How to Implement an Energy Savings Improvement Plan
Sustainable Jersey How-To Guide, V.2

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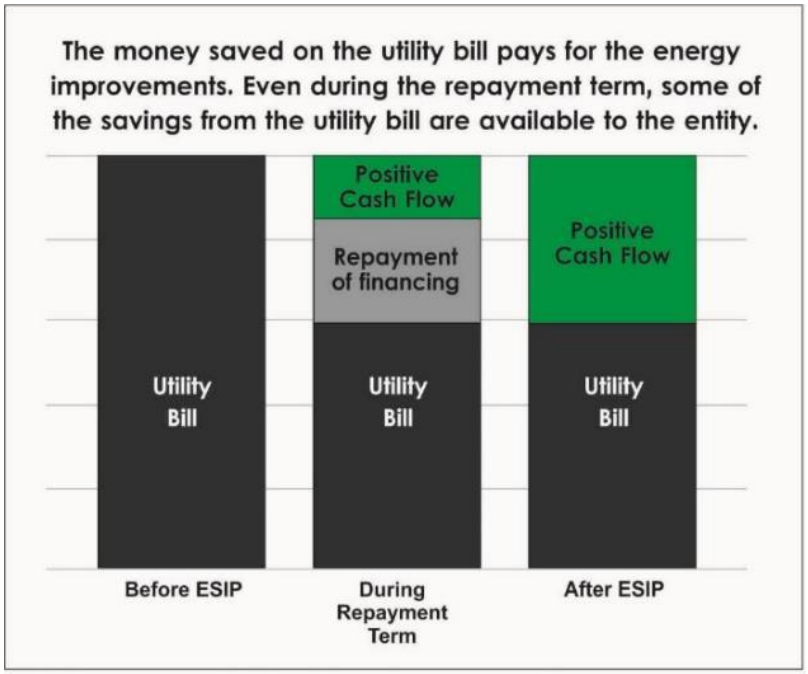
Introduction

Energy efficiency is one of the best ways public institutions can save money and tax dollars. It can also be a way for the local school district or municipality to 'lead by example' demonstrating the health, economic, and environmental benefits of energy efficient classrooms, offices, police stations, recreation centers, and other local government facilities. However, to realize savings from energy efficiency it is necessary to first come up with capital to pay for building and equipment upgrades. Even when the savings greatly outweigh the costs over the lifetime of the upgrades, these upfront costs often present a significant obstacle to moving forward. This document is intended to help local governments implement an Energy Savings Improvement Program (ESIP) that is designed specifically to overcome this hurdle.

ESIP is a financing mechanism that allows retrofitting public facilities with energy conservation measures without having to budget upfront for the new capital investment. The ESIP method of financing energy improvements is a way for local government units to finance much needed new energy efficient infrastructure at no cost to the taxpayer.

In 2009, the New Jersey legislature approved ESIPs as an alternate method for New Jersey local government units to finance the implementation of energy conservation measures (P.L. 2009, c.4). On September 21, 2012, Governor Christie signed (P.L. 2012, Chapter 55) which further defined the ESIP process as a type of "performance contract," which means that the project is paid for by the energy savings as illustrated in the chart below.



Adapted from a chart created by SmartWatt. https://www.smartwatt.com/what-is-a-performance-contract/

In essence, by using ESIP financing, the future value of energy savings is leveraged to pay for the upfront project costs. The law specifically allows boards of education, counties, municipalities, housing authorities, water and wastewater authorities, colleges, universities, and other public entities to enter into contracts for up to 15 years (up to 20 years for projects containing combined heat and power (CHP) components). This allows local government units to finance building energy upgrades in a manner that ensures that annual payments are lower than the cost savings projected from the energy conservation measures. This financing mechanism makes ESIP projects cash flow positive in year one, and every year thereafter.

The ESIP law allows local government units to use "Energy Savings Obligations" as the financing method for the costs (capital as well as soft costs) of these energy conservation measures. This means that the energy conservation measures are funded based on the anticipated energy cost savings over the life of the equipment. Energy savings obligations are not considered "new general obligation debt" of a local government unit and do not count against debt limits or require voter approval. In particular, this means that schools do not need to have ESIPs approved via referendum.

Implementation of the ESIP starts with a Local Government Energy Audit and is finalized when the last verification of energy savings and commissioning of equipment is complete. The average ESIP process takes 24-36 months.

ESIP and New Jersey's Clean Energy Program (NJCEP)

In addition to energy savings, there are significant incentives available through state and federal sources that can be layered into the financial package to offset repayment of the obligations. In particular, New Jersey's Clean Energy Program offers numerous programs/incentives that can reduce the cost of energy efficiency equipment and upgrades for local government units. These programs are highlighted in the chart on the right, showing the complementarity between an ESIP and NJCEP programs.

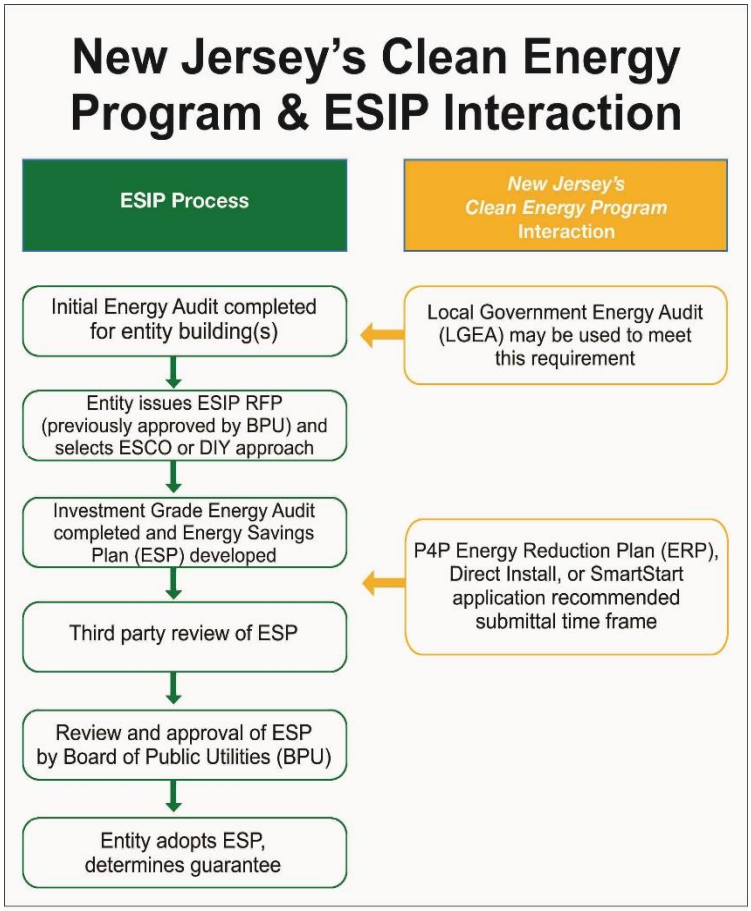


Image source: njcleanenergy.com/commercial-industrial/programs/energy-savings-improvement-program

Overview of the ESIP Process

Energy Audit

- Local Government Energy Audit (LGEA)
- The local government unit must submit 14 months of utility bills as part of the LGEA application process

Determine Method of Implementation

- Option A: Energy Service Company (ESCO)
  - Requires competitive RFP to hire an ESCO from a prequalified listed on the DPMC website at: https://www.state.nj.us/treasury/dpmc/contract_search.shtml
- Option B: Do it Yourself (DIY)
  - Local government unit can hire a consultant or use in-house capacity to lead the ESIP process
- Option C: Hybrid combination of the ESCO and DIY Plans

Selection of an ESCO

- Resolution from local government unit allowing for an RFP to be issued for an ESCO
- RFP sent to the Board of Public Utilities for review at least 14 days before being issued
- RFP issued; local government unit advertises RFP to all DPMC-listed ESCOs
- No sooner than ten days after advertisement, local government unit hosts a mandatory pre-proposal bid meeting and facilities walk through inspection
- Evaluation of ESCO bid responses and possible ESCO interviews
- Local government unit selects an ESCO and adopts a resolution accepting the ESCO investment grade audit contract

Investment Grade Audit and Drafting of the Energy Savings Plan

- Investment grade audit completed and a list of energy conservation measures compiled
- Applications made to NJCEP for incentive/rebates that apply to the project
  - Direct Install, Smart Start, Pay for Performance
- Investment grade audit is verified by an independent third-party
  - For larger projects, an RFP may be advisable for selecting a verification service

Approval of the Energy Savings Plan

- Energy Savings Plan sent to Board of Public Utilities for approval
- Local government unit adopts resolution accepting the Energy Savings Plan
- Local government unit and ESCO (or engineer/consultant for DIY option) execute final ESIP Agreement
- If desired, a Guarantee of Energy Savings Contract offered by the ESCO is signed

Financing via Refunding Bond or Lease Purchase Agreement

- Neither financing mechanism adds to the debt load of the local government unit
- Neither financing mechanism requires a referendum
- Refunding Bonds require an ordinance and a bond rating
- Lease Financing Agreements only require an RFP if a private lender is being used

Construction

- Final engineering and design completed
- Subcontractors procured pursuant to public bidding requirements
- ESCO, engineer or DIY manages all aspects of construction and installation as the prime contractor

Commissioning

- Commissioning (testing to verify energy savings and proper operation) at completion of construction
- Verification is conducted by a third-party
- Local government unit conducts M&V (measurement and verification) at one year operational date

Local Government Energy Audit

The first step in implementing an ESIP is the completion of an energy audit through NJCEP's Local Government Energy Audit (LGEA) program. NJCEP subsidizes 100% of the audit costs, subject to an incentive cap of $100,000 per entity, per fiscal year. Exceptions to the incentive cap are possible, up to $300,000.

The goal of the energy audit is to provide local government units with information on how their facilities use energy. The LGEA report will identify energy conservation measures (ECMs) that can reduce energy use. The LGEA report will also identify relevant NJCEP incentive programs that will help put local government units in a position to implement the recommended ECMs with incentives from New Jersey's Clean Energy Program.

