



# County Buildings Energy Efficiency and Performance Contracting

## ■ Introduction

Performance contracting is an important tool for financing energy efficiency improvements in buildings, particularly in the public sector. Counties can make energy efficiency upgrades to county buildings by using the projected savings to pay for the improvements. The low-risk, pay-for-itself design of performance contracting makes it a viable option for counties that do not have the funds needed in the current budget to install an energy efficiency project, but wish to take immediate advantage of the operating budget savings and environmental benefits that result from making energy improvements.

According to ENERGY STAR®, as much as 30% of your current utility bills is being used to pay for wasted or underutilized energy. Performance contracting can capture and redirect these wasted dollars to pay for the needed improvements, offset deferred maintenance, and improve your cash flow at the same time.

County governments can take this opportunity to lead by example and begin making energy improvements both to save taxpayer dollars as well as to safeguard the environment for future generations. Typical energy performance contracts may include improvements such as:

- mechanical and electrical systems
- lighting and lighting controls
- energy management and information systems
- heating, ventilation and cooling air conditioning (HVAC) systems
- water efficiency
- renewable energy
- distributed generation
- combined heat and power (CHP)
- roofing
- windows
- insulation

The scope of energy improvements may range from work affecting a single part of a building's energy infrastructure (such as lighting) to a complete package of improvements for multiple buildings and facilities. The

most effective contracts are ones in which the measures with the faster paybacks are bundled together with the more complex measures with longer paybacks. This can be done as a series of performance contracts or a single, comprehensive multi-phase performance contract.

And, time is of the essence with energy efficiency projects because the longer you wait to implement, the more the projects cost, especially when you add the payments made to the utilities for avoidable energy waste.

## ■ Benefits to Performance Contracting

Energy performance contracting offers counties the opportunity to make timely facility improvements with minimal up-front costs and equipment performance risks while reducing their energy bills. Working with an energy service company (ESCO) under a performance contract, counties

### Working with an ESCO

An ESCO, or Energy Service Company, is a business that develops, designs, installs, maintains, and can arrange financing for projects designed to improve the energy efficiency and maintenance costs of facilities; thereby assuming the technical and performance risk associated with the project. In addition, an ESCO measures, verifies, and reports energy and energy cost savings.

Since expected energy and cost savings must pay for all project costs over the term of the contract, ESCOs have a strong financial incentive to design optimal performing projects. The payment of any fees to ESCOs for ongoing services (such as maintenance services, project monitoring, savings measurement and verification, etc.) must also be paid from the savings. If savings are not achieved, the ESCO does not get paid. For a list of ESCOs that can help plan and implement your performance contract, check the National Association of Energy Service Companies (NAESCO) at [www.naesco.org](http://www.naesco.org), or ENERGY STAR's Service and Product Provider Directory at [www.energystar.gov](http://www.energystar.gov).



can replace aging and inefficient equipment, reduce energy consumption and associated costs, and improve comfort and productivity levels, usually within their existing capital and operating budgets (for more info on ESCOs see the highlight box on the first page).

Generally, an ESCO will guarantee that the savings targets will be met as a result of improvements in energy and maintenance efficiencies, or the ESCO pays the difference.

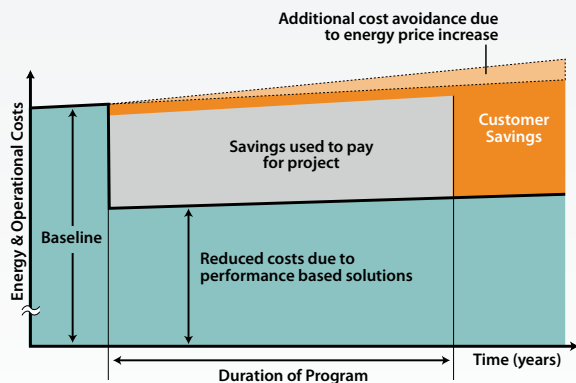
Benefits to performance contracting include:

- low initial startup costs
- decreased utility bills
- reduced energy operating costs
- use of savings to purchase needed improvements today
- reduction of hidden costs from deferred maintenance on outdated equipment
- access to the latest technology
- free up maintenance staff to deal with other deferred maintenance urgencies
- access to external funding
- transfer of technical risk to an ESCO
- improved building performance;
- decreased insurance premiums for newer, safer equipment
- fast, professional installations
- reduction of environmental impact
- staff training on energy efficiency
- ongoing professional support and advice from an ESCO

Performance contracts can address some common problems faced by counties such as budget constraints, aging buildings and equipment in need of modernization, and lack of in-house technical expertise.

