



The State University
of New York

Office for Capital Facilities Guidance Document

ENG-05

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Energy Performance Contracts for State-Operated Campuses

An introduction to Energy Performance
Contracts for **state-operated campuses**.

Overview

Energy Performance Contracts can be an effective method for achieving desired energy savings without upfront capital. SUNY's state-operated campuses do not have the statutory authority to take on debt, and are not able to contract directly with an Energy Services Company for financing. Therefore, the mechanism for SUNY's campuses to engage in an Energy Performance Contract (EPC) is through the New York Power Authority (NYPA).

1. What is an Energy Performance Contract (EPC)?

Energy Performance Contracts (EPCs) are a well-established method available to college campuses to finance and implementing energy efficiency upgrades, improve operations and save money. An EPC uses the cost savings from reduced energy consumption to repay the upfront investment cost of installing energy-saving upgrades. EPC's are generally put in place through an agreement with an Energy Services Company (ESCO) after a competitive selection process (i.e. RFP). The ESCO guarantees the EPC's energy savings, which mitigates the financial risk to the campus.

An EPC enables the upgrade of facilities without the use of capital funding, therefore it is often considered when financial resources are constrained. An EPC does not require an upfront capital investment because the model allows for energy efficiency upgrades to be funded through ongoing operational savings. EPC's often include the replacement of older equipment with high maintenance costs. An EPC can also simplify project management and speed the implementation energy-saving upgrades. By bundling multiple energy-efficiency upgrades with varying paybacks into one EPC project, a campus can leverage money from quick payback upgrades (e.g. LED lighting) to finance needed upgrades with longer paybacks (e.g. boiler systems and new windows).

The most common type of EPC is a guaranteed savings contract; which guarantees that the level of savings achieved will match or exceed the cost of the project, including the project's upfront and ongoing costs.

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2. What is an Energy Services Company (ESCO)?

An Energy Services Company (ESCO) is a commercial or non-profit business providing a broad range of energy solutions including designs and implementation of energy savings projects, retrofitting, energy conservation, power generation and energy supply, and risk management. An ESCO provides a turnkey approach by providing a variety of components under an EPC. An ESCO can:

- a) Identify and evaluate project opportunities
- b) Educate on financing and other funding sources
- c) Design, install, commission and manage projects
- d) Measure and verify efficiency savings
- e) Train staff, provide ongoing maintenance services
- f) Guarantee energy savings and system performance

3. What types of projects fit under an Energy Performance Contract?

Projects may include:

- a) Lighting
- b) Renewables
- c) Boilers
- d) Chillers
- e) HVAC
- f) Building envelope
- g) Energy Management System's (EMS) and more.

4. An EPC is intended to be a turnkey service that includes:

- a) ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) or investment grade level audit
- b) Design Engineering
- c) Construction Management
- d) Commissioning
- e) Operation and Maintenance
- f) Measurement and Verification (M&V)
- g) Project Financing
- h) Project Savings Guarantee

5. Where do we start?

Engage procurement services and advisement, as available, through New York State Energy Research and Development Authority (NYSERDA), New York Power Authority (NYPA), or Dormitory Authority of the State of New York (DASNY) to develop an initial course of action and screening process. As the process progresses, data collection will be required in order to develop the Energy Performance Contract and its corresponding Measurement and Verification Plan.

- a) Energy usage over the last several years
- b) Building(s) square footage
- c) Equipment age and hours of operation
- d) Maintenance costs
- e) Future construction plans to determine if pursuing an ESPC is the best option

6. What should an RFP include?

The RFP should provide potential ESCO's with information about the facility and scope of services, provide a schedule and any special conditions associated with the project, and identify the criteria with which proposals will be evaluated. Areas for consideration should include technical and financial aspects of the project as well as the background and qualifications of the ESCO. The RFP must be developed in compliance with local requirements and procedures.

7. What is Measurement and Verification? ¹

¹ Source: [US Department of Energy](#)

Measurement and verification (M&V) is a key component to ensure that the EPC delivers the guaranteed energy savings for the campus. The four major M&V activities critical to the success of an energy performance contract are:

- a) Determining baselines and estimated savings
- b) Developing the M&V plan
- c) Developing the post-installation M&V report, which is part of conducting post-installation M&V activities
- d) Performing annual M&V, which is part of the conducting annual M&V activities

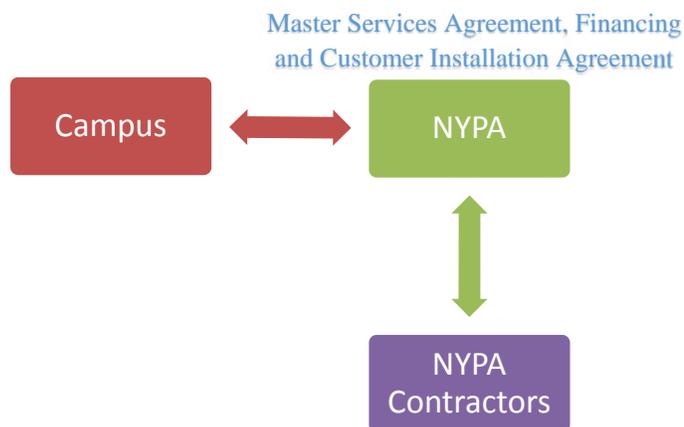
Note that in order to ensure optimal performance, the Energy Performance Contractor may recommend or implement protocols that impact building operation and maintenance. The campus energy manager, or individual responsible for managing the contract, must communicate any potential impacts to building operation and maintenance staff.

The International Performance Measurement and Verification Protocol (IPMVP) provides an overview of best practices for techniques to verify projected energy savings via four options. The costs of M&V are typically included as part of the overall project costs and paid for by the guaranteed energy savings.

- Option A measures the performance of specific energy efficiency measures and relies on engineering calculations from post-retrofit field measurements and stipulations to calculate savings.
- Option B measures energy savings by field measurement.
- Option C measures energy savings at the whole-building level by metering and analyzing utility costs before and after implementation.
- Option D uses computer models of energy performance of the whole facility, or components of it, calibrated to historical utility billing data and/or end-use metering in order to determine energy savings.

8. What does the contractual relationship look like using the NYPA Master Service Agreement?

A campus may choose to implement energy efficiency measures through the NYPA Master Services Agreement. In many cases financing is available from NYPA to cover the upfront costs of the improvements. NYPA provides the campus with a projection for energy savings for each project, and those savings can then be used by the campus to pay NYPA back for the financing that was provided. However, NYPA does not provide a guarantee of energy savings.



9. Procurement Considerations

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For more information on the NYPA Master Services Agreement see Guidance Document *ENG-2 Energy Efficiency Services Program Master Agreement* on the [Office for Capital Facilities website](#).

10. Contact Information

For additional information regarding energy performance contracting, contact SUNY Energy Manager Eric Mazzone at Eric.Mazzone@suny.edu or 518-320-1127.