The LGEA program is open to the following entities that contribute to the Societal Benefits Charge (SBC) fund through their gas and/or electric utilities:

- State contracting agency per N.J.S.A. 52:34-35
- Public agency per N.J.S.A. 52:35A-1
- Local governments per Local Public Contracts Law (N.J.S.A. 40A:11-1)
- Local governments per Public School Contracts Law (N.J.S.A. 18A:18A-1)
- County colleges per County College Contracts Law (N.J.S.A.18A:64A-25.1)
- NJ state colleges or universities per State College Contracts Law (N.J.S.A.18A:64-52)
- Non-profit charitable organizations per Section 501(c)(3) of the Internal Revenue Code

Typical building types covered by the LGEA include but are not limited to: offices, courtrooms, town halls, police/fire stations, sanitation buildings, transportation structures, water treatment facilities, schools, gymnasiums, and community centers. All local governments, New Jersey state colleges or state universities, and non-profit agencies exempt from federal taxation under section 501(c)(3) of the Internal Revenue Code that are located within the service territory of at least one of the state's regulated utilities are eligible.

Local government units may apply for an energy audit for buildings that they own, although a building may be eligible if the local government unit leases the building and provides supporting documentation from the building owner authorizing the energy audit before it is performed.

Buildings must demonstrate an average peak demand of 200kW or greater in the most recent 12 months of electric utility bills (inclusive of all accounts in the building) in order to participate in the LGEA program. Buildings that do not meet this requirement will be recommended to apply for the Direct Install program, unless an appropriate waiver is submitted and approved by the Program Manager. The Program Manager may grant exceptions to the kW requirement, on a per building basis, if the local government unit can demonstrate they meet at least one of the following criteria:

- ESIP is an anticipated source of funding
- Master or campus metering arrangement on-site, where demand of any one building is unknown
- The local government unit is unable to commit to the turnkey Direct Install program process due to scope, facility type, measure type (e.g. insulation, windows, etc.), financial constraints, limitations by board or contracting authority, desire to understand energy profile of all buildings prior to prioritizing resources, etc.
- Review and approval by the NJBPU (additional information may be requested) on a case-by-case basis.

Since only buildings that have completed the LGEA will be eligible for ESIP, it is critically important to include all of the facilities of a local government unit in the LGEA application to achieve the most efficient use of the ESIP process.

The LGEA program is available to buildings never previously audited under the program, as well as buildings that have received an audit more than three years earlier (measured from the audit report approval date). All program requirements must be met in order for an entity to qualify for a second energy audit.

The local government unit will submit one application per entity (all buildings together in one application). Typically the process for an LGEA takes 4-8 months for completion after the application has been approved. The timeframe is dependent on participant participation, size of audit and quality of the application submission, and site scheduling ability. The LGEA application requires the following information: building type, square footage, utility account information and associated bills, and other applicable energy usage information for each building to be audited. The local government unit is responsible for including 14 months of utility bills for each account in each building in the LGEA application. Not including the utility bills will significantly delay the processing of the LGEA application.

When a local government unit is enrolled in LGEA and participating in any NJCEP equipment incentive programs at the same time for the same facility(ies), the Program Manager will assess the impact that the work may have on the energy audit and require the local government unit to take one of the following actions, depending on the level of impact:

- Proceed with energy audit and equipment upgrades (minimal impact)
- Complete equipment upgrades prior to proceeding with energy audit process or vice versa (moderate impact)
- Cancel energy audit application (significant impact)

If initial program eligibility and application requirements have been met and the local government unit is approved to have an LGEA performed, the Program Manager will issue an Approval Letter to the local government unit.

The energy audit scope of work must be consistent with ASHRAE Level II audit (Energy Survey and Analysis), except for lighting which follows ASHRAE Level III (Detailed Analysis of Capital Intensive Modifications). Smaller facilities under 200kW average peak demand, with a legitimate waiver, may receive a walk through audit (ASHRAE Level I). A high level assessment of on-site generation potential will also be conducted for each site that is approved for an audit. This assessment will be considered an add-on scope to the energy audit and cannot be a standalone study.

The Program Manager will perform the audit, prepare a draft audit report, and discuss the audit findings and next steps for implementing measures recommended in the report with the local government unit. The LGEA report will identify the current level of energy use of all facilities.

The LGEA will, through a thorough review of each facility, identify the specific energy conservation measures that can be undertaken. Energy conservation measures (ECMs) are defined as improvements that result in reduced energy use, including, but not limited to: installation of energy efficient equipment; demand response equipment; combined heat and power systems; facilities for the production of renewable energy; water conservation measure fixtures or facilities; building envelope improvements that are part of an energy savings improvement plan; and related control systems.

The LGEA draft audit report will provide a narrative for each building's historic energy use, facility and equipment descriptions, an equipment inventory, and ECM opportunities identified. It also provides estimations of installation cost, energy savings, annual energy cost savings, any rebates/incentives available through NJCEP, and payback calculations.

If the local government unit does not identify any revisions for the LGEA draft report within a 30 day period, a final report will be issued. A copy of the final audit report will be posted on the NJCEP website. Getting an LGEA does not obligate the local government unit to perform the recommended measures or to apply for an ESIP or any other program. Visit the NJCEP website for further information about LGEA and to download the LGEA application workbook: http://www.NJCleanEnergy.com/LGEA

Method of Implementation

Once the LGEA has been completed and it has been determined that energy conservation measures will be implemented, the local government unit can proceed in one of three ways: the ESCO Option; the DIY Option; or the Hybrid Option, which uses parts of both previous options. The decision as to which method to use should be based on an understanding of each option and, to a certain extent, the availability of local officials to be involved in the process, as it will be more time consuming for local officials to use the second or third option. Regardless of method of implementation selected, all contractors, including professional services, must be classified with the NJ Treasury Department Division of Property Management and Construction.

CONTRACTING OPTIONS AVAILABLE

Plan A: ESCO Option

- The local government unit must use public bidding or competitive contracting process to award a contract to a firm (ESCO) to develop and manage construction of improvements.
- Contract award is for "most advantageous price and other factors considered process" or "lowest responsible bidder."
    - The ESCO is a single contractor that develops and manages the process.
    - The ESCO is required to offer an optional energy savings guarantee.

Plan B: DIY Option

The local government unit must:

- Utilize in house expertise or hire an energy consultant to develop the Energy Savings Plan.
- Develop specifications for the project and bid the job (or hire professionals to provide that service).
- Rely on industry standard or built-in verification process to assure savings.

Plan C: Hybrid Model (combination of ESCO Option and DIY Option)

The local government unit must:

- Hire an Architect or Mechanical Engineer to work with ESCO on project.
- Develop a plan that the professional will put out to bid as an RFP.
- Allow the professional to take the entity (local government or school) through the interview process.
- Allow the professional to be the liaison with the ESCO throughout the project.

Considerations Regarding Each ESIP Implementation Option

A. The ESCO Option. Hiring an ESCO will result in the local government unit using one firm to be responsible for virtually all of the required work associated with completion of the ESIP (with the exception of the LGEA and subsequent verification work). The ESCO can provide the local government unit a holistic approach, assuming responsibility for the entire process, from preparation of the Energy Savings Plan (ESP), to design and preparation of construction plan documents and bid specifications. The ESCO serves as a general contractor that will contract with and oversee subcontractors hired through the bidding process. The ESCO will offer an optional energy savings guarantee. At the option of the local government unit, the ESCO can also assist with identifying funding options. However, it should be noted that it is still the responsibility of the local government unit to repay those funding obligations; so, it is advisable to be prudent when exploring financing options and to make sure that all avenues are reviewed in order to get the best financing package available. The RFP process is covered in more detail in the Selection of an Energy Services Company section of this document below.

B. The DIY Option. In the DIY method, the local government unit takes the lead. The local government unit may utilize in-house expertise; frequently, however, local government units retain an engineer (or an architectural firm with engineering capabilities). Retaining an engineer to assist with the ESIP authorizes the engineering firm to be responsible for procurement of services from different organizations to perform various elements of an ESIP including preparation of the Energy Savings Plan, development of construction plans, bids and specifications, making recommendations regarding the award of construction contracts, and managing the construction process. Local government units that choose to use the DIY Option are responsible for applying for NJCEP or other incentives and securing financing for the project.

C. The Hybrid Option. The Hybrid Option is a combination of the first two options. If the local government unit chooses, it can retain the services of an engineering firm to be responsible to oversee the RFP for the ESCO. The engineering firm would act on the local government unit's behalf to supervise the ESCO's work throughout the process. When the local government unit uses the Hybrid Option, which essentially mixes ESCOs and other services, there is the potential for professional or monetary conflicts of interest. Local government units should ensure that contracting relationships do not create conflicts of interest or provide potential monetary incentives that go beyond the contract with the local government unit. For example, if the local government unit's architect or engineer is determined to be the best qualified to prepare design specifications based on an energy savings plan prepared by an ESCO, the local government unit must hire and pay the professional; the professional cannot be hired by and be contractually responsible to an ESCO. In the Hybrid Option, the ESCO offers an optional Energy Savings Guarantee to the local government unit, as in the ESCO Option.

Summary of ESIP Implementation Options

Regardless of which option is used, independent third-party verifications must be completed periodically as required by law. Under all contracting models, it is important that contractors performing a range of services do not have conflicts (e.g. the firm that develops plans and specifications cannot bid on the work, the firm that completes the installation cannot conduct the final system verification, etc.).

Selection of Energy Services Company

In order to select an Energy Services Company (ESCO), a Request for Proposal (RFP) is circulated publicly. ESCOs must be hired through the competitive contracting process and cannot be hired through the professional services exception. See Appendix B for sample Evaluation of Proposals.

