

COMMERCIAL BANKING

Energy Performance Contract Financing as a Strategy:

Improving Energy Efficiency and Reducing Taxpayer Burden



Landscape At-A-Glance

Municipalities across the country have been operating in a climate of economic uncertainty. Pushed to do more with less, they face the challenge of providing quality services to meet constituent demands while cutting operating costs and capital investments at the same time.

In trying to strike the right balance, many are focusing on improving energy efficiency at their buildings, facilities and services by reducing energy usage and cutting greenhouse gas emissions. As electricity costs rise, this clean energy strategy makes economic sense despite some formidable barriers:

- Aging facilities and equipment that consume energy at inefficient levels.
- Lack of funds to invest in improvements, upgrades and maintenance.
- Steadily rising energy costs that increase pressure on over-extended operating budgets.

Empowered to achieve performance efficiencies without increasing capital

expenses and taxpayer burden, municipalities are adopting Energy Performance Contracting (EPC). Funded by a range of financial vehicles, including Tax Exempt Lease-Purchase Agreements, it has become their preferred solution for working capital.

Municipal officials share a particular interest in public building energy efficiency as well as other services they provide such as water treatment, streetlights and traffic signals as waste in any of these areas becomes harder to justify.

The economic benefits of clean energy solutions are influencing the strategies being implemented by mayors of cities across the U.S. Results from research recently fielded by The United States Conference of Mayors on clean energy solutions for U.S. cities revealed that three out of four cities expect to increase implementation of clean energy technologies over the next five years. In addition:

- Cities identify financial constraints as the most significant challenge to improving energy efficiency and

conservation, and developing new renewable energy supplies.¹

- LED and other efficient lighting (76%), low-energy building technologies (68%), and solar systems to generate electricity (46%) are the top three choices among mayors as the most promising technologies for reducing energy use and carbon emissions.²
- One quarter of all cities have already set targets for the use of renewable energy.³

Energy Performance Contracting Snapshot

A typical EPC engagement provides a comprehensive set of energy efficiency, renewable energy and distributed generation measures. Service offerings include the initial energy audit, the installation of customizable solutions that fit the needs of a select facility, and long-term monitoring to verify project savings.

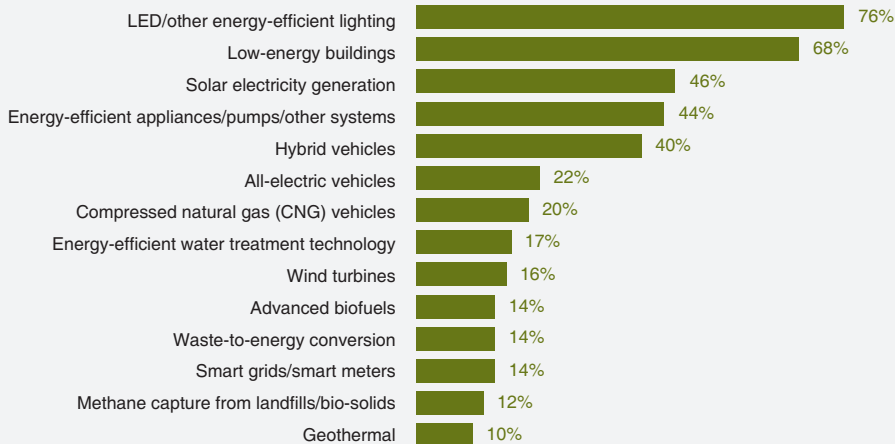
As you and your finance team consider the appropriate energy efficiency solution, note that an EPC engagement can enable you to:

- Ensure the savings generated will be sufficient to finance the total project without pursuing capital funding.
- Reduce utility bill costs.
- Cut greenhouse gas emissions.
- Improve air quality, indoor space comfort and productivity of building occupants.

Performance contracting represents a viable alternative to the traditional bidding and specifying process and provides valuable benefits:

- The burden of performance and guaranteed results is placed on highly

MOST PROMISING TECHNOLOGIES FOR REDUCING ENERGY USE AND CARBON EMISSIONS (PERCENTAGE OF CITIES)*



Note: Includes up to five responses per city

Source: The United States Conference of Mayors Clean Energy Solutions for America's Cities, Spring 2011.

specialized Energy Services Companies (ESCOs) that provide energy efficiency related services with performance contracting as a core deliverable.

- The ESCO “performance guarantee” represents the core commitment to customers. It ensures a project will yield a specified reduction in energy and water use over a contracted term and guarantees the savings produced will be sufficient to cover the cost of financing for the life of the project.
- Energy cost reduction creates a favorable situation whereby “The savings produced typically exceeds the loan payments over the term of the contract, which is typically 10 to 20 years.”⁴ At contract completion, the customer retains the full value of the savings. However, if the guaranteed reduction in energy use is not realized due to ESCO performance, the ESCO pays the customer the difference using pre-determined utility rate calculations.