In some cases, the financing of a comprehensive performance contract may be structured so other related capital repairs and improvements for a facility are folded into the project and paid for out of energy savings. Most projects are typically realized with an average payback period of seven to ten years. As long as the guaranteed energy savings is greater than the cost of financing, you can't lose!

Counties can bundle together equipment with varying payback times to help finance larger, longer-term projects. For example, the replacement of outdated lighting and motors offers relatively shorter payback periods that could be used to subsidize the cost of items such as chillers, boilers, power plants, and combined heat and power (CHP, also known as cogeneration plants), which have longer payback periods. The term of the financing will be based on the average useful life of the equipment being installed.<sup>1</sup>



Source: Siemens Building Technologies, Inc. "Financial Model" Performance Contracting – Performance-based Solutions [www.siemens.com](http://www.siemens.com)

**NACo Green Government Initiative can help you with your energy efficiency needs. Contact any of the following to learn more:**

**Ameresco** [www.ameresco.com](http://www.ameresco.com)

Ameresco, Inc. is an independent energy solutions company. The company partners with counties to implement cost-effective, energy-efficiency measures in their facilities and operations—improvements that are paid for by the savings they create. Ameresco has extensive project experience working with local governments throughout the country. For more information please contact Shelley Cohen at [scohen@ameresco.com](mailto:scohen@ameresco.com) or 202.422.4488.

**General Electric** [www.ge.com](http://www.ge.com)

GE is continually introducing new products and evolving existing ones that use resources more efficiently and deliver benefits to county governments. From building technology and transportation solutions to the healthcare and water infrastructure solutions, counties are working with General Electric to drive greater efficiency and realize cost savings. For more information on these tools, please contact Hannah Kaplan at [hannah.kaplan@ge.com](mailto:hannah.kaplan@ge.com) or 202.412.5264.

**Johnson Controls Inc.** [www.johnsoncontrols.com](http://www.johnsoncontrols.com)

Johnson Controls helps county governments get the most from their budgets through a comprehensive approach to sustainable practices – from green buildings and renewable energy to water and traffic infrastructure improvements. As a U.S. Green Building Council Member, recognized champion of supplier diversity, and leader in traditional and hybrid vehicle batteries, Johnson Controls is a valued resource for developing and implementing sustainable practices. For more information please contact Joy Clarke Holmes at [joy.a.clarke@jci.com](mailto:joy.a.clarke@jci.com) or 301.621.3609.

**NORESCO** [www.noresco.com](http://www.noresco.com)

NORESCO is one of the leading performance contracting companies in the U.S. It is NORESKO's mission and core business to help county governments find innovative and creative ways to provide energy efficiency in their facilities and infrastructure. NORESKO is one of just eleven Energy Service Companies to hold Energy Service Provider accreditation from the National Association of Energy Service Companies (NAESCO). For more information please contact John Hobbes at [jhobbes@noresco.com](mailto:jhobbes@noresco.com) or 919.460.9220 ext. 236.

**Siemens USA** [www.usa.siemens.com](http://www.usa.siemens.com)

Siemens recognizes that high performance buildings make for high performance business. From energy procurement to efficient system design and installation, from energy generation to comprehensive auditing and performance reporting – Siemens has the answers. Today's government leaders need a strategic partner and plan to ensure consistent, efficient, affordable, and clean energy foundation. Siemens can help you manage your facility's energy needs throughout a building's life-cycle. For more information please contact Nichelle Grant at [nichelle.grant@siemens.com](mailto:nichelle.grant@siemens.com) or 847.941.5772.

1 Singer, Terry E., and Mary E. Johnson. "Performance Contracting: Meeting the Challenge of Deferred Maintenance." *Facilities Manager*, v17n1 (Jan/Feb 2001), [www.appa.org/FacilitiesManager/article.cfm?itemnumber=456&parentid=207](http://www.appa.org/FacilitiesManager/article.cfm?itemnumber=456&parentid=207), accessed 12-5-07

## ■ County Case Studies

### Allegheny County, Pennsylvania

**Population: 1,236,000 • County Seat: Pittsburgh, PA**

Allegheny County worked with energy contractor NORESKO on a comprehensive multi-phase contract to conduct efficiency upgrades of new equipment and cost-saving retrofits of more than 100 county-owned and operated buildings, totaling more than 3.43 million square feet. The county expects to save nearly \$13.7 million in energy operating costs over the next ten years. Energy to be saved from the pilot project phase through Phase II of the program will exceed 20 million kWh of electricity per year, more than 29 million cubic feet of natural gas per year, and more than 90 million gallons of water per year.

