Energy Performance Contracting

Energy Efficiency and Renewable Energy Financing

Tennessee Department of Environment and Conservation

Clean Energy Solutions, Inc.
Acknowledgement & Disclaimer

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Energy Savings Performance Contracts

• Special type of design-build construction in which an energy services company (ESCO) develops, designs, arranges financing for, installs, and often operates & maintains energy- and water-saving improvements for a customer

• Customer uses future avoided costs (energy cost savings) to pay off the original investment, plus financing and maintenance costs over the term of a contract
Why use Energy Performance Contracting?

Savings vs. Erosion from day one

***In a traditional project the savings are not measured just assumed***
Why use Energy Performance Contracting?

Savings are Stable for the Life of the Contract

![Bar graph showing savings achievement compared to predictions over five years.](image-url)
Key Elements of ESPCs

- Financed with future cost savings
- Customer owns equipment
- ESCO provides corporate guarantee
- Comprehensive project with one provider
- Include M&V plan
- Create competition
- Provide technical training
- Create local jobs
- Reduce pollution and waste
Performance Contracting Process

- Identify Potential Energy Efficiency Projects
- Define and Develop the Project
- Select a Contractor
- Initiate Project
- Finalize Energy Savings Performance Contract (ESPC)
Financing Mechanisms for ESPCs

- Currently available internal funds
- Traditional debt financing
- Tax exempt lease-purchase agreement (TELP) and certificates of participation (COPs)
- Utility rebates and state & local govt. financial programs
- Special federal programs (e.g. QECBs and CREBs)
- Power purchase agreements (PPAs)
Tax-Exempt Lease Purchase (TELP)

- Alternative to traditional debt financing
- Most widely available method used by public agencies
- Allows public organization to pay for energy upgrades by using money that is already set aside in annual utility budget
- Allows public agencies to draw on future savings to pay for new equipment and services
- Cost of issuance is minimal
- Allows agency to receive title to equipment
- Flexible payment schedules & fast access to funding
Utility Rebates & Incentive Programs

• Can be used to reduce overall cost of project

• All ESCO contracts are obligated to seek out any applicable incentives and rebates from utilities

• TN electric utilities have robust set of energy efficiency incentives for commercial and residential buildings
TVA Energy Right Program

• Provides assessments of energy use and incentives for qualifying businesses
• Incentives are offered through local participating power companies in partnership with TVA
• Incentives are capped at 70% of total project cost
• Two types of financial assistance: standard and custom
• Minimum incentive allowed per standard site is $500 & minimum for custom site is $1000
• Multiple energy efficiency measures can be combined to reach minimum
TVA Energy Right Program

- Standard financial assistance eligible measures:
  - Pre-Approval Needed: Lighting, Refrigeration, and Miscellaneous
  - No Pre-Approval Needed: HVAC and Food Services
  - Standard assistance only applies to material costs

- Custom financial assistance is made in consultation with TVA and local power provider
  - Custom assistance may apply to material and design costs

- Incentives are NOT designed to subsidize an Applicant that has the ability to overcome internal financial barriers through the energy savings alone
Energy Services Team

• Created to meet emerging needs and opportunities to cut energy costs, reduce carbon, and create local jobs

• Services tailored for local capacities, efficiency and renewable opportunities

• Expertise in financing, energy performance contracting, energy engineering, benchmarking, commissioning, assessments, and siting

• No-cost technical assistance until 2016
Energy Services Team: Services

✓ Facilitate technical audits of public buildings, schools, and public housing
✓ Prioritize energy conservation measures for buildings
✓ Provide consultant to work with local jurisdictions, PHAs, and schools
✓ Pre-qualify projects and aggregate small projects
✓ Draft Request-for-Proposals
✓ Assist with Selection of Contractors
✓ Assist negotiation of Energy Audit Agreement
Candidate Projects

• Typically, a good candidate project will have:
  • Minimal available funds for energy related capital improvements
  • Annual utility costs greater than $200,000 unless part of aggregation
  • Aging buildings and/or equipment that is ready for replacement
  • No recent upgrades to lighting, air conditioning or controls systems
  • Large amount of deferred maintenance or recurring maintenance problems/high costs
  • Limited energy management expertise
  • Comfort complaints and/or poor indoor environment
Aggregation for Small Projects

• One RFQ for multiple public customers
• Separate audit and Energy Service Agreements for each public entity
• Separate financings
• Should be economies in ESCO fees for audits, ESA services however, and lender fees
Hamilton County, Ohio: Aggregation Case Study

- Population of ~800,000
- Cincinnati is county seat
- County received EECBG funding, but some municipalities were too small to qualify for funding
- County decided to use EECBG funding to reach out to municipalities & encourage adoption of EPCs
Team: Hamilton County, Greater Cincinnati Energy Alliance, and Clean Energy Solutions, Inc.

CESI served as “owner’s agent” throughout project

County issued RFP with assistance from CESI

9 ESCOs responded to proposal

4 communities ultimately moved forward with EPCs
Hamilton County, Ohio: Aggregation

• Blue Ash
  • Suburb of Cincinnati
  • Population 12,000
  • Median household income $81,000

• Village of Lockland
  • Population 3,500
  • Median household income $34,000

• Chevoit
  • Population 8,000
  • Median household income $50,000

• St. Bernard
  • Population 4,400
  • Median household income $45,000
## Hamilton County, Ohio: Aggregation

<table>
<thead>
<tr>
<th>municipality</th>
<th>number of buildings</th>
<th>Square footage of buildings</th>
<th>energy cost baseline</th>
<th>utility incentives</th>
<th>other incentives</th>
<th>project cost</th>
<th>% project cost covered by incentives</th>
<th>estimated savings (15 year life of contract)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ash</td>
<td>10</td>
<td>310,529</td>
<td>$ 559,459</td>
<td>$ 15,000</td>
<td>$ 279,000</td>
<td>$ 1,966,155</td>
<td>15%</td>
<td>$ 2,231,719</td>
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<tr>
<td>Cheviot</td>
<td>4</td>
<td>53,314</td>
<td>$ 90,661</td>
<td>$ 6,800</td>
<td>$ 244,000</td>
<td>$ 629,025</td>
<td>40%</td>
<td>$ 632,235</td>
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<tr>
<td>Village of Lockland</td>
<td>5</td>
<td>29889</td>
<td>$ 63,104</td>
<td>$ 2,131</td>
<td>$ 85,000</td>
<td>$ 274,304</td>
<td>32%</td>
<td>$ 160,048*</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19</td>
<td>393,732</td>
<td>$ 713,224</td>
<td>$ 23,931</td>
<td>$ 608,000</td>
<td>$ 2,869,484</td>
<td>n/a</td>
<td>$ 3,079,584</td>
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</tbody>
</table>

* Estimated savings for Village of Lockland include a discount for using a different contractor.
Hamilton County, Ohio: Lessons Learned

- Overcoming unfamiliarity with EPCs for stakeholders and decision makers
- Importance of incentive funds
- Financing
- Need for project champion & assistance of owner’s agent
- Framing project in terms of sustainability
- Objective third-party review
- Single ESCO & single contractor
- Owner’s agent aides communication between stakeholders
- County’s role as host, convener, and co-participant
Next Steps

• Contact us for more information or provide us with basic information, such as:
  • Potential number of buildings
  • Total square footage
  • Total annual energy usage & expenditures

• Office of Energy Programs: 615.741.2994

Thank you!