The Pros and Cons of Energy Performance Contracting for Municipalities

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What is a Performance Contract?

- Capital Improvements Project, which substitutes private dollars for Comp Grant dollars
- Energy-related Improvements replace DHW, HVAC, Controls, Refrigerators, Lighting, Toilets
- Loan debt service payments retired over up to 20 years from savings
- ESCO guarantees savings are sufficient to repay debt
- Requires a third party to guarantee savings, oversee installation of measures, provide annual services
Where does Energy Performance Contracting Fit in a Community’s Energy Strategy?

- A supplement to Grant programs
- To pay for capital improvements where grant funds insufficient
- Strong leveraging instrument
- Requires sophistication, time to manage
- Appropriate for municipal buildings, large NPOs
Benefits of Performance Contracting

- Replace aging equipment with new equipment
- Access to 3rd party financing for needed capital energy improvements
- Improved facility energy efficiency and reduced energy costs
Benefits of Performance Contracting

- Reliable and persistent long-term energy saving project performance
- Enhanced local economies through the ESCO’s use of local subcontractors
- Decreased equipment repairs and lower maintenance costs
Benefits of Performance Contracting (continued)

- Freed-up budget dollars to fund other activities
- Increased productivity from improved indoor air quality (IAQ) and building comfort conditions
Benefits of Performance Contracting

(continued)

• Optimized equipment performance through project commissioning

• Better overall management and control of facility

• Accesses all available utility incentives, ARRA grants and incorporates into larger project
Risk Reduction Benefits of Performance Contracting

• Contractually guaranteed measured savings reduces the risk of savings erosion over time

• Integrated project analysis, design, and construction reduces the risk of lost savings opportunities and schedule delays

• Utility savings and performance monitoring reduces the risk of under-funding key maintenance requirements
Risk Reduction Benefits of Performance Contracting (continued)

• Up-to-date training and knowledge for facility operating personnel reduces the risk of project non-performance

• Ability to select services and materials based upon quality and value, rather than on lowest first cost, reduces the risk of inadequate maintenance
Typical Measures

- Lighting
- Added Insulation
- Water conservation
- Domestic hot water
- Chiller replacement
- Controls
- Refrigerators
- Furnace and Boiler Replacements
- Window Replacements
- Energy Management Systems
Savings Erosion Over Time is Typical of Conventional Energy Projects

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
</tr>
</tbody>
</table>

Percent of Predicted Savings Achieved
Stable Savings Guaranteed Over Time is Typical of Projects

Percent of Predicted Savings Achieved

Year 1 | Year 2 | Year 3 | Year 4 | Year 5

Guaranteed Savings: [Bar Graph]
% Predicted Savings Achieved: [Bar Graph]
Performance Contracts May Deliver Double the Value of Conventional Contracts

<table>
<thead>
<tr>
<th></th>
<th>Cumulative Savings Over 10 Years</th>
<th>Project First Costs</th>
<th>Cumulative Net Benefits</th>
<th>Benefit/Cost Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spec &amp; Bid Procurement (Minimize First Cost)</td>
<td>$1,200,000</td>
<td>$600,000</td>
<td>$600,000</td>
<td>2.00</td>
</tr>
<tr>
<td>Performance Contract Procurement (Maximize Net Benefit)</td>
<td>$2,000,000</td>
<td>$660,000</td>
<td>$1,340,000</td>
<td>3.03</td>
</tr>
</tbody>
</table>
Comparison of Cumulative Long-Term Energy Savings Achieved Over Ten Years

Percent of Predicted Savings Achieved

Performance Contract

Conventional Contract
Conventional Bid and Spec EPC Negotiated Procurement

Conventional

- May take several years to secure sufficient funds to implement comprehensive energy projects
- High staff costs due to a piecemeal approach to bidding and managing each separate project

Performance Contracts

- All funds needed for a comprehensive energy project are readily available
- Lower staff cost and quicker completion of a comprehensive project
Conventional Bid and Spec EPC Negotiated Procurement (continued)

Conventional

• Multiple contracts with multiple vendors can result in conflicting project requirements

• Energy savings are not guaranteed

Performance Contracts

• One contract with single point accountability for project performance

• Long-term energy savings are guaranteed by the ESCO
<table>
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<th>Performance Contracts</th>
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<tbody>
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<td>• Guarantees of comfort and operating standards are not usually offered by equipment vendors</td>
<td>• Performance contracts typically contain explicit comfort and operating standards</td>
</tr>
<tr>
<td>• Incremental project implementation misses savings design opportunities</td>
<td>• Comprehensive project implementation maximizes savings design opportunities</td>
</tr>
</tbody>
</table>
Conventional

- Energy projects must compete for limited budget resources with other improvement projects
- No direct incentive for building staff to reduce energy costs

Performance Contracts

- Energy projects are funded with utility bill savings
- ESCO compensation is tied to providing energy savings over the term of the contract
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<td>Limited staff or lack of expertise may put project performance at risk</td>
<td>ESCO provides ongoing technical expertise to insure project performance</td>
</tr>
<tr>
<td>Operations and maintenance budgets are usually under-funded, resulting in wasted energy</td>
<td>Utility bill savings finance operations and maintenance required to maintain project performance</td>
</tr>
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</table>
Limitations of EPC

- Requires Facility Minimum of $500k generally to attract ESCO attention
- Not cost-effective for addressing single measure unless financing unavailable otherwise
- Requires some sophistication in Project Management, Oversight
  - Guarantees
  - Fees
  - M&V Issues
Managing an EPC

• Attorney should Review Energy Services Agreement
• Oversight requires one day per week during construction
• Some towns may desire consultant to review engineering, costs
• Anticipate “Soft Costs” of 35-45% of Project Total
Conclusion

• EPC Makes Sense for most Towns with 10-15,000 population
• Opportunities for Aggregation with other towns, school system, housing authority worth exploration (although different contracts)
• EPCs evolving into Hybrid Customer Contribution/Energy Savings Agreement