### Onondaga County, New York

**Population: 458,000 • County Seat: Syracuse, NY**

Onondaga County worked with the Carrier Corporation to increase energy efficiency in 25 of the county's largest energy-consuming buildings, which account for 80-percent of the total consumption. The project focuses on retrofitting inefficient lighting fixtures, replacing old HVAC equipment, and installing new control systems. When completed, the contract is expected to permanently reduce the annual energy use in county-owned properties by 11 million kilowatt-hours (kWh) of electricity and 1.0 therms of natural gas. That translates to a 7-percent reduction in electricity use and 22-percent reduction in natural gas demand – enough to heat 670 homes and power another 1,160. As a result of the efforts to date, the county cut \$1.3 million from its operating budget in 2007.

### Ingham County, Michigan

**Population: 279,000 • County Seat: Mason, MI** Ingham County completed a \$1.6 million energy conservation performance contract with Trane, Inc. that consisted of lighting retrofits and replacements, upgrades and installations of building automation systems, as well as upgrades to existing mechanical systems and components for eight county buildings. The improvements are expected to save the county at least \$143,215 annually. The facilities department anticipates an additional \$10,000 or more of annual operating cost reductions in equipment repairs, supplies, and outsourced maintenance needs.

### Flathead County, Montana

**Population: 85,000 • County Seat: Kalispell, MT**

Flathead County worked with energy contractor Johnson Controls, Inc. to renovate more than a dozen county buildings including the justice center, juvenile detention center, courthouse, and administration buildings. Special care is being taken with the century-old county courthouse to respect historical preservation. The project will implement lighting and HVAC retrofits along with other updates and new equipment into a new county-wide energy management control system. It is projected that the \$3.9 million contract will save the county more than \$161,000 annually in utility and operations costs while avoiding the annual generation of more than two million pounds of carbon dioxide emissions.

## ENERGY STAR Challenge

NACo and the U.S. Environmental Protection Agency's (EPA) ENERGY STAR program have partnered to bring the ENERGY STAR Challenge to counties across the country. The ENERGY STAR Challenge encourages Americans to improve their energy efficiency by 10% or more. Counties play a vital dual role in the Challenge – they lead by example by improving their own buildings, and they leverage their relationships with private sector organizations to motivate them to make energy efficiency improvements.

Counties joining the ENERGY STAR Challenge have access to a wide variety of NACo and ENERGY STAR tools and resources to assist in their efforts to reduce the energy use of all buildings. Energy use in commercial buildings and industrial facilities is responsible for over 50% of U.S. carbon dioxide emissions. Therefore, it is imperative that any county looking to reduce greenhouse gas emissions within its jurisdiction pay special attention to the buildings in its community. The good news is that the opportunity to reduce these emissions is significant, since as much as 30% of the energy consumed in commercial buildings is often used unnecessarily or inefficiently. To join the ENERGY STAR Challenge, contact Jared Lang, NACo Project Manager, Green Government Initiative at 202.942.4224 or [jlang@naco.org](mailto:jlang@naco.org).

Moreover, improvements to energy efficiency can earn a county building the ENERGY STAR designation. This can be an integral component to raising awareness of county energy and environmental issues as well as promoting a county's energy efficiency efforts to local residents and other sectors of the community. These improvements may also help a county meet the ENERGY STAR Challenge (see highlighted box on page 2). ENERGY STAR is already a recognized and respected brand for products, and as the label spreads to the business and government sectors buildings, the public is taking notice.

## ■ Get Started

Counties should to consider several issues before getting started with a performance contract. It is important to consider how state laws affect a county's ability to enter into a performance contract. For example, some states have provisions concerning the terms and language needed for county performance contracts, while other states do not have laws restricting county governments at all. See the Additional Resources section at the end of this fact sheet to help find out which state laws may apply to your county. Before entering into a performance contract, counties should consider:

- how immediate the need for the project is
- the size of the project
- the length of the payback timeframe
- the availability and knowledge of the internal staff
- the approach to performance contracting used



**Source:** Siemens Building Technologies, Inc. "A winning formula: Putting Energy Savings Back into your Facilities" *Performance Contracting – Performance-based Solutions* [www.siemens.com](http://www.siemens.com)

According to ENERGY STAR, performance contracts are typically arranged for organizations with annual utility bills of \$150,000 or more. However, the Energy Services Coalition confirms that organizations with as little as 40,000 square feet and a \$40,000 of annual utility bills are attractive prospects for an ESCO. Broadening the scope of your project to include multiple facilities and technologies can help attract the best terms and conditions. ENERGY STAR also reminds counties to build contingencies into the contract for any anticipated issues. Adding new equipment (such as computers) or changing operating hours can have a significant impact on energy use. By incorporating responses to likely changes up front, major operational or contractual problems down the road may be averted.

