A Decision-Makers Guide to Energy Saving Performance Contracting

Community Colleges in North Carolina

Addressing Facilities Challenges

In recent years, community college administrators have experienced significant increases in utility costs and struggle to budget for these and other facility operational costs. Many community college systems have identified deferred maintenance items and needed energy efficiency upgrades, but lack the funds to make improvements. Smaller community colleges may lack the technical staffing to effectively accomplish these upgrades on their own. Energy Saving Performance Contracts offer a viable approach to accomplishing energy-related upgrades when the process is wisely approached and managed.

What is Energy Performance Contracting?

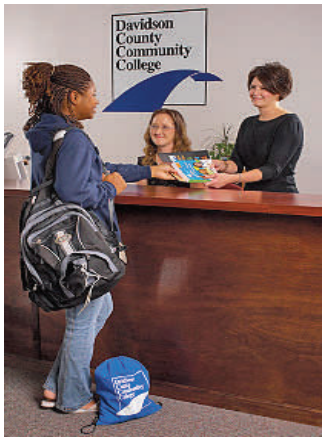
Performance Contracting is a method of financing capital projects in buildings for upgrading equipment and systems that are not energy efficient. These Energy Saving Performance Contracts are a single procurement contract for the engineering, construction, installation, start-up, operational measurement and verification for energy performance improvements that will result in avoided energy costs. In a Guaranteed Energy Saving Contract, the selected contractor (termed Energy Saving Company, ESCO) will guarantee a minimum level of energy utility cost savings to the college resulting from the project upgrades. These guaranteed cost savings by the ESCO support the debt obligation of the college to finance the project.

Project Applications

Energy Savings Performance Contracts are used to purchase a wide variety of building equipment and services. Energy-efficient lighting; heating, air conditioning and ventilation systems; energy management control systems; motor replacements; variable-speed drives for pumps and fans; building envelope improvements; and water efficient fixtures are commonly implemented improvements in community colleges. Renewable energy and cogeneration systems have also been purchased. In addition to equipment installation, the ESCO may propose various repair and maintenance services. These should be negotiated outside the contract if the justification basis is marginal. Some facility owners have bundled other facility improvement projects that reduce related utility costs or can capture lost revenues, such as water metering improvements and other cost avoidance projects.

Financial Considerations

About 95 percent of performance contracts are structured for guaranteed energy savings with the community college (i.e., owner) accepting the debt through third party financing. An ESCO may assist in arranging the financing as part of the negotiated contract. Contract terms typically range for 12-20 years, so all bases should be covered and clearly understood in the contract agreement. Per NC statutes, all projects must pay for themselves with the energy cost savings and provide a positive cash flow. The ESCO guarantees this annual savings and will pay the community college the difference if the annual savings are not achieved as specified under the conditions of the contract. Community college officials should not have an expectation that the performance contract will produce substantial money savings beyond the annualized project cost. The focus should be on maximizing the value of the energy upgrades with the utility savings (or avoided cost) that are realistically achievable.



Davidson Community College launched an energy saving performance contract for $1,984,494 to upgrade facilities in January 2002.

Performance Contracting: What's the Opportunity?

Since 1996, twelve NC community colleges have implemented energy saving performance contacts with a total project cost of $9,569,000. Individual projects ranged from $376,000 to $2,083,000. Based on a national survey of completed performance contracts, community colleges have saved an average of 18 percent on their utility bills through the execution of these contracts. Well-scoped and -planned projects not only reduce energy cost, but also improve student comfort conditions, indoor air quality, lighting, and a number of other O&M and facilities performance issues. Colleges can publicize the positive environmental effects as well.

8 Steps to the Energy Saving Performance Contracting

1 Assess the Need

Any energy project begins with a preliminary feasibility analysis. This effort starts with the collection of utility cost and usage information along with general background information on college facilities. For a potential energy saving performance contract, typically total energy cost will be more than $1.50/square foot, total building(s) area greater than 60,000 square feet, potential energy savings will be more than 15 percent of utility costs, major energy consuming equipment (such as chillers, boilers, or rooftop HVAC) is more than 10 years old, and potential total project cost is more than $500,000. Small projects (less than $300,000) are typically not attractive to an ESCO because the project size does not warrant ESCO's time investment to bid, engineer, and execute the turnkey project.