Preparing the RFP

In order to facilitate creating the RFP, a sample Request for Proposal is available on the NJCEP ESIP page: http://www.njcleanenergy.com/commercial-industrial/programs/energy-savings-improvement-program

A local government unit acting under the authority of ESIP must include in the RFP a statement indicating which option of ESIP they intend to complete; the use of an ESCO, a "Do-it-Yourself Method" ("DIY"), or a combination of the two. A change in project control after the RFP closing date will be cause for immediate rejection and disqualification for any potential NJCEP incentives.

Local government units should be sure that the RFP is a fair and unbiased document. In other words, the RFP cannot give an unfair advantage to a firm that manufactures digital controls, for example, by requiring a specific type of digital control. This requirement could give an unfair pricing advantage to the firm that manufactures the controls since they could bid a lower price for the equipment. Other firms that are required to provide those controls would not be as well-positioned to purchase and install the same equipment.

Firms that respond to the RFP must have access to the LGEA Report as that will be the starting point for ascertaining the potential energy conservation measures (ECMs) to include in the plan. More specifically, the RFP will include a list of the ECMs that were identified in the original LGEA. However, when structuring the RFP response, the ESCO is not limited to the energy conservation measures that are listed in the initial LGEA Report.

In the interest of an open and transparent bidding process, it is a requirement of the BPU that all proposers must attend a pre-proposal bid meeting. This meeting must be advertised at least ten (10) days prior to the day it occurs. An optional facility inspection visit will occur immediately

following the Pre-Proposal Conference. Follow-up facility inspections may be scheduled at times that are mutually convenient to Proposers and local government unit representatives. It is mandatory that a Proposer conduct at least one facility inspection to be considered an eligible Proposer responding to the RFP.

The RFP should disclose the rating or ranking methodology that will be used to evaluate the bids. The criteria for rating and ranking the bids should include the following five factors:

(1) Company Overview and Qualifications
(2) Approach to Energy Savings Plan Development and Implementation
(3) Ability to Implement the Project
(4) Project Comprehensibility and Energy Savings Projections
(5) ESCO Fees Proposal

A sample RFP evaluation rubric is provided in Appendix B.

Issuing the RFP

The local government unit must have the RFP reviewed and approved by the BPU prior to publishing the solicitation. The BPU has fourteen (14) days to review and approve the RFP. If no response is received in fourteen days, the RFP format is considered approved.

In order for the ESIP to be successful, it is important that the process allow all potential bidders a level playing field. In addition to the regular RFP advertising, local government units are advised to also send the RFP to the full list of Division of Property Management and Construction (DPMC) qualified ESCOs. The full list of current DPMC qualified Energy Services Companies can be found on the NJ Treasury Department website: www.state.nj.us/treasury/dpmc/contract_search.shtml (Enter Energy Services/ESCO on the “Contractors by Specialty” menu for the current list of approved contractors.)

Public Bid Opening

Public bid openings shall be held on the due date of the proposal submissions. The local government unit shall announce the name of the bidder and the total dollar amount. After award of a contract, all proposals received will be made available by the owner for public inspection. Rejection of bids by the local government unit must be conducted in accordance with the appropriate sections of the applicable legislation, as stated in Title 40 A:11- 13.2. Additionally all proposals must be returned to the respective ESCOs upon rejection. A rejection of a proposal by BPU staff is based upon a failure to follow procedures and guidelines. Appeals should be directed to the New Jersey Superior Court Appellate Division.

Bid Evaluation

Once bids are received, they should be thoroughly reviewed using the evaluation method disclosed as part of the RFP. This evaluation is most likely the biggest challenge of the ESIP process. Because the evaluation of the bids is not strictly a "low bidder" selection, it is recommended that the local government unit use all available expertise to evaluate the bids.

It is important when reviewing the proposals to closely evaluate the reasonableness of the projects that are proposed, the likely energy savings, and the cost and related services being proposed by the ESCO. Reviewers should keep in mind that the projects described in the proposal are not necessarily the final projects that will be included in the ESIP.

Development of the Energy Savings Plan

After the local government unit adopts a resolution appointing the ESCO firm and the contract is approved, the development of the Energy Savings Plan (ESP) can begin. The purpose of the Energy Savings Plan is to match the most efficient energy conservation measures with the respective savings to show that the total project costs, which include design and construction, as well as professional expenses, are offset by energy savings over the borrowing term.

Energy savings are defined as "a measured reduction in fuel, energy, operating or maintenance costs resulting from the implementation of one or more energy conservation measures when compared with an established baseline of previous fuel or other energy expenses as a result of equipment installed or services performed as part of an energy savings plan" (Local Finance Notice, 2009-11, available online: www.nj.gov/dca/divisions/dlgs/lfns/09/2009-11.doc). Calculations of energy savings must be made in accordance with protocols adopted by the BPU, which detail specific acceptable projections for anticipated increases in energy costs for the duration of the term of the ESIP.

The ESCO or engineer retained by the local government unit will have knowledge of these measurement requirements. The calculation should also include all applicable state and federal rebates and tax credits, but shall not include the cost of verifying energy savings. An important factor to consider is that if the local government unit is replacing outdated equipment, reduced costs for operation and maintenance for the old equipment can be anticipated as a savings. Avoided capital costs, however, cannot be included as savings.

Investment Grade Audit

During this phase of the ESIP process, a more detailed audit is performed on each building to identify potential capital-intensive projects. This is known as an "investment grade audit." The process starts with the ECMs that were identified in the LGEA, and involves more detailed field

data gathering and engineering analysis. The results of this audit are developed into the Energy Savings Plan.

The ESP should provide enough detailed project cost and savings information to allow decision makers to realize a high level of confidence sufficient for major capital investment decisions. A checklist of items to include in the ESP is as follows:

- Results of the investment grade energy audit
- Description of the energy conservation measures that will comprise the plan (a list of possible ECMs is provided in Appendix A)
- Cost of each energy conservation measure
- Details of any available economic offset, such as NJCEP incentives/funding, for each energy conservation measure
- Estimate of greenhouse gas reductions resulting from those energy savings
- Identification of all design and compliance issues and identification of who will provide these services
- Assessment of risks involved in the successful implementation of the plan
- Identification of the eligibility for, and costs and revenues associated with, the PJM Independent System Operator for demand response and curtailable service activities
- Maintenance requirements necessary to ensure continued energy savings and a description of how maintenance services will be provided
- Cost for providing a guarantee of energy savings once the projects are implemented

Energy Savings Plans must insure that:

- There is no negative cash flow; each year of the project must be cash positive
- There is no Capital Cost Avoidance (except on a very limited basis)
- There is no use of SRECs in cost savings calculations
- The maximum payback period is 15 years, except for a plan containing a combined heat and power (CHP) component, which has a maximum 20 year payback period

Measures that Do Not Reduce Energy Consumption

The local government unit may consider implementing capital projects that do not reduce energy use as part of the ESIP. For example, part of an Energy Savings Plan might include a boiler replacement in an older school building as well as the replacement of the ventilation system and the installation of a digital control system. At the same time, it could be economical for a local government unit to consider other capital projects like air conditioning, an improvement that does not reduce energy use, but may be a useful and efficient improvement for the facility. In this example, the law permits “energy-related capital improvements” that do not reduce energy usage to be included in an energy savings improvement plan. If these items are prerequisites of ECMs, they may be funded with the ESIP. If the measures are not prerequisites of the ECMs, the cost of these “additional improvements” cannot exceed fifteen percent of the total project costs,

and must be paid through other appropriations (i.e., bonds or capital improvement funds) or operational budget surplus.

By including other capital projects as part of the ESIP, local government units can save money through economies of scale. For example, certain architectural, engineering, and permit fees could be saved as they might otherwise be duplicated if two separate projects were to be completed. Likewise, site preparation and construction costs could be lowered if projects are completed simultaneously. It is not the intent of the ESIP law to prevent the financing of such capital improvements through otherwise authorized means. It is mandatory however, that the funding source as well as the financial record-keeping for other capital projects be maintained separately.

Inclusion of Renewable Energy

An ESIP can also include installation of renewable energy facilities, such as solar panels. Under an energy savings plan, solar panels can be installed and the reduced cost of energy reflected as savings. Alternatively, a power purchase agreement executed pursuant to Chapter 83 of P.L. 2008 can be included in the calculations of energy savings. Local Finance Notice 2009-10 (available online: https://www.nj.gov/dca/divisions/dlgs/lfns/09/2009-10.doc) reviews Power Purchase Agreements contracting under Chapter 83. The revenue generated from the sale of Solar Renewable Energy Credits (SRECs) cannot be included as an offset in revenue when developing the Energy Savings Plan.

The Energy Savings Plan should be structured carefully to ensure the reasonableness of revenue offsets that are anticipated. Allowable revenue offsets are simple: energy savings, maintenance and operation savings, state and federal funding sources. Cash-flow savings must be positive in each year. The BPU will withhold funding incentives to local government units (from both state and federal sources) if an ESIP is not properly executed.

Verification of the Energy Savings Plan

Once the Energy Savings Plan is developed, and prior to its adoption by the governing body, it must be verified by an independent third-party that will certify that the plan savings were properly calculated pursuant to BPU protocols. The firm that verifies the plan cannot be the ESCO or the firm that developed the Energy Savings Plan.

The verification includes a thorough review of each proposed energy conservation measure included in the plan. The plan itself must include, on an individual basis: each project to be implemented, as well as its associated cost; the anticipated energy savings; and any funding from outside sources such as grants and NJCEP rebates or incentives. This calculation will result in a net cost before borrowing and it must be shown on an annual basis.

The final (and most important) factor to be verified is the net savings that will be achieved after all borrowing costs are considered. The calculations must show that the costs (including acquisition, installation, and financing) of the energy conservation measures will be offset by energy savings as well as by grants or other related funding and will result in a net savings to the local government unit on an annual basis. Savings must be positive in each year.

Adoption of the Energy Savings Plan

Prior to the adoption of the Energy Savings Plan, it must be approved by the Board of Public Utilities (BPU). The BPU has fourteen (14) days to review the document. If no response is received in fourteen days, the contract is considered approved.

