllers and other electrical equipment for larger customers, offering similar rebates. Also funded by Coop.

iv. Rebates and funds - they have a fossil fuel savings program they fund with their own funds which allows for a 50% grant/rebate up to \$7500 for small commercial and \$15k for large commercial (100+ kwh user) per customer per year to undertake EE projects to reduce their oil heating costs. There is a heat pump rebate of 50% up to \$25k, water heater rebate of 50% up to \$1k and solar thermal and PV of 25% up to \$25k. These are funded by Coop from own funds. There may be \$500k in aggregate funding for these programs. Projects with one year or less payback don't qualify.

v. Perspective on Bundling/Aggregation - no interest in funding bundles of muni leases and other obligations from muni EE projects on the Coop's books

1. Interviewee thought that existing programs had met the muni demand satisfactorily

7. Benefits of ESCO approach - a few yet relatively limited options

- a. Concentrate on larger entities – bigger towns/suburbs, school districts, county buildings.
- b. Do RFQ for a small number of towns/entities – 14 at MAPC too many. Takes ESCO too long to deal with all the towns. Two years to get to contract in N. Andover.
- c. The ESCO contract has the advantage that it gets a lot of work done quickly in one shot, less continuing project hassle for the town/entity.
- d. ESCOs make up for town management weakness in contracting and procurement
- e. The savings are really worked out through the commissioning of each element of the contract, where the quality of both the equipment and the installation are focused on by the ESCO (who is a guarantor). This means that the usual difficulties a town has with contractor quality and performance is eliminated.
- f. Municipal leases avoid town meeting problems and BofA and Wells Fargo do them a lot. (Steve was involved in one at Farmington CT (\$3.5mm, 16 yrs, 3%)
- g. A town agent is absolutely necessary for an ESCO process, unless the town has really sophisticated energy, contracting and procurement staff

8. Overview of the Public Purpose ESCO (PPESCO) model: Interview with Dan Quinlan at the Vermont Energy Investment Corporation (VEIC)

- a. Differences Between the ESCO and PPESCO models:
 - i. ESCO - for-profit, returns its money to shareholders, targets large projects
 - ii. PPESCO - non-profit, reinvests profits back into the organization for further projects; mission-driven entity, so could conceivably be focused on affordable housing, health care, environmental issues etc.
- b. Market Focus:
 - i. Addresses market gap containing projects that are “too small” to be served or targeted by regular ESCOs
 - ii. Doesn't make sense to target projects that would possibly be in direct competition with private ESCOs
- c. Pilot Projects and Time Frame
 - i. VEIC is looking to implement and scale up further pilot projects within the next 12 months
 1. Needs to find and vet the appropriate pilots; talk to end customers and work through the economics and what the retrofits would be
 2. In the end, model depends on projects that are manageable and can be completed relatively quickly
 3. Once you've identified a group of 20 or so prospective projects, pick 5-10 that make most sense for the end customer as well as the pilots, from a financial and practicality perspective
 4. Finalize the contracts and implement the projects
- d. Aggregation
 - i. Aggregating contracts is essential for the PPESCO model
 - ii. Idea is that you have a portfolio of projects that sit within the PPESCO and it is that portfolio that makes the model long-lived and sustainable