With background awareness and interest, community college administrators typically begin this process by assembling a work team and project leader to gather and evaluate this preliminary information. Team members should represent a broad range of skill sets in technical, financial, purchasing, contractual, and project management. In this early stage, college officials should seek input from the Local Government Commission for project financing guidance. Community college administrators may also be approached by ESCOs to evaluate and discuss initial project potential. A clear understanding of the performance contracting process is important to effectively work with an ESCO at this early phase.

2 Define the Project

Once the project team feels that they have a potential project that an ESCO will likely be interested to pursue, the team should further define the project by conducting a more in-depth facility profile. The facility profile information will help define the project boundaries and project scope of the Request for Proposals (RFP). This information will include facility operation information and basic background data on the major energy systems, including HVAC, controls/EMS, lighting, water fixtures, building envelope, O&M, new technologies, and renewables. Such information will become part of the RFP.

3 Issue Request for Proposals

The owner will develop an RFP document, which includes the owner's preliminary scope of work and project definition (boundaries), proposal response format, selection criteria, and site visit and information collection logistics, timelines, and project expectations (i.e., typical terms and conditions of a final contract or Engineering Service Agreement). An RFP is publicly posted for 15 days and is sent to the State Energy Office's approved list of qualified ESCOs operating in NC. A mandatory pre-bid meeting is held for interested ESCOs. Additional facility data is provided to the ESCOs and a site visit walk-through is scheduled.

4 Evaluate Proposal and Select ESCO

Hopefully, two or more proposals will be received for competitive bidding. If not, the RFP is reissued. Once proposals are opened in public format, a selection team will screen for qualified proposals. Reference interviews will be conducted prior to an oral presentation that the ESCO will make to the selection team followed by a question-and-answer session. Proposals will be scored, using established weighted evaluation criteria covering a variety of topics such as experience and background, project management, technical approach, financial approach, completeness and other criteria. Based on the best overall program, proposal scoring, references, and presentations, an ESCO will be selected. Selection is not based solely on proposed project costs as with conventional bid-and-spec procurement.

8 Steps to the Energy Saving Performance Contracting

Perform Technical Audit

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The selected ESCO will then carry out a "technical" or "investment grade" audit and establish all details of the project. Terms of the technical audit are negotiated. The ESCO will develop a final contract which will include all contractual legal requirements, energy savings analysis, projected annual cash flows, Measurement & Verification (M&V), technical audit report, project costs breakdown, and all construction process provisions and a number of attachment "schedules" that define various project information, guarantee, responsibilities, insurance, warranties, M&V, commissioning, training, project costs and more.

Negotiate Final Contract and Secure Financing

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The terms for the final contract, termed the Energy Services Agreement (ESA), will be negotiated by the owner and ESCO. The contract must meet terms and conditions of NCGS 143-64.17 and have a third party engineer's review. The financial aspects and any bonded indebtedness of the transaction, whether independent of, or combined with, the ESCO contract, will need to be approved by the Local Government Commission.

Project Construction and Implementation

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Project construction follows the process of other capital construction projects. The Energy Services Agreement establishes all criteria to be followed: documentation, reporting, acceptances, and sign-offs.

Commissioning, Training, Measurement and Verification

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The start-up and commissioning procedures are also clearly defined in the Energy Services Agreement under a separate contract schedule (Schedule "O" in the ESA state template). Staff training is conducted at this stage. The measurement and verification (M&V) of energy savings which is used to calculate cost savings and ESCO performance is defined under Schedule "N" of the ESA. The most used protocol for M&V of performance contacts is the International Performance and Measurement Verification Protocol (IPMVP). There are four options, A, B, C, and D to determine energy savings. These include options for "isolated equipment" or "whole facility" using "actual measurements" or "stipulated savings" based on engineering data. Depending on the type of energy upgrade, the M&V option costs, and the known certainty of the savings, the community college will choose the option(s) that makes the most sense. The M&V process is calculation- intensive and complicated, but community college officials need to understand the logic.

Benefits

Some benefits of the guaranteed energy-saving contracting approach include:

- Preserves limited budget dollars for other needed services and activities
- Energy costs are reduced, with the project financed through the energy savings
- Ability to consolidate several small energy projects under one single procurement responsibility
- Third-party financing, debt burden off balance sheet, no public approval
- A performance bond guarantees savings for the entire term of the contract
- Proceed with worthy projects when funding from conventional resources is not available
- Single-source accountability - design, procurement, build, install, and sometimes maintenance
- Performance risk resides with the ESCO/contractor
- Reduced cost of escalating utilities at contract completion
- New equipment replaces old inefficient equipment; facilities are improved and modernized
- Facility owner retains equipment and all the savings from reduced energy bills after the contract term
- Decreases the design-build schedule, resulting in earlier energy savings
- Tracking energy performance makes administration and operations more aware of the causes and influence of changes that affect energy cost.