## ■ Performance Contracting Approaches

There are two major types of approaches to performance contracting:

- 1) Request for Proposals (RFP)
- 2) Request for Qualifications (RFQ)

For an RFP, the county requests interested ESCOs to conduct an energy efficiency or sustainability audit and develop proposals for improvement, at their own expense, before an ESCO is chosen. The county then reviews each ESCO's proposal and selects the ESCO based on the ESCO's qualifications as well as their proposed solutions (remember to consider both of these; the lowest bid may not be the best contractor!). Once the ESCO and plan are selected, the contract (that typically guarantees the energy savings and the timeframe) is drawn up and the project is implemented.

The RFQ approach is slightly different. For an RFQ, the county requests that interested ESCOs submit information about themselves (such as past records for other similar performance contracts and kinds of projects they usually work on) and based on that information, a short list is created. If more than one qualified ESCO is chosen in the RFQ process, the next step is usually to submit a RFP to the group. If a single ESCO is chosen, the county and the ESCO work together to conduct the energy efficiency or sustainability audits. Based on the audit, the ESCO designs a solution for the county to approve, reject, or change. Once a solution is agreed upon, the contract (that typically guarantees the energy savings and the timeframe) is drawn up and the project is implemented.

Regardless of which approach you choose, commissioning (the process of making sure a new building functions as intended) and measurement and verification protocols are critical to ensure the continuing performance of the improvements, especially when the energy savings are the source of the financing repayment.

## ■ Conclusion

Performance contracting can offer significant economic savings and ease the strain on resources that a county consumes, all without requiring a significant capital investment. Performance contracting can contribute to the greening of the county government, and can assist a county looking to implement a variety of energy efficient upgrades, whether the goal of the county is to save money, help the environment, or both. As energy prices increase, so do the hidden costs associated with deferring maintenance on aging equipment, which can save immediate labor or material costs, however usually results in overall higher costs or failure rates. Performance contracting often provides a way to avoid these additional costs.

Several states are already enacting emissions reductions policies to address the issue of climate change and several more have legislation to do so soon. Performance contracts provide a quick way to deliver major energy savings and greenhouse gas emissions reductions without performance risks and, considering the costs of delay, at the lowest net cost. As county policy planners try to convert these mandates into practical programs, large-scale energy efficiency projects, as demonstrated in the county spotlights section of this fact sheet, remain the first choice for counties due to their demonstrated cost-effectiveness. Performance contracts provide a quick way to deliver major energy savings and emissions reductions without performance risks and, considering the costs of delay, at the lowest net cost.

As more states move toward legislation making it easier for local governments to enter into performance contracts, counties may soon see this method as the prevailing way of making improvements to county-owned buildings. ESCOs and county governments alike can profit from performance contracts, creating a mutual incentive for the most efficient designs possible, leaving the possibilities wide open in this new public-private partnership.

## Additional Resources

### ENERGY STAR

[www.energystar.gov](http://www.energystar.gov)

ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices. EPA provides strategies, tools, professional assistance, and recognition opportunities to help you meet your county goals and contribute to ENERGY STAR's nationwide challenge to improve energy efficiency by 10% or more!

### The Energy Services Coalition

[www.energyservicescoalition.org/resources/index.html](http://www.energyservicescoalition.org/resources/index.html)

The Energy Services Coalition is a nonprofit organization comprised of state energy office representatives, performance contractor representatives, and others interested in performance contracting. They maintain a list of assistance programs available to local governments, a list of most state statutes and laws on performance contracting, a searchable database of ESCOs, and other of useful resources.

### The National Association of State Energy Officials

[www.naseo.org/members/states.htm](http://www.naseo.org/members/states.htm)

The National Association of State Energy Officials is a nonprofit representative of Governor-designated state energy officials. Your state energy office may provide information and/or support for performance contracting by county governments.

### U.S. Department of Energy, Energy Efficiency and Renewable Energy Building Technologies Program

[www.eere.energy.gov/buildings/info/government](http://www.eere.energy.gov/buildings/info/government)

In partnership with the private sector, state and local government, national laboratories, and universities, the Building Technologies Program works to improve the efficiency of buildings and the equipment, components, and systems within them. The program supports research and development activities and provides tools, guidelines, training, and access to technical and financial resources.