- iii. Need to take into consideration the reality that a certain percentage of projects will fail: 1-2% failure rate is typical in the private ESCO market, which builds those risks into its business models
- e. Scale (geographic, size, cost, etc.)
 - i. Don't yet know the answer - over the next year, they'll be studying the business approach
 - ii. Pilot projects will be critical for answering scale-related questions about what works and what doesn't
 - iii. It's about addressing the right needs - would be interested in working with other parties that want to drive the model, because partnerships make sense (i.e. Municipality, business sector, regional planning organization)
 - iv. Do not know what the cost constraints would be - big projects are unlikely because that's the space where traditional ESCO's are playing in - on the other end, it wouldn't make sense to do \$1000 project because there are a lot of labor costs involved. Pilot projects will help them determine the upper and lower thresholds
- f. Difference Between Vermont and New Hampshire
 - i. Does not see any major differences, roadblocks, or enablers at this point, although the pilot projects will provide valuable lessons
 - ii. Need to find municipalities that think the ESCO model could be good for them from a financial point of view, may or may not have a community energy plan, then working with those communities because they are trying to pull the idea in - want to work with those who are excited about it first, then bring others in after lessons have been proven
- g. Other PPESCO insights from VEIC
 - i. VEIC is very interested in the PPESCO idea and has executed one-off projects in the past that would be PPESCO-like
 - ii. What they're trying to do is take the idea to the next level, have funding to explore, and are looking for funding from elsewhere to do it
 - iii. Any entity that goes into it should be aware of one overarching thing- make sure that the entity you bring in to do it should be properly informed about how to find customers, execute projects, - would like to go in with good assurance that the projects are going to be successful
 - iv. Need people with the expertise to look at the opportunities and create a financial picture that makes sense
 - v. Monitoring to make sure you're capturing the savings
 - vi. People who do this need to know how an ESCO runs, and all related parts - executed in a professional manner
 - vii. Will fail if they don't understand the business model; they may understand the model, but may try to form too many partnerships to make it happen; vet the entity to make sure they know what they're doing
 - viii. VEIC wants to actually run a PPESCO and wants to work with people in other jurisdictions and help them set up a program (consulting basis to help them figure out how to do it)
- h. Use of Program-Related Investment and Public Pension Funds
 - i. VEIC doesn't have the answer to this question - this is part of the work they'll be doing over the next year - any entity that wants to roll it out needs a source of capital, so it could come from anywhere
 - ii. work with another entity who is the source of capital and financial partner/engine in the PPESCO and you're going out into the market hand-in-hand (i.e. local bank)

- iii. Does all the money sit within the PPESCO? Or does it sit within a partner? This is at the next level down of how you would execute those two strategies is to be determined
- iv. A lot of interest in smaller projects - since it seems like the PPESCO model is catered for projects that "fall through the cracks"
- v. From a business point of view, you're trying to address the gap in the market

9. Influence of Regional Planning Commissions (RPC)⁹

- a. RPCs are involved but have limited effect, as it is often more difficult to assert political influence in larger towns that have their own planners. This leaves them to serve mostly smaller towns which can't afford planners.
- b. "What is FRCOG's perspective on assuming and assisting with project aggregation?"
 - i. *"You are correct that our role at the FRCOG was as aggregator and facilitator of the RFQ and ESCO selection process. [The town agent] helped us negotiate template contracts for three stages of local engagement with the ESCO – preliminary energy audit, investment grade audit and energy management services contracts – and we brought in UniBank to teach local officials how to finance energy savings performance contracts. At that point, the plan was for towns to "fly" on their own with unique projects and for our chosen ESCO to work concurrently with multiple towns and regional school districts to keep them all moving forward at the same pace so that a region-wide economy of scale could be realized, benefiting all involved. In reality, I had to stay involved and deal with issues that arose during the project, many of which could have been handled by better ESCO-town communication."* - Bob Dean, FRCOG
- c. "How would they get paid? Need to be paid?"
 - i. FRCOG was not paid at all - rather, they are compensated through the yearly assessment to their member towns (which gives them the flexibility to take on these types of projects with no funding source attached)
 - ii. Upside is that doing so builds goodwill and trust
 - iii. Downside is that this facilitation and aggregation role can get costly over time:
 - 1. *"We can't afford to do a lot of projects like this without being compensated. Our towns are constantly wanting their budget assessment to be reduced and for our programs to pay for themselves through user fees."* - Bob Dean, FRCOG
 - iv. *"The cost of advertising the RFQ was paid through our regular budget funded by town assessments. We paid for the services of our technical consultant... and the financing report from UniBank with grant funds from the Commonwealth through the District Local Technical Assistance (DLTA) fund that DHCD administers. It's funding for the RPAs to work with towns on regionalization projects."* - Bob Dean, FRCOG
 - v. Suggestions that a direct contract might be necessary to involve RPCs in a way that gets them to take on meaningful parts of an effort
 - 1. Other option is to get the project savings to fund the project, which may or may not be politically feasible given the reduced amount of projects that would be financially viable as a result
 - vi. Another suggestion that state funding might be one way to compensate RPCs
 - 1. *"One could make an argument that it's good public policy for the state to appropriate money to help pay the costs of making municipal energy savings"*