Not all of these benefits for executing a performance contract have been realized by everyone, but about 80% of those that have tried this unconventional contracting approach have met or exceeded initial savings returns.

Getting Started

- Begin a utility cost accounting effort by requesting utility providers to supply billing and energy usage summaries and any other technical assistance with energy management.
- Read this guide and consult the document, North Carolina Guide to Energy Performance Contracting for K-12 Schools, Local Governments, and Community Colleges. (See list of Resources on last page).
- Call the Local Government Commission for early insight into the financing aspects of the project.
- Consult with other technical assistance providers such as the State Energy Office and Waste Reduction Partners.
- Talk to peer groups that have utilized performance contracting.
- Talk to pre-qualified ESCOs.
- Begin working through steps 1-8 on pages 2 and 3, beginning with potential project screening.

South Piedmont Community College implemented a $376,481 energy saving performance contract in August 2004.

Planning Timeline Activity	Typical Timeline
Decision-Makers intro to approach	Week 1-7
Review Need—Education on Process	Week 8-12
Develop and Issue RFP	Week 16
Pre-bid Meeting and Site Visit	Week 17
Proposals Due	Week 24
Proposals Reviewed, Evaluated and Ranked	Week 27
Oral Interviews	Week 28
ESCO Selected	Week 30
Technical Audit Work Negotiated	Week 32
Technical Audit Completed	Week 38
Contract Negotiations	Week 42
Approval by Local Govnm't Commission	Week 45
Contract Presented and Signed	Week 48
Construction Phase begins	Week 52

Southeastern Community College launched a guaranteed energy saving contract in November 2003. The project included energy efficiency upgrades with a total project cost of $1,057,356.

Lessons Learned in NC

In 2007, Waste Reduction Partners conducted interviews with school system, local government and community college officials who had undertaken Guaranteed Energy Saving Contracts since 2003 to determine what lessons could be learned to improve the performance contracting experience. Below are key findings from ten public facilities that have utilized performance contracts in NC.

Problem Areas

- Understanding the M&V protocols
- Establishing before-and-after benchmarks
- Getting competitive bids
- Paperwork
- Stipulated saving used on large percentage of project
- Scope of work definition
- Equipment and system compatibility

Contributing Success Factors

- Project management knowledge
- Local Government Commission input
- Clearly defined scope of work quality/quantity
- Clear contract terms and risks
- Third party engineer's review and guidance
- Detailed on-site maintenance training
- ESCO's on-site performance specialist

Nine of 10 interviewees reported that their project was successful and would consider the performance contracting approach again.

NC Statutory Requirements

Authority for NC school systems and other local government units to pursue guaranteed energy saving performance contracting is found in N.C.G.S. 143-64. Examples of major provisions include: maximum 20 year term of contract, ESCO guarantees savings, project has positive cash flow, proposals shall be evaluated by a licensed architect or professional engineer, review and approval for the Local Government Commission, and several other requirements.

Resources

North Carolina Guide to Energy Saving Performance Contracting for K-12 Schools, Local Governments, and Community Colleges: Web: www.energync.net

State Energy Office, NC Department of Administration, 130-A Tillery Place, Raleigh, NC 27604, (800) 662-7131, Pre-Qualifications Listing for the ESCO and other resources, www.energync.net

Local Government Commission: Biff McGilvray, Senior Financial Analyst, Local Government Commission. 4505, Fair-meadow Lane, Raleigh, NC 27607, (919) 807-2371, e-mail: Biff.McGilvray@nctreasurer.com www.treasurer.state.nc.us/dsthome/StateAndLocalGov

Energy Services Coalition - ESC Model Performance Contracting Procurement and Contracting Documents, www.energyservicescoalition.org/resources/documents/index.htm

Waste Reduction Partners, Land-of-Sky Regional Council, 339 New Leicester Highway, Suite 140, Asheville, NC 28806, (828) 251-6622 www.landofsky.org/wrp

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