After the third-party verification is completed and the Energy Savings Plan is approved by the BPU, the governing body of the local government unit must formally adopt the plan. When adopting the plan, the local government unit must decide whether or not to acquire the energy savings guarantee as part of the ESIP.

Once the plan is adopted, it must be submitted to the BPU. The plan will be posted on the BPU website and must also be posted on the local government unit's website.

The Energy Savings Guarantee

Caution should be used when deciding whether to purchase the energy savings guarantee. First, the guarantee adds to the project cost, and second, there are a variety of potential factors that could cause the guarantee to be voided. One factor that could void the guarantee is not adhering to the required maintenance of equipment.

In the last twenty years, the technology of energy systems has evolved to the point that in many cases a guarantee may not be required. Technology advances as well as the requirement that the ESIP be verified three different times could obviate the need for a guarantee. Additionally, if savings are calculated in accordance with the BPU protocols, the system is installed properly, and the system operator maintains the system in accordance with specifications, a reliable outcome of energy savings can be achieved. If these elements are in place, the energy savings will accrue without the need for a guarantee. Local government units should carefully consider the need for a guarantee and measure its cost, given the verification requirements that are part of the process. However, the guarantee will, if properly structured, eliminate the possibility of any budgetary shortfall.

Completion of Financing

Projections for the financing of the ESIP usually begin during the RFP phase when projects are first being considered. During this phase, the local government unit has the initial list of possible energy conservation measures that can be undertaken and begins the review of the most efficient projects to consider. The total amount borrowed for the ESIP includes project design, construction, ESCO fee, as well as all applicable soft costs. The soft costs could include expenses such as financial advisor, bond counsel, local attorney, auditor, underwriting fee, bond rating, and other costs associated with the issuance of securities.

Costs Not Included in the ESIP Funding

Energy savings obligations shall not be used to finance maintenance, energy savings guarantees, or the required third-party verification of energy conservation measure guarantees. Energy savings obligations, however, may include the costs of an investment grade energy audit and the cost of verification of energy savings as part of adopting an energy savings plan or upon commissioning. While the audit and verification costs may be financed, they are not counted in the energy savings plan as a cost to be offset with savings.

As the local government unit moves forward with development of the Energy Savings Plan, repayment of the debt obligation is revised as various projects are considered. These projected calculations continue throughout the development of the Energy Savings Plan until the total anticipated value of energy saved equals or exceeds the costs associated with implementing the energy conservation measures. The law also provides that the cost of energy savings obligations may be treated as an element of the local government unit's utility budget, as it replaces energy costs.

Financing Options for ESIP

The ESIP can be financed using either refunding bonds or lease purchase agreements. Depending on market conditions at the time of financing, there are advantages and disadvantages to both options. The bond option takes longer to complete, but can result in lower costs; therefore both options should be examined prior to selecting a financing method. Because an ESIP does not authorize new costs or taxpayer obligations, refunding bonds are often used, as they will not affect debt limits, or in the case of a board of education, need voter approval.

Financing Options in a Nutshell

There are two commonly used options for financing an ESIP, a lease purchase agreement and a refunding bond. Repayments of these options can, by law, be classed as utility expenses in accounting, since they replace prior utility bills.

Refunding Bond Option

- Refunding bonds, which do not add to the debt load of the entity, are available through ESIP.
- Refunding bonds are likely to be less costly overall, but they require an ordinance, a public hearing, and approval by the Local Finance Board. Bonds for school districts require DOE "Other Capital" Project approval.
- A bond rating is required for this option.

Lease Purchase Agreements

- No ordinances are involved for approvals; however, the final price will likely include more financing charges overall than the Bond Option.
- The agreement can be entered into directly by the local government unit with the ESCO, other private financing party, or through a county improvement authority or the New Jersey Economic Development Authority.
- If a private funder holds the lease, a competitive process must be followed as required under the local government unit's procurement law.
- No bond rating required.

In both financing options, the maturity schedules for energy savings obligations must not exceed the estimated useful life of the individual energy conservation measures. The duration of the repayment term can commence on the date upon which construction and installation of the energy savings measures is completed.

Details of the Refunding Bond Option

For public schools, the NJ Department of Education (DOE) has concluded that debt financed ESIP projects are not covered by state aid for debt service as there is no new local debt being authorized. As a refunding bond, however, school energy savings obligations are eligible for coverage under the School Bond Reserve Fund. This fund enhances the bond rating of the obligations; it has nothing to do with any revenue commitment from the State. Finally, projects funded under an ESIP plan require DOE "Other Capital" Project approval.

If the bond option is used, the local government unit issues refunding bonds, which are normally only used if the local government unit refinances bonds previously issued with a higher interest rate. If this option is chosen, approval is needed from the Local Finance Board (LFB), a Division of the New Jersey Department of Community Affairs. The LFB meets on the second Wednesday of each month and the application must be submitted three weeks prior to the meeting.

Prior to receiving the LFB approval, the local government unit must start the process of adopting a refunding bond ordinance. The first step in that process is the introduction of a refunding bond ordinance. The introduction (only) must take place prior to the date of the LFB meeting. During the introduction, a date is set for at least ten (10) days later to hold a public hearing on the ordinance. Following the completion of the public hearing, the bond ordinance can be adopted. In the case of a municipality, the ordinance must be advertised after its adoption; twenty (20) days later it takes effect.

For New Jersey school districts, there is no need for advertising the ordinance after its adoption. The ordinance is effective following its adoption. In both cases, following the ordinance adoption, and after a bond rating and all disclosure documents are completed, the bonds can be sold; funds are received by the local government unit on the bond sale closing date. The closing date is approximately two weeks following the bond sale date.

If the local government unit is a school district, no referendum is required prior to introducing and adopting the refunding bond ordinance. This is the biggest advantage of the ESIP process for NJ school districts. Using refunding bonds to finance an ESIP can, depending on market conditions, result in the lowest net interest cost to the local government unit. New Jersey municipal bonds are generally good quality, relatively highly rated bonds, and those factors can result in lower interest rates than a lease obligation. There are potentially additional costs associated with the issuance of bonds; therefore fees from a bond counsel, local attorney, and rating agency could be higher if the refunding bond option is used. A cost analysis of current market interest rates as well as all borrowing fees should be completed and compared to the repayment projections for lease financing prior to choosing the method of financing.

Details of the Lease Purchase Financing Option

If a lease purchase financing option is used (after a thorough financial analysis is completed), the length of time it takes for the financing phase is shorter. When the lease purchasing option is used, there is no need for the issuance of refunding bonds and there is no approval required from the Local Finance Board. The agreement can be entered into directly by the local governing unit with the ESCO, other private financing party, or through a county improvement authority or the New Jersey Economic Development Authority. When a local governing unit enters into a lease with a private party that is not a governmental entity, or with the ESCO it has selected through competitive contracting, it must be done in accordance with a competitive process as required under the local government unit's procurement law.

Additionally, there is no bond rating required for the lease purchase option. In order to get the most advantageous financing rate, the local government unit should solicit bids from at least three banks. The local government unit should also include its "bank of record" as one of the respondents. No formal Official Statement is required to solicit a proposed interest rate, but a term sheet that lists all of the pertinent financial terms would assist prospective bidders with understanding the project to be financed. A sample term sheet is included below. When the term sheet is sent to the bidders, access to the local government unit's most recent financial audit should also be made available. Most likely this process would be completed electronically, and the local government unit's website could be referenced for access to the audit. As with the bond financing option, funds are available to the local government unit two weeks after the terms are finalized. The funds become available after the closing of the transaction when all of the pertinent documents are sign by the borrower as well as the lender.

Additional Requirements of ESIP Lease Purchase Agreements

1. Ownership of the energy savings equipment or improvements shall remain with the third-party financing entity until all lease payments have been made or other requirements of the financing documents for the satisfaction of the obligation are met. If improvements are made to facilities owned by the local government unit, the local government unit will have to enter into a ground lease of the facilities to be leased back to the local government unit.

2. The duration of a lease purchase agreement shall not exceed 15 years, except that the duration of a lease purchase agreement for a combined heat and power (CHP) or cogeneration project shall not exceed 20 years. CHP and cogeneration facilities are specialized types of energy conservation measures. The law supersedes the existing limit on lease purchase financing for these types of projects.

3. Any lease purchase agreement may contain a clause making it subject to the availability of sufficient funds as may be required to meet the extended obligation, or a non-substitution clause maintaining that if the agreement is terminated for non-appropriation, the contracting unit may not replace the leased equipment. While normal for these types of leases, the optional nature in the law permits the transaction attorney to negotiate them as terms of a lease agreement.

In both financing options, the maturity schedules for energy savings obligations must not exceed the estimated useful life of the individual energy conservation measures. The duration of the repayment term can commence on the date upon which construction and installation of the energy savings measures is completed.

Sample Term Sheet for Energy Savings Improvement Plan Financing

Note: information that is underlined in the sample below should be determined by the issuer prior to soliciting financing bids.

The Board of Education of the Borough of _____is soliciting bids for the lease financing of an Energy Savings Improvement Plan (ESIP). The projects to be financed consist of energy conservation measures which when implemented will generate energy savings equal to the lease payments of this bid.

Issuer: _____ Board of Education, _____County, New Jersey

Security: Equipment to be acquired as a result of the financing, see attached list.

Amount to be borrowed: $3,000,000

Repayment Terms:

The repayment term is 15 years.

The payments should be structured on a level annual basis

First payment: 9 months from the date of the closing of the transaction

Principal payments: annual

Interest payments: semi-annual

Interest Rate: Rates must be held for a period of sixty days following receipt of bid.

Anticipated closing date: January 15, 20__

Redemption: Issuer requests the terms of any prepayment penalty.