Financing Strategies

Whether upgrading cooling and heating systems, making high-efficiency lighting retrofits, or installing a solar photovoltaic system, improving energy efficiency at your facilities comes with a high price tag. Clean energy projects depend on significant upfront investment and face a long payback period through energy bill savings. Municipal officials do however have access to an array of funding solutions offered through banks and other third-party financial institutions.

Tax-Exempt Lease-Purchase (TELP)

Agreements - TELP financing strikes the simplest yet most important chord of an EPC engagement strategy by bringing the awareness of both the energy savings and the cost of the lease payments into

alignment over the life of the contract. A well-structured TELP agreement enables you to draw on dollars saved from your future utility bills to pay for new, energy-efficient equipment and upgrades today. Also known as a “municipal” or an “abatement” lease, this vehicle works similarly to an installment-purchase agreement rather than a traditional lease or rental agreement as follows:

- Most traditional rental agreements allow the renter (lessee) to return the asset at the end of the lease term without building equity in the leased asset. They option of postponing the decision to acquire the asset until the lease term expires is also available. Conversely, a lease-purchase agreement presumes the Lessee organization will own the equipment through the term of the lease, granting the Lessor a security interest in the equipment being financed.
- If future funds are not appropriated, the equipment is subsequently returned to the lender while the obligation to repay is terminated at the conclusion of the current operating period without obligation on future budgets.

Due to the non-appropriation language typically included in TELP agreements, they may be considered operating rather than capital expenses. As a result, payments are not legally considered “debt” in most states, and allow public entities to avoid a voter referendum that might otherwise be required.

There may be cases when a TELP agreement is inadvisable, particularly where a state statute or charter may prohibit these financing alternatives from being implemented. In addition, the approval process may be too challenging or politically driven to a point where the outcome would be compromised.

Case Studies

University of Massachusetts Medical Center, Worcester, MA.

Founded in the early 1970s, the University of Massachusetts Medical Center (UMass Medical), a two million square foot facility, faced mounting challenges from its aging and inefficient energy systems. Working with ESCO partner Noresco, UMass Medical engaged in a 10-year EPC covering a range of infrastructure improvements for energy management systems and ventilation upgrades, process water improvements, lighting improvements, and more. The \$30 million project is expected to save \$36 million in utility and operating expenses over the next 10 years while improving power and system infrastructure reliability.

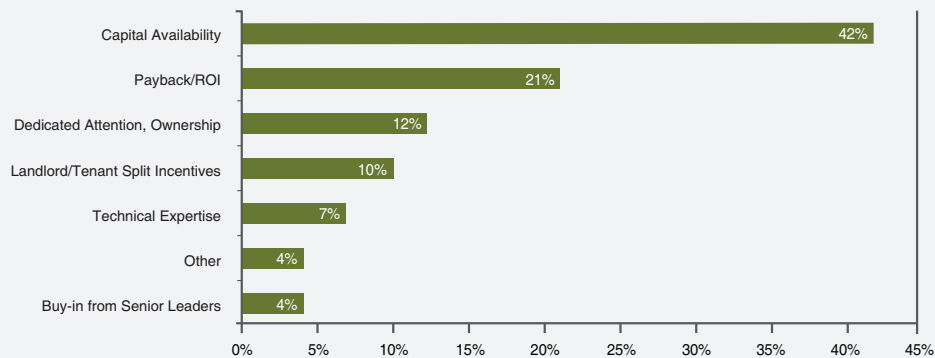
Maryland Department of General Services (DGS)

As part of the State’s EmPOWER Maryland initiative, the Maryland DGS set goals to decrease power consumption 15 percent by 2015, create a more comfortable work environment in State buildings, and reduce greenhouse gas emissions. Working with ESCO Johnson Controls, Maryland DGS is implementing energy efficiency and water conservation improvements, plus making additional upgrades at 37 facilities. The savings from this \$17.8 million project are projected to exceed \$31 million over 13.5 years through lower electricity, natural gas, fuel oil and water consumption.

Tennessee Board of Regents, East Tennessee Region

In an effort to reduce energy costs and improve operating efficiency, the Tennessee Board of Regents selected Ameresco as its ESCO partner. With a \$40MM EPC covering 16 higher education facilities in Eastern Tennessee, the ESCO identified, designed and implemented a range of energy-savings measures that included water conservation and major upgrades of direct digital controls, variable pumping systems and HVAC systems. In addition to achieving 20-30 percent on energy savings, the annual green benefits from a reduced carbon footprint equaled the removal of over 15,000 cars from the road, the powering of over 1,700 homes, and the planting of over 20,000 acres of trees.

WHAT IS THE TOP BARRIER TO CAPTURING POTENTIAL ENERGY SAVINGS FOR YOUR ORGANIZATION?



Source: Johnson Controls and IFMA (2009) "Energy efficiency Indicator" survey results

Capital Leases - Enable equipment acquisition through installment payments with little or no upfront capital required. This arrangement treats the project as capital equipment owned by the financing organization and leased over a fixed term to you. Upon termination, ownership transfers to your municipality. While this represents a capital asset on the balance sheet and requires you to account for depreciation over time, it also provides tax advantages.