⁹ Based on email exchange with Bob Dean at the Franklin Regional Council of Governments (FRCOG)

improvements happen. Call it transition funding, feasibility funding, or whatever the most fundable label would be in NH” - Bob Dean, FRCOG

10. Interview with the City of Concord Purchasing Manager - Doug Ross

- a. Engaged two different ESCOs – both were hired as the result of an RFP process
 - i. Hired ESCO #1 to come in and do two phases
 - ii. Ice arena upgrades (phase 1)
 - iii. Lighting upgrades, motor improvements, small boilers (phase 2)
 - iv. Anti-idling devices on vehicles, upgrading lighting, upgraded all of their pedestrian crosswalk signals to LEDs, four domestic solar hot water systems on city buildings, upgraded HVAC system in one of their fire stations (phase 3)
 - v. Boiler replacement / conversion from #2 fuel oil to natural gas
- b. On board to do the next two phases, but they could not reach agreement on terms and conditions
 - i. Very high mark-up – ESCO #1 would not hold previous markup levels going forward
 - ii. Town went back out to bid and hired ESCO #2 for Phase 3 (implementing the EECBG grants, one from the feds and several others from OEP)

Lessons Learned

- c. Process and implementation
 - i. Have a project manager on the side of the municipality that knows the energy services business well
 - ii. Had one internal project manager, also hired on an external project manager
 - 1. External – assisted with putting together the RFP, evaluating the proposals, working with them on the contract terms and conditions, overseeing the projects from a 50,000 ft view
 - a. In the range of \$45,000 for Phase 1 and 2, spread out over a year and a half to two years
 - b. Need someone who understands how ESCOs work and resolved a number of outstanding issues
 - 2. Internal – there to assist the external project manager; “boots-on-the-ground” out with contractor – making sure they’re showing up, if they run into any issues to be able to address it; if there’s a contractual issue, performance issue etc. to coordinate with the external project manager
- d. Financing
 - i. First two phases were all bonded funds (City funds)
 - ii. Phase 3 they just completed was mostly EECBG funds
 - iii. Approval – based on the Investment Grade Audit, they could come back to the City Council and say what it would cost, what the guaranteed savings would be, and the ROI
- e. The work they had done in aggregate had to have an ROI in ten years or less
 - i. Phase 1&2 - \$1.79 million
 - ii. Phase 3 - \$435,500
 - iii. Phase 4 – haven’t signed anything yet, but estimates that it would be approximately \$550,000