SAMPLE Summary of ESIP Financing

Construction costs:	$3,385,000	Average Repayment	($423,740)
Soft Costs	$1,450,000	Average Energy Savings	$438,764
Total Project Costs	$4,835,000	Rebate & Incentives Years 1 & 2 *	$300,000
		Gross Average Savings (No M&V)	$55,024
Borrowing Term 15 Years			
Interest Rate 3.50%		Annual M&V $20,000	
		Net Annual Savings $35,024	

Additional Assumptions:

30% Soft Costs including professional fees (ESCO and/or architect and engineering), financing costs and related soft costs

* Realized in first 2 years; amortization customized to match projected savings and incentive stream

Annual measurement & verification costs are needed if guarantee is selected. These costs cannot be financed but should be considered in cash flow.

New Jersey Local Unit
Sample Cash Flow Analysis for ESIP

Year	Annual Repayment	Annual Energy Savings	Energy Rebates and Incentives	Gross Annual Savings	Annual Measurement & Verification	Net Annual Savings	Financing and M&V Coverage
1	($619,225)	$305,000	$375,000	**$60,775**	$20,000	$40,775	106%
2	($488,475)	$320,250	$225,000	**$56,775**	$20,000	$36,775	107%
3	($281,750)	$336,263		**$54,513**	$20,000	$34,513	111%
4	($296,850)	$353,076		**$56,226**	$20,000	$36,226	111%
5	($316,250)	$370,729		**$54,479**	$20,000	$34,479	110%
6	($334,775)	$389,266		**$54,491**	$20,000	$34,491	110%
7	($352,425)	$408,729		**$56,304**	$20,000	$36,304	110%
8	($374,200)	$429,166		**$54,966**	$20,000	$34,966	109%
9	($399,925)	$450,624		**$50,699**	$20,000	$30,699	107%
10	($419,425)	$473,155		**$53,730**	$20,000	$33,730	108%
11	($442,875)	$496,813		**$53,938**	$20,000	$33,938	107%
12	($470,100)	$521,654		**$51,554**	$20,000	$31,554	106%
13	($495,925)	$547,736		**$51,811**	$20,000	$31,811	106%
14	($515,350)	$575,123		**$59,773**	$20,000	$39,773	107%
15	($548,550)	$603,879		**$55,329**	$20,000	$35,329	106%
Total	($6,356,100)	$6,581,462	$600,000	**$825,362**	$300,000	$525,362	

Construction

The law requires that all contractors performing ESIP work be listed or qualified by the State Division of Property Management and Construction (DPMC). Local government units that contract for engineering or architectural services should ensure that their consultants have properly filed with the DPMC and have a proof of approval. This is an important requirement of the ESIP process and one that must be followed from the start of the process in order to eliminate the possibility of using non-qualified contractors or consultants.

DPMC listed contractors and pre-qualified professional services consultants meet specific qualification and experience standards. They are also evaluated on the dollar volume of contracts in which they can engage and are assigned a dollar rating for the services they are approved to provide. For details, see DPMC website: https://www.state.nj.us/treasury/dpmc/.

The ESIP law is specific about how improvements are made or implemented. Routine public works construction contracting procedures of the local government unit are followed, whether or not an ESCO is used. This includes requirements regarding public bidding, bid security, performance guarantees, insurance, and other requirements that are applicable to public works contracts. Once plans and bid specifications are prepared, the governing body advertises for bids, and the usual course of contracting is followed. If the ESCO or project engineer is engaged as a project manager, they may have a role in reviewing and recommending award of contracts. The role of all professionals involved with an ESCO must be clearly defined in its contractual arrangements and in bidding documents.

For projects guaranteed by an ESCO that manufactures its own digital energy control system, the ESCO can specify its own equipment as part of the construction bid specifications. Under the law, these “direct digital controls” (DDC) are declared to be “proprietary” in nature, which permits their specification in lieu of any other manufacturer’s products. When bidding, the specifications shall provide an “allowance” amount for the cost of the DDC, meaning that the cost of the DDC equipment shall not be a part of the determination of the lowest responsible bidder. The allowance is a fixed amount set by the ESCO and is used by all bidders. The ESCO has the incentive to keep the cost low to ensure that the overall savings are not jeopardized. The cost of installing DDC, however, is part of the bid calculation.

Non-DDC items that are manufactured by an ESCO must be specified as an “or equal” or be based on industry standards and Local Public Contracts Law rules (N.J.A.C. 5:34-9.1 and 9.2), and cannot be restricted to the ESCO, unless all requirements of “proprietary goods and services” rule are met.

Contract documents should also include sufficient retainage of contractor funds to ensure that the contractor is not fully paid until the system is successfully commissioned.

In addition, local staff must be trained in the use of the system and be taught how to perform routine maintenance unless maintenance will be performed under a separately procured service contract (service contracts are not part of the ESIP process and are subject to the local government unit's procurement laws). **Training requirements should be explicitly required in bid documents or ESCO contracts.**

Whether or not the local government unit obtains an ESCO guarantee, ongoing maintenance as recommended by an ESCO or manufacturer specifications is required to achieve the projected energy savings. Maintenance should also include a periodic verification of the system to make sure the maintenance is properly conducted and the system is meeting the original specifications and design. If the owner fails to maintain the system according to manufacturer specifications, an ESCO guarantee could be voided and added energy costs will be incurred. If there is no ESCO guarantee and the owner fails to properly maintain the system, savings will be lost and the local government unit will incur additional energy costs, as they will continue to pay for both the improvements and for energy that did not need to be consumed.

Commissioning and Verification

Once construction and installation is complete, final commissioning and verification is required. This process is performed by an independent third-party, not the ESCO or the contractor that installed the equipment or participated in construction. When construction is completed, most energy improvement projects require "commissioning": this is the process of starting and testing equipment, and making adjustments to ensure all energy conservation measures implemented are working in accordance with their design and meeting the projected energy savings. In many cases, specialized service providers known as "commissioning agents" serve this role. The DPMC has a listing of pre-qualified "Building Commissioning" firms approved to provide commissioning services. This verification can be completed by the third-party that performed the verification of the Energy Savings Plan.

The local government unit shall conduct M&V (measurement and verification) at the one year operational date and shall provide a copy of the M&V report to the Board of Public Utilities. If the local government unit is using an ESCO, the one year operational date M&V is part of the ESCO Contract.

If a guarantee of energy savings is used, the law requires a third-party (using the same third-party parameters as above) to perform the calculations necessary to see if the guarantee is met. The periodic cost of the savings calculations cannot be financed through the energy savings obligations; they must be paid from the local government unit's operating budget or from the energy savings. If a guarantee is desired, it can be for a limited time period; it does not have to be for the useful life of the improvement. In some cases, a guarantee for a limited period of time may be appropriate and cost-effective.

Pros and Cons of ESIPs

New Jersey public entities (i.e. State agencies and authorities; public institutions of higher education; local boards of education; counties, municipalities and other local government units; and any other public contracting agency) are authorized to enter into ESIPs. There are advantages and disadvantages to different local government units that choose this financing option.

Guarantee of energy savings
One overall advantage to using the ESIP model for any local government unit is the ability to purchase a guarantee of energy savings. This allows the local government unit to enter into a contract with an energy services company, have improvements financed and installed, and pay for a guarantee that will cover any shortfalls in energy savings during the repayment period. This alleviates any risk to the local government unit that could result in having to raise taxes to pay an ESIP payment, for example. Other advantages and disadvantages vary based on the laws governing the local government unit's ability to borrow funds.

No need for a referendum for School Districts
For a school district in New Jersey, the biggest advantage of using the ESIP financing model is that it allows for the financing of energy conservation measures without receiving voter approval. Other capital projects that must be financed in excess of 5 years require voter approval. This financing method allows improvements to be financed at no additional cost to the taxpayer and therefore, no new debt is required. The repayment of the financing for ESIP projects comes from the savings generated by the energy saving improvements; no new expenditure is required.

No new debt
Other local government units that choose ESIPs will structure repayment in the same fashion, and no new debt is required. Since a referendum would not be required in any event, this factor makes the use of ESIPs not as attractive to municipalities and other local government units. However, more than one New Jersey county government has chosen the ESIP financing method to finance improvements to their county vocational school and county college. Although funding for capital projects for these institutions do not require voter approval, the ESIP method was chosen.

Small projects may not attract ESCOs
A disadvantage to this method of financing is the minimum value of energy conservation measures that must be bundled in order to make the project attractive to ESCO bidders. In order for ESCOs to bid on a project, a minimum value of approximately $1.5M of projects is generally needed. This amount will preclude a number of local governments from pursuing an ESIP as a financing alternative simply because their buildings do not warrant improvements with a value at that level.

Frequently Asked Questions

How do I get started with an ESIP?
The first step is the completion of a Local Government Energy Audit (LGEA). For details: http://www.njcleanenergy.com/commercial-industrial/programs/local-government-energy-audit/local-government-energy-audit

How long will it take to complete an ESIP?
From start (LGEA) to finish (commissioning and verification) the process takes 24-36 months.

Is guidance available from the State to help with this process?
BPU staff members are available via telephone (609)777-3338 or email: esip@bpu.state.nj.us

Is funding available from outside sources?
Funding is available from New Jersey's Clean Energy Program for the initial Local Government Energy Audit (up to 100%). Additional funding may be available through NJCEP programs such as: Direct Install, Smart Start, and Pay for Performance. Since the incentive levels on these programs are subject to change from time to time based on state budget funding levels, the local government unit should always check with NJCEP for the latest funding options available before pursuing facilities upgrades. For current program details: http://www.njcleanenergy.com/commercial-industrial/home/home

Is debt service aid available for these projects?
No, for a NJ school district, projects funded through an ESIP are considered "Other Capital Projects" and as such are not available for debt service aid.

Can I finance projects other than energy conservation measures?
Other projects can be undertaken simultaneously with the ESIP projects, however, funding for those projects must come from other sources like capital reserve or operating budget. Additionally, the total cost of those projects cannot exceed 15% of the total budget for the ESIP, excluding items that are prerequisites of energy conservation measures listed in the Energy Savings Plan.