State or Local Government Leasing Pools - Use aggregated financing to reduce cost. A state government might contract with a third-party lender to provide an \$80 million lease facility and allow individual municipal EPC projects access using Certificates of Participation.

Revolving Loan Pools - Represent revolving loans made available to customers within a particular geographical location, or an array of projects at multiple sites owned by the same organization such as a state agency or local government. By bundling projects over multiple sites, these pools offer lower interest rates than would be available for a single project.

Power Purchase Agreements (PPA) - Improve energy efficiency and/or benefit from onsite renewable energy systems without investment upfront. The energy efficiency or renewable energy assets are legally owned by an entity separate and apart from you as the facility owner. In a common application, you might permit a qualified third party to install a solar photovoltaic system on your property and agree to buy the resulting energy at a set price for a specific term, usually 15-20 years. As a result, you can capitalize on a number of tangible benefits including lower electricity cost.

Measurement and Verification

As energy cost and consumption are too often invisible to all but a select few within an organization, a sound measurement and verification plan (M&V) can help confirm actual energy cost savings through:

Comprehensive Measurement - Tasked to an ESCO, this process uses industry best practices to measure savings

created within an individual facility through an energy efficiency, water efficiency or renewable energy initiative.

- While using these protocols has become almost "mandatory", the resulting costs can be expensive based on project type and scope. This makes matching the approved measurement strategy to the level of risk vitally important.
- Confirming energy cost savings depends on factors related to the risk of non-contract performance. If risk is low, the effort applied to measure and verify may be limited in intensity. Savings are calculated using a simple formula:

Energy Savings = Base Year Energy Use - Post Retrofit Energy Use + or - Adjustments

- Adjustments - significant changes in square feet, weather differences, operational hours - provide a more realistic comparison of post-retrofit conditions to those of the base year. If these factors are left unaccounted for, it is possible that any realized savings would be improperly calculated.

Third Party Verification - In situations where the ESCO has more experience than the building owner:

- Municipalities will often engage the services of a neutral third party to review the ESCO's reports, ensure transparency and confirm unbiased results.
- Important if you are counting on project savings to pay your financing obligation and looking to confirm the ESCO is meeting your energy savings guarantee.
- Begin this initiative along with the measurement and verification plan. This "trust but verify" arrangement ensures both parties believe the information that determines payments is valid and accurate.

Post-Project Risk Mitigation -

Following these steps can mitigate against potential risks:

- Improve engineering design and project budgeting by including all project deliverables and line item costs in the project's total economic snapshot.
 - Document all financial transactions to enable auditing by an independent third-party. Critical for projects where energy savings are central to performance-based payments and/or an EPC guarantee.
 - Increase the chances of securing financing with the best terms possible. A realistic plan can boost investor confidence in your energy efficiency initiatives.
 - Manage energy budgets more effectively. Measurement and verification guidelines help govern energy use to account for budget variances and adjust for changing facility-operating conditions.
- committee represents stakeholders from Facilities/Engineering, Legal, Procurement, Finance and Operations/Maintenance.
 - Conduct a thorough energy audit of facility systems - lighting, HVAC, steam, water, energy generation/distribution - to identify project scope and anticipated financial and technical benefits.
 - Align goals with recognized energy conservation protocols: fuel saving and water efficiency measures, and energy reductions through installation or retrofit of equipment and/or modification of procedures.
 - Engage an unbiased third party to review and confirm results of measurement and verification reports for contracts written with energy savings guarantees so both parties can agree on accuracy of payments.

Best Practices

Consider the following steps to enhance your organizations' chances for success:

- Clearly define the scope of your project.
- Identify ESCO-related responsibilities: helping you achieve an Energy Star rating or Leadership in Energy and Environmental Design for Existing Buildings (LEED-EB) certification for your facility.
- Issue a competitive RFP reflecting all required services to clarify what the marketplace has to offer and ensure that only investment-grade ESCOs submit responses.
- Make the ESCO decision process inclusive by ensuring your selection

EPC financing is an opportunity to upgrade your power generation systems, lower energy costs, improve operational efficiency and reduce carbon emissions. Financing tailored to the special needs of your project can be sourced through best-in-class third party financial institutions with capital to lend. To optimize your opportunity while minimizing exposure to risk, remember to choose a financial partner with broad-based experience and a strong track record of success in public sector EPC financing.

¹ [The United States Conference of Mayors Clean Energy Solutions For America's Cities](#), A summary of survey results prepared by GlobeScan Incorporated and sponsored by Siemens. Spring 2011.

² Ibid 1.

³ Ibid 1.

⁴ Kats, Greg (principal author), Menkin, Aaron, Dommu, Jeremy, DeBold, Matthew, [Energy Efficiency Financing - Models and Strategies: Pathways to Scaling Energy Efficiency Financing from \\$20 Billion to \\$200 Billion Annually \(DRAFT\)](#), Prepared by Capital E for the Energy Foundation, September 2011.

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