11. Blue Hill Capital Partners - Interview with Joyce Ferris

- a. Fundamental investment strategy that they use – funding service businesses to enable them to provide efficiency as a service
 - i. It's an iteration of the ESCO model
- b. Investing they're doing is not providing capital to property owners themselves – find that people want either loans or grants in the public/non-profit sector
 - i. They work often with specific types of property owners:
 - 1. Higher education – which are similar to municipalities
 - 2. K-12
 - 3. Open to other types
- c. Projects: Four underway in Pennsylvania on college campuses (Drexler)
 - i. College campus science buildings are by far the largest amounts of energy used per square foot
 - ii. Working with development partner that has done all the engineering and is providing a project design
 - iii. 10 year energy services agreement with Drexler, where all the upgrading of their building is fully funded out of the savings
 - iv. Findings is that all clients have some sensitivity to debt – yet it varies depending on the accounting structure used
 - 1. While a typical ESCO contract would be treated as debt or loan, the contractual structure developed by *Transcend Equity* (which has been used in commercial real estate) is used to overcome that issue – the investor is simply poised to take more risk to lease equipment to clients, thereby alleviating pressure on their clients' books
- d. Drexel University Project
 - i. Renovation underway for an existing building. They hired architects and engineers to do so but they needed to move people into a different space and started running into budget pressure. Looked like they would need to eliminate the upgrades to energy equipment. So BHCP stepped in and suggested that they fund the extra increment to go from 70% to 100% capitalization
- e. Security
 - i. They will still fund a wide range of modifications, including building envelope improvements, even though there may not necessarily be assets to set aside in the case of default; BHCP has higher risk tolerance
 - ii. They base their investments on where they can *capture the most savings* and what will allow them to deploy the *maximum amount of capital possible*
 - iii. Baseline energy consumption models are established by a partner
- f. Drexler Science Building Renovation
 - i. BHCP is paying for work to bring building come up to code
 - ii. Will get money back by adding efficiency equipment that will reduce the budget of what they were initially planning to do
 - 1. Can go as low as \$500,000 using this model
- g. Community College Project – outdoor lighting retrofit as a service
 - i. Ability to save over 50% energy and create tremendous operational savings
 - 1. Price point of LED's is good – price dropping and quality increasing
 - 2. Big opportunity to retrofit projects
 - ii. In this case, the college that they're working with will be retrofitting all fixtures and achieve savings of over 65%

- iii. Benefit is that the project can be constructed at any time
- h. Looking at projects as small as \$200,000 – that’s also working with another project development partner who is focused on nothing but outdoor lighting as a service
 - i. See big opportunity for creating new business and investment models for projects under \$1MM
- i. Financial Criteria
 - i. What can they do that is modular yet deep? (deep meaning going beyond a 2 year payback)
 - ii. Want to invest as much capital as they can and perhaps have a lower appetite
 - iii. ROI is tied to risk and not volume
 - iv. Risk - Due to certain regulations that are poised to come out somewhat soon (did not get the name), leases may be treated more like debt – (Converging US Accounting Rules with International Accounting Rules) – operating leases which have typically been listed off the balance sheet may no longer be allowed to be listed as off the balance sheet
- j. Good candidate facilities
 - i. REC centers, municipal parking lots, K-12,
 - ii. Lighting model is a service contract – BHP is taking a risk that the equipment performs to the standard advertised and takes responsibility for servicing if it breaks down
- k. Terms and Conditions
 - i. Any time there is any installation involved, they abandon the equipment in place – essentially, they cannot sell it back to them and so they walk away from the ownership responsibility
 - ii. They are always asking:
 1. What’s the right risk allocation between the service provider and property owner?
 2. What are they appropriate returns to the investor once you’ve accounted for it?
- l. Geographic Focus
 - i. Currently based out of Philadelphia and doing Pennsylvania projects
 - ii. However, by 2013 they expect to be in a position to do similar projects in other states and they are naturally gravitating towards New England
 1. Massachusetts and New Hampshire are strong leads at the moment
 2. In the process of lining up partner lighting companies, engineering firms, and contractors to do the work

Appendix D: Example documents (RFPs, etc.)

There are examples of municipalities that have aggregated energy efficiency projects to make the total project cost more financially interesting to traditional ESCOs. These have been done by regional planning organizations in Massachusetts, and the RFQs they issued for ESCO bids are referenced below and provided as a separate attachment.

- Metropolitan Area Planning Council RFQ for ESCO Services
Contact: Helen Aki, Energy Services Coordinator, 617- 451-2770 ext. 2054, HAki@mapc.org
- Merrimack Valley Planning Council RFQ for ESCO Services
Contact: Dennis DiZoglio, Executive Director, 978-374-0519 ext.12, DDiZoglio@mvpc.org
- Franklin Council of Governments RFQ for ESCO Services
Contact: Robert Dean, Director of Regional Services, (413) 774-3167 ext. 108, BDean@frcog.org
- Vermont Energy Investment Corporation PPESCO Proposal
Contact: Dan Quinlan, Managing Consultant, 802-488-7677, dquinlan@veic.org
- Self-funded Energy Savings Performance Contracting Programs