What professionals must be retained to complete an ESIP?
The type of ESIP (ESCO, Do It Yourself, or the Hybrid option) as well as the financing method (lease or bonds) will dictate the professionals to be retained. They may include architect, engineer, bond counsel, and financial advisor.

What formal action is required by the local government unit?

- An authorization to go out for RFP for the ESCO
- A resolution awarding the RFP to the selected ESCO
- A resolution approving the Energy Savings Plan
- Traditional resolutions for financing and construction contracts

What approvals are required from BPU?

- Approval of RFP for ESCO services: 14 days to review and approve
- Approval of Energy Savings Plan: 14 days to review and approve

What costs associated with the ESIP are not bundled into the ESIP Financing?
The fees below may not be financed with the Energy Savings Obligation; these fees may be included in the energy cost savings analysis and payback.

- The cost of the energy savings guarantees offered by the ESCO, if procured
- Verification of the investment level audit
- All measurement and verification (M&V) costs associated with guarantees. The M&V at the one year mark is an exception and is included with the ESCO fees
- The maintenance costs of new equipment

Where can I find DPMC contractors and pre-qualified professional services consultants?
https://www.state.nj.us/treasury/dpmc/

Who should I contact for further information?
NJBPU Division of Economic Development and Energy Policy
Email: esip@bpu.state.nj.us
Phone: (609) 777-3338

Appendix A: Types of Energy Conservation Measures (ECMs) Eligible for ESIP

This list is from the ESIP guidance in The New Jersey Department of Community Affairs Local Finance Notice 2009-11: https://www.nj.gov/dca/divisions/dlgs/lfns/09/2009-11.doc

1. Boiler Plant Improvements such as, but not limited to: boiler control improvements, upgrade of natural-gas-fired boilers with new controls
2. Chiller Plant Improvements such as, but not limited to: chiller retrofits or replacements
3. Building Automation Systems / Energy Management Control Systems (EMCS) such as, but not limited to:
    - HVAC upgrade from pneumatics to Direct Digital Control
    - Upgrade or replacement of existing EMCS systems
4. Heating, Ventilating, and Air Conditioning (HVAC, not including boilers, chillers, and BAS/EMCS) such as, but not limited to:
    - packaged air conditioning unit replacements, HVAC damper and controller repair or replacement
    - replacement of air conditioning and heating units with heat pumps
    - window air conditioning replacement with high efficiency units cooling tower retrofits or replacements
    - economizer installation
    - fans and pump replacement or impeller trimming, thermal energy storage
    - variable air volume (VAV) retrofit
5. Lighting Improvements such as, but not limited to: interior and exterior lighting replacements, lighting control improvements, occupancy sensors installation, LED exit sign installation, daylighting
6. Building Envelope Modifications such as, but not limited to: insulation installation, weatherization, window replacement, reflective solar window tinting
7. Chilled Water, Hot Water, and Steam Distribution Systems such as, but not limited to: piping insulation installation, hot water heater repair and replacement, steam trap repair and replacement
8. Electric Motors and Drives such as, but not limited to: motor replacement with high efficiency motors, variable speed motors or drives
9. Refrigeration equipment such as, but not limited to: replacement of ice/refrigeration equipment with high efficiency units
10. Distributed Generation such as, but not limited to installation of: cogeneration systems, microturbines, fuel cells
11. Renewable Energy Systems such as, but not limited to: photovoltaic system installation, solar hot water system installation, wind energy system installation, passive solar heating installation, alternatively fueled vehicle refueling station installation
12. Energy/Utility Distribution Systems such as, but not limited to: transformers installation, power quality upgrades, power factor correction, gas distribution systems installation

13. Water and Sewer Conservation Systems such as, but not limited to installation of: low-flow showerheads, low-flow plumbing equipment, water efficient irrigation, on-site sewer treatment systems
14. Electrical Peak Shaving/Load Shifting such as, but not limited to: thermal energy storage, gas cooling
15. Energy Cost Reduction Through Rate Adjustments such as, but not limited to: recommendations for change to more favorable rate schedule, recommendations for government negotiation of lower rates, same supplier or recommendations for lower energy cost supplier(s) (where applicable), energy service billing and meter auditing recommendations
16. Energy Related Process Improvements such as, but not limited to: production and/or manufacturing improvements, recycling, other waste stream reductions
17. Commissioning (the testing of equipment after construction before it is put into service) such as but not limited to: retro-commissioning services, continuous commissioning services

Appendix B: Sample Rubric for Evaluating ESCO RFP Proposals

Rubric used by Delran Township School District to evaluate the ESCO RFP Proposals
The Board of Education established five criteria for the review of the proposals in order to award the proposal to the entity that best met the requirements of these criteria and the weight assigned to each.

1. Company Overview (20 pts.): demonstrate strong capabilities, experience, expertise, financial strength, proven track record, favorable reputation for ESIP process; identify at least three projects within the last five years; provide organizational chart; provide financial information for the two most recent fiscal years.

2. Approach to Energy Savings Plan Development & Implementation (25 pts.): include the proposer's preliminary energy savings plan based on the local government units LGEA report; provide approach to energy savings plan project planning and development, savings analyses and calculation methodology; identify projects rebates.

3. Ability to Implement Project (15 pts.): preference will be given to proposals demonstrating an ability to carry out the tasks and responsibilities outlined in the proposal, including the arrangement of any necessary financing, in a prompt and efficient manner with minimal disruption to the local government unit.

4. Project Comprehensibility & Energy Savings Projections (25 pts.): proposals will be compared based on the overall value of the proposal to the local government unit in terms of projected program costs, energy savings, and environmental benefits.

5. ESCO Fees (15 pts.): fees shall be a function of all costs associated with the program that are required to fully develop and implement the energy savings plan.

Appendix C: Case Studies

Delran Township School District ESIP

Delran Township School District implemented a $4.5 million capital improvement project through an Energy Savings Improvement Program (ESIP). The program has reduced the District's energy costs by 32 percent, which equals nearly $285,000 per year. The district also secured over $275,000 in rebates and incentives from New Jersey's Clean Energy Program and the PJM Energy Efficiency Credit*. The District's ESCO also prepared RFP Documents and other work to help the District secure Power Purchase Agreements to add rooftop and ground-mounted solar arrays on District property.

Because the District used the ESIP to fund the program, the project was completed without the District taking on new debt; funding was structured so that every year of the project energy savings from the upgrades added funds to the District's operating budget.

*The PJM Energy Efficiency Credit is an incentive offered by PJM Interconnect, the manager of electrical grid that includes New Jersey. This credit is an incentive for entities that help PJM meet its capacity needs through energy efficiency or electrical generation projects.

What Steps did Delran Township School District complete to undertake the ESIP Project?

Local Government Energy Audit (LGEA)
The initial audit was completed for all facilities in the Delran Township School District portfolio in 2013 using the free LGEA program subsidized by New Jersey's Clean Energy Program.

Method of Implementation
Once Delran Township School District had the results of the LGEA and decided to move forward on the ESIP project, they elected to use the ESCO Method and issued an RFP in 2015. Three proposals were received on September 17, 2015. Schneider Electric was selected as the District's ESCO. At the end of this case study is the rubric used in the ESCO selection process.

Investment-Grade Audit and Third-party Review
Once the ESCO was selected, all four school buildings were assessed with an investment grade audit performed by Schneider Electric. The results of the investment grade audit were reviewed by a third-party, Schiller & Hersh Associates, and the Board of Public Utilities (BPU).

Energy Savings Plan
The ESCO compiled a full Energy Savings Plan, a summary is available at: Delran Schools Energy Savings Plan

The list of Energy Conservation Measures selected for each of the four schools is shown below:

Energy Conservation Measure (ECM)	Delran High School	Delran Middle School	Delran Intermediate School	Millbridge Elementary School
Hot Water Pump Variable Frequency Drives & Control Valve Upgrades	■	■	■	■
BAS Upgrade	■	■	■	■
Retro-commissioning - D Wing		■		
Lighting Upgrade - Interior	■	■	■	■
Lighting Upgrade - Exterior	■	■	■	■
Urinal Replacement - Faculty Lounge & Boys Locker Room		■		
Building Envelope		■	■	
Walk-In Cooler & Freezer Controls	■	■	■	■
Vending Miser	■	■	■	■
Plug Load Controllers	■	■	■	■
Solar PPA	■	■	■	■
Water Conservation	■	■	■	■

List of Energy Conservation Measures Delran Energy Savings Plan (prepared by Schneider Electric)

Rebates and funding applied for by Delran School District as part of ESIP Project

As the Energy Savings Plan was being approved by the BPU and the ESIP contract signed, the ESCO assisted the District in applying for various rebates and incentives. The District received roughly $256,000 from the Pay for Performance (P4P) program through New Jersey's Clean Energy Program, as well as $20,000 through the PJM Energy Efficiency Credit.

Energy Savings Guarantee

As part of the ESIP Process the ESCO is required to offer the local government unit an Energy Savings Guarantee. Delran elected to purchase a guarantee plan utilizing measurement and verification strategies defined by the International Performance Measurement and Verification Protocol, or IPMVP. This guarantee plan also provided quarterly savings reports, quarterly site visits, monthly building automation reviews, and continuous commissioning for the first 2 years of the program.

ESIP and Solar

Based on the results of the Investment Grade Audit, Schneider Electric, the ESCO for Delran Township School District, prepared the specs for the solar project and facilitated the RFP process for the power purchase agreement for the School District. On August 19, 2016 the Delran Township School District completed a solar power purchase agreement with New Energy Equity. The school district is projected to meet 75 percent of its electrical demand via the installed solar array. The solar PPA also included the cost of various roofing upgrades.

What other professionals were involved?

All aspects of the project were managed by Schneider Electric, with the District's financial advisor assisting with securing project financing through the Burlington County Bridge Commission.

How was the project paid for?
Once the Energy Savings Plan was approved by the New Jersey Board of Public Utilities and incentives from New Jersey's Clean Energy Program and PJM Energy Efficiency Credit were applied, Delran School District financed $4.5M to fund the project using a tax-exempt lease purchase agreement. This funding included the ESCO fees, investment grade audit, construction costs, and financing costs. The tax-exempt lease purchase was provided by Bank of America and procured through the Burlington County Bridge Commission.

In addition to funds secured through the ESIP, the District paid for the minimal costs of third-party verification of the investment grade audit from their operating budget.

Rubric used by Delran Schools to evaluate the ESCO RFP Proposals

The Board of Education established five criteria for the review of the proposals in order to award the proposal to the entity that best met the requirements of these criteria and the weight assigned to each. The criteria and a short description of each along with the points assigned are as follows:

1. Company Overview (20 pts.): demonstrate strong capabilities, experience, expertise, financial strength, proven track record, favorable reputation for ESIP process; identify at least three projects within the last five years; provide organizational chart; provide financial information for the two most recent fiscal years.

2. Approach to Energy Savings Plan Development & Implementation (25 pts.): include the proposer's preliminary energy savings plan based on the Board of Education's independent energy audit report; provide approach to energy savings plan project planning and development, savings analyses and calculation methodology; identify projects rebates.

3. Ability to Implement Project (15 pts.): preference will be given to proposals demonstrating an ability to carry out the tasks and responsibilities outlined in the proposal, including the arrangement of any necessary financing, in a prompt and efficient manner with minimal disruption to the School District. It is the intent of the Board for all construction work to be fully completed no later than August 17, 2016.

4. Project Comprehensibility & Energy Savings Projections (25 pts.): proposals will be compared based on the overall value of the proposal to the Board of Education in terms of projected program costs, energy savings, and environmental benefits.

5. ESCO Fees (15 pts.): fees shall be a function of all costs associated with the program that are required to fully develop and implement the energy savings plan.

Case Study: Denville School District

In 2015 Denville School District undertook a $1.8M ESIP to make energy upgrades in three schools and a bus garage. Using ESIP, the District took on a Lease Purchase Agreement in the amount of $1.8M dollars with a repayment term of 15 years. According to the energy savings plan for the project, the estimated energy usage reduction is 1.2M pounds of greenhouse gas (GHG) emissions. At the end of the project, Denville School District reduced the carbon footprint of the District and funded $1.8M dollars of infrastructure work without adding to the debt load of the District. The energy savings of the upgrades are projected to not only fully fund repayment of the project but will result in $85,226 additional energy savings over 15 years.

What Steps did Denville School District complete to undertake the ESIP Project?

Local Government Energy Audit (LGEA)
The initial audit was completed using New Jersey's Clean Energy Program Local Government Energy Audit program. The Final audit report was issued on October 7, 2009.

Method of Implementation
Denville elected to use the ESCO method and issued an RFP in 2015. The District held a mandatory pre-bid meeting on February 5, 2015 and on the closing date, March 10, 2015. Three bids were received and Honeywell was selected as the ESCO for the project.

Investment Grade Audit
Once the ESCO selection process concluded, the ESCO performed an investment grade audit on three schools and a bus garage. The results of this audit were verified by EIAD Energy Solutions, a third-party reviewer as mandated by the Board of Public Utilities rules for ESIP.

Energy Savings Plan
The ESCO compiled a full Energy Savings Plan available at: Denville School District Energy Savings Plan

The list of energy conservation measures (ECMs) selected for each site is on the next page.

New Jersey's Clean Energy Program Incentives
As the Energy Savings Plan was being approved and the ESIP Contract signed, Honeywell applied for rebates through the Smart Start Program for the District. Denville School District qualified for $92,637 in rebates and incentives via the Smart Start program.

ECM	ECM Description	Valleyview Middle School	Lakeview Elementary School	Riverview Elementary School	Bus Garage
1a	Lighting Upgrades - LED	✓	✓	✓	✓
1b	Vending Misers	✓	✓	✓	
1c	Destratification Fans	✓	✓	✓	
1d	Plug Load Management via Wi-Fi	✓	✓	✓	
2a	Boiler Replacements		✓		
2b	Boiler Burner Controls			✓	
2c	Rooftop Unit Replacement	✓	✓	✓	
2d	Premium Efficiency Motors and VFDs		✓	✓	
2e	Steam Trap Replacement			✓	
2f	Pipe Insulation			✓	
2g	Domestic Hot Water Replacements	✓	✓		
2h	Split System Replacements	✓		✓	
2i	Window AC Unit Replacements				
2j	Unit Heater Replacements				✓
3a	Building Management System Upgrades	✓	✓	✓	
3b	Demand Control Ventilation	✓	✓	✓	
3c	Energy Monitoring and Education	✓	✓	✓	
4a	Building Envelope Improvements	✓	✓	✓	✓
4b	Roof Replacements	✓			
5a	Computer Power Management	✓	✓	✓	
6a	Water Conservation	✓	✓	✓	
7a	Demand Response/Permanent Load Reduction	✓	✓	✓	
7b	Energy Sourcing	✓	✓	✓	
8a	Renewable Energy – Solar PPA System	✓	✓	✓	

List of Energy Conservation Measures included in the Denville School District Energy Savings Plan

Energy Saving Guarantee

As part of the ESIP process the ESCO is required to offer the local government unit an energy savings guarantee. For this project, the ESCO offered a guarantee, but after reviewing the level of risk associated with the selected energy conservation measures, the District decided not to purchase an extended guarantee of energy savings.

Other involved Parties

Denville Schools District hired a third-party financial adviser, Phoenix Advisors, LLC.

Financing

The District funded the project with a Lease Purchase Agreement, which does not add to the debt load of the District. This funding included the ESCO fees, investment grade audit, construction costs, and soft costs including the cost of the financial advisers. Not included in the ESIP financing was the cost of the investment grade audit verification. These expenses were paid for from the district operating budget.

Appendix D: Additional ESIP Success Stories

Great Meadows Regional School District (2015)

In 2015, Great Meadows Regional School District used ESIP to finance a $2.6M energy savings program. The ESCO helped the District to secure $176,000 in New Jersey's Clean Energy Program rebates and incentives. The project has a projected reduction of 328,215 pounds of greenhouse gas emissions.

Projected savings in excess of project cost: $152,637 over the 15 year term.

> Article from Energy Manager Today with Project overview
> https://www.energymanagertoday.com/honeywell-develops-2-6m-energy-savings-plan-n-j-school-district-0108672/
>
> Energy Saving Plan developed by Honeywell Building Solutions for Great Meadows Regional School District Great Meadows Energy Savings Plan

Newark Public Schools (2015)

In 2015, Newark School District used ESIP to finance $18.6M in energy upgrades. Energy conservation measures were implemented at six Newark schools. The ESCO hired for the project helped the District secure $1.52M in incentives through NJCEP's Pay for Performance program. Additionally, the energy conservation measures implemented as part of this project are projected to save 3.94 gWh of electricity savings and 351,000 therms of natural gas over the 15 year term of the project.

Projected energy savings in excess of project cost: $72,584 over the 15 year term.

> Overview of the project from the NJ School Boards Association
> https://www.njsba.org/news-publications/school-leader/mayjune-2016-volume-46-6/green-schools-newarks-energy-saving-measures/
>
> Energy Savings Plan developed by Tozour Energy Services for Newark Public Schools
> Newark School Energy Savings Plan

Old Bridge Public Schools (2017)

In 2017, Old Bridge School District completed a $16.1M ESIP. This project included $1.8M in rebates from New Jersey's Clean Energy Program. Additionally, the ESCO worked with the District to prepare specs and bid documents for a solar PPA Project, which resulted in six buildings being outfitted with solar arrays, estimated to meet 35% of the District's electrical needs. The project is projected to reduce the greenhouse gas (GHG) emissions of the District by 1.2M pounds.

Projected energy savings in excess of project cost: $373,456 over the 15 year term.

> Old Bridge Township Schools Undergo $20 Million in Upgrades
> https://patch.com/new-jersey/matawan-aberdeen/old-bridge-township-schools-undergo-20-million-upgrades
>
> Old Bridge Public Schools ESP developed by Honeywell Building Solutions
> Old Bridge Board of Education Energy Savings Plan

Salem Community College (2015)

In 2015, Salem Community College finalized a $5.3M ESIP program with Schneider Electric. This program was the first ESIP project completed with a higher education institution in New Jersey and was the first ESIP project to include a solar PPA. Salem CC was able to complete a much-needed mechanical renovation in multiple facilities; install a natural gas generator to provide backup power for public safety, IT, and campus operations; implement a desktop PC virtualization solution; and install a campus-wide building management system. This program reduced energy costs by nearly $300,000 annually and took advantage of $170,000 in rebates and incentives from New Jersey's Clean Energy Program. The project resulted in a projected reduction of 1.9M pounds of greenhouse gas emissions.

> Salem CC Wins the 2015 Governor's Environmental Excellence Award in the Clean Air Category
> https://www.nj.gov/dep/awards/pastwin2015.html
>
> SCC Transforms Facilities and Reduces Energy Costs by 42 Percent
> https://www.nj.com/south-jersey-towns/2015/10/scc_transforms_facilities_and.html
>
> Salem Community College ESP developed by Schneider Electric
> Salem Community College Energy Savings Plan

Verona Public Schools (2014)

In 2014, Verona Public School District undertook a $3.2M ESIP Project. The ESCO for the project helped the District to acquire $459,129 in rebates and incentives from New Jersey's Clean Energy Program. Additionally, this project used the Energy Savings to fund a combined heat and power (CHP) plant at the Verona High School. The project resulted in a projected reduction of 1.8M pounds of greenhouse gas (GHG) emissions.

Projected energy savings in excess of project cost: $368,055 over the 15 year term.

> Energy Savings Plan developed by Honeywell Building Services for Verona School District
> Verona Schools Energy Savings Plan

West Deptford Public Schools (2016)

In 2016, West Deptford School District embarked on an ESIP to accomplish much needed facility improvements. The District selected Schneider Electric as the ESCO through an RFP process to develop the $4.8M project, which was budget neutral and had no tax impact. Improvements included a 1.8 MW solar PPA, two 35-kW natural gas generators to provide 24/7 power during outages for the District's IT servers and communication systems, new LED lighting, HVAC system commissioning, and more. This project received over $100,000 in rebates and incentives from New Jersey's Clean Energy Program, and provided $330,000 in annual cost savings. The District opted to purchase an extended energy savings guarantee based upon the International Performance Measurement & Verification Protocol (IPMVP) at a cost of $34,800 for 15 years. The project resulted in a projected reduction of 3.4M pounds of greenhouse gas emissions.

Projected energy savings in excess of project cost: $4.8M over the 15 year term.

> District newsletter highlighting ESIP benefits
> West Deptford Newsletter

Appendix E: Resource Guide

General Information about ESIP

New Jersey's Clean Energy Program: ESIP Page
http://www.njcleanenergy.com/commercial-industrial/programs/energy-savings-improvement-program

New Jersey's Clean Energy Program: ESIP Procedures
http://www.njcleanenergy.com/files/file/ESIP%20procedures.pdf

New Jersey Board of Public Utilities ESIP Rules
http://www.njcleanenergy.com/files/file/ESIP%20Rules%20-%20Final%20v%20062313.pdf

Getting Started, LGEA and ESCO RFP information

Local Government Energy Audit (LGEA) Information
http://www.njcleanenergy.com/commercial-industrial/programs/local-government-energy-audit/local-government-energy-audit

Templates for ESCO RFP
http://www.njcleanenergy.com/commercial-industrial/programs/energy-savings-improvement-program

Link to list of current DPMC qualified ESCOs
https://www.state.nj.us/treasury/dpmc/contract_search.shtml
(Enter Energy Services/ESCO on the "Contractors by Specialty" menu for the current list of approved contractors)

Guidance for Energy Calculations for the Energy Savings Plan

How calculate energy savings for Distributed Energy Sources into an Energy Savings Plan
https://www.nj.gov/dca/divisions/dlgs/lfns/09/2009-10.doc

Public Entity Energy Efficiency and Renewable Energy Cost Savings Guidelines
Public Entity Energy Efficiency and Renewable Energy Cost Savings Guidelines.pdf

NJ School Board Association listing of energy savings incentives used by schools
https://www.njsba.org/news-publications/school-leader/marchapril-2015-volume-45-5/getting-energy-smart/

PJM Curtailment Services Factsheet
PJM Curtailment Fact Sheet

Glossary

Combined Heat and Power (CHP) Also known as cogeneration, a combined heat and power installation produces both electricity and thermal energy on-site, replacing or supplementing electricity provided from a local utility and fuel burned in an on-site boiler or furnace. For further information, see the Department of Energy's factsheet on CHP: Combined Heat and Power Factsheet

Demand Charges Demand charges are the fees charged to commercial and industrial energy customers to cover electric utilities' fixed costs of maintaining capacity to meet peak customer demand. In order to determine the demand charge, the utility employs a meter that can read the maximum number of kilowatts that were used at the same time by the customer during a given billing period.

Demand Response and Curtailable Service Activities Demand response provides an opportunity for consumers to play a significant role in the operation of the electric grid by reducing or shifting their electricity usage during peak periods in response to time-based rates or other forms of financial incentives. This may include preapproved actions to be taken during peak demand periods, such as the shut off of electrical supply to certain non-essential facilities during the peak demand period. For example, demand response may include direct load control programs which provide the ability for power companies to cycle air conditioners and water heaters on and off during periods of peak demand in exchange for a financial incentive and lower electric bills.

Direct Install An incentive program of New Jersey's Clean Energy Program, which provides energy efficient equipment at a significant price reduction. Further details on the Direct Install program: http://www.njcleanenergy.com/commercial-industrial/programs/direct-install.

Energy Conservation Measure (ECM) An improvement made to a facility to reduce energy consumption. For ESIPs, a list of common ECMs is provided in Appendix A.

Energy Service Companies (ESCOs) In ESIP, ESCOs are companies approved by the NJ Department of Property Management and Construction to develop, design, build, and fund ESIP projects that employ energy conservation measures to save money and reduce greenhouse gas emissions at their customers' facilities.

Energy Savings Obligations In ESIP, Energy Savings Obligations are the means by which projects are funded without increasing the entity's debt load. This is achieved by funding the ECMs based on the anticipated energy cost savings over the life of the equipment. Refunded bonds and Lease Purchase Agreements are two Energy Savings Obligation options for ESIPs.

Energy Savings Plan (ESP) A written plan developed as part of the ESIP Process and as a result of the investment grade audit detailing a list of energy conservation measures (ECMs) that will be implemented during an allotted timeframe. The ESP documents that the improvements can be paid for by the energy savings generated by the energy efficiency improvements.

Investment Grade Audit (IGA) A detailed audit of facilities that the initial LGEA identified as good candidates for inclusion in the ESIP. The investment grade audit is used to determine the list of energy conservation measures that will be included in the ESIP.

Lease Purchase Agreement One of the two financing options for ESIP, the other is the refunded bond. In a lease purchase agreement the local government unit is able to install and use equipment while the agreement is being repaid; however, ownership of the equipment is retained by the lender until full payment is made. In ESIP, lease purchase agreements do not add to the debt load of the local government unit.

Local Government Energy Audit (LGEA) A program of New Jersey's Clean Energy Program. This program allows local government units to examine their facilities and see how they can improve their energy use. The audit provided by the LGEA program can help identify cost-justified energy efficiency measures and is the first step in an Energy Savings Improvement Program (ESIP). Further details at: http://www.njcleanenergy.com/commercial-industrial/programs/local-government-energy-audit/local-government-energy-audit

Local Government Unit For the purposes of the ESIP Program, local government unit refers to the public entity, such as a municipality or public school district, that is receiving the energy conservation measures (ECMs).

Peak Demand Peak demand occurs when customer electricity use is at its highest, for example, on a hot summer day. Utilities charge commercial and industrial customers a per kilowatt rate based on the entity's highest energy use during a 15 minute timeframe. For example, a local government unit may switch on all HVAC equipment at one time in the morning, resulting in a high demand for electricity during that first 15 minutes. The entity can reduce its peak demand by using less electricity at one time (i.e. by phasing in HVAC start-up), thus resulting in lower demand charges on the utility bill.

Refunding Bond One of the two financing options for ESIP, the other is the lease purchase agreement. Refunding bonds are a type of bond in which the principal is set aside by the lender. In ESIP, refunded bonds do not add to the debt load of the local government unit.

Request for Proposal (RFP) A document that lays out the requirements for participating in a public, competitive bidding process to award a contract for a product or service. Rules for RFP solicitations are governed by State and local government unit statutes.

Societal Benefits Charge (SBC) The fee collected by the NJ Board of Public Utilities to support programing that provides societal benefits such as low income programs, nuclear decommissioning, and funding for energy efficiency and renewable energy programs.

Soft Costs Costs incurred that are not for labor or materials. In an ESIP, soft costs could include expenses such as financial advisor, bond counsel, local attorney, auditor, underwriting fee, bond rating, and other costs associated with the issuance of securities.

Smart Start An incentive program of New Jersey's Clean Energy Program. Smart Start provides incentives for energy efficient equipment. Further details at: http://www.njcleanenergy.com/commercial-industrial/programs/nj-smartstart-buildings/nj-smartstart-buildings.

Pay for Performance (P4P) An incentive program of New Jersey's Clean Energy Program. The Existing Buildings component is designed for commercial and industrial buildings with a peak demand in excess of 200 kW in any of the preceding twelve months. The New Construction component is designed for new commercial, industrial, and multifamily buildings with 50,000 square feet or more of planned space, as well as buildings undergoing substantial renovation. Further details of the P4P program: http://www.njcleanenergy.com/commercial-industrial/programs/pay-performance.

Power Purchase Agreement (PPA) Financial agreement that authorizes a developer to coordinate the design, permitting, financing, and installation of a solar array on a property at little to no cost to the customer. PPA is the financial model that is most frequently used for public and non-profit institutions because it requires no upfront cash outlay for purchase of the solar system itself. The site host contracts with the developer for the purchase of the electricity generated by the renewable energy system while the developer owns the system. At the end of the agreement, the site host may be given the option to purchase the system.

This report was made possible through a grant from New Jersey's Clean Energy Program™. New Jersey's Clean Energy Program is brought to you by the New Jersey Board of Public Utilities.

ABOUT THE NEW JERSEY BOARD OF PUBLIC UTILITIES (NJBPU)

The NJBPU is a state agency and regulatory authority mandated to ensure safe, adequate and proper utility services at reasonable rates for New Jersey customers. Critical services regulated by the NJBPU include natural gas, electricity, water, wastewater, telecommunications and cable television. The Board has general oversight and responsibility for monitoring utility service, responding to consumer complaints, and investigating utility accidents.

ABOUT THE NEW JERSEY CLEAN ENERGY PROGRAM (NJCEP)

NJCEP, established on January 22, 2003, in accordance with the Electric Discount and Energy Competition Act (EDECA), provides financial and other incentives to the State's residential customers, businesses and schools that install high-efficiency or renewable energy technologies, thereby reducing energy usage, lowering customers' energy bills and reducing environmental impacts. The program is authorized and overseen by the New Jersey Board of Public Utilities (NJBPU).

ABOUT SUSTAINABLE JERSEY

Sustainable Jersey is a certification program for municipalities in New Jersey. Launched in 2009, Sustainable Jersey is a nonprofit, nonpartisan organization that supports community efforts to reduce waste, cut greenhouse gas emissions, and improve environmental equity. It provides tools, training and financial incentives to support and reward communities as they pursue sustainability programs. Sustainable Jersey is one hundred percent voluntary and each town can choose whether it wants to get certified and the actions it wants to do in order to achieve enough points to get certified.