



# **Financing Facility Improvements Through Energy Savings**

**Kentucky League of Cities Conference**

**October 11, 2012**

**Representatives from the  
Kentucky State Chapter of the Energy Services Coalition**

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# Energy Services Coalition

- **The Energy Services Coalition (ESC) is a national nonprofit organization composed of a network of experts who work together at the local and state levels to increase energy efficiency and building upgrades through energy savings performance contracting.**
- **More info about the ESC may be found at [www.energyservicescoalition.org](http://www.energyservicescoalition.org)**



# Agenda

- **What is Energy Savings Performance Contracting?**
- **How Does It Work?**
- **Applicable Legislation**
- **Guarantee Basics**
- **Measurement and Verification Basics**
- **Financing and Funding Option**
- **How To Get Started**
- **Questions and Answers**



# Energy Savings Performance Contracting (ESPC) Defined

“The use of guaranteed savings from the maintenance and operations budget (utilities) as capital to make needed upgrades and modernizations to your building environmental systems, financed over a specified period of time.”



-United States Department of Energy



# Applicable Legislation

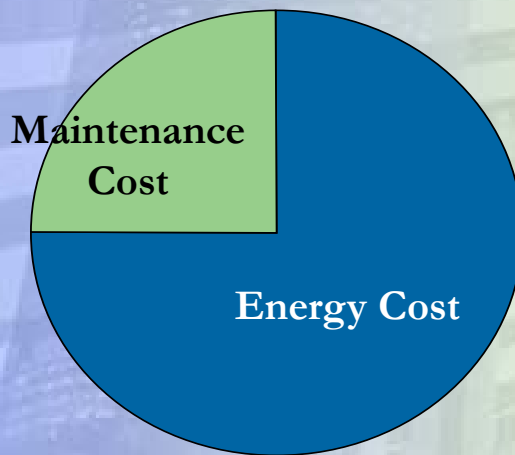
- **KRS 45A.370, 45A.375, 45A.380, or 45A.385**
- **Authorizes the use of guaranteed energy savings performance contracts by units of local government.**
- **Requires an RFP process for competitive bidding**
  - **not subject to award based solely on the lowest competitive bid**
  - **or a separate bidding process for each ECM.**
- **Exempts self-funding ESPC projects from current and future debt limitations.**



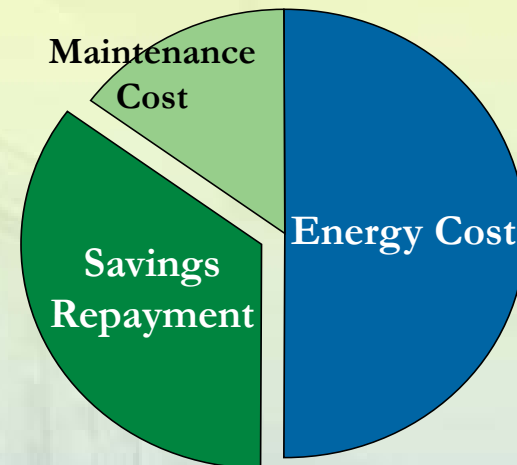


# How Does Performance Contracting Work?

**The Energy Services Company (ESCO) guarantees that future cost avoidance (utility & operations expenses) will meet or exceed annual payments to cover all project costs over an agreed debt service period, or the ESCO pays the difference.**



Pre Project



Post Project



# Typical Energy Conservation Measures (ECMs)

- **Lighting Efficiency**
- **Occupancy Sensors**
- **Energy Management Controls**
- **Variable Speed Pumps**
- **Variable Speed Fans**
- **High Efficiency HVAC**
- **Chillers**
- **Ground/Water Source Heat Pumps**
- **Boiler Control Strategies**
- **Steam to Hot Water**
- **Domestic Hot Water**
- **Windows and Window Film**
- **Roofs and Green Roofs**
- **Insulation**
- **Water Fixture Efficiency**
- **Renewable Energy Solutions**



# Turnkey Delivery

- **Identify and Evaluate Cost Avoidance Opportunities**
- **Develop Engineering Designs and Specifications of the Selected ECMs**
- **Facilitate Financing**
- **Provide Training**

***Manage the Project from Design to Installation to Monitoring***





# Measurement & Verification (M&V) Basics

- **Required by statute**
- **Comparison of measured energy consumption both before and after installation of the ECMs**
- **Options range from measurements of key parameters to computer simulation**
- **Standard protocols (NEMVP, IPMVP, and FMP) provide direction on how to adjust for changes in weather, occupancy, changes to facility operation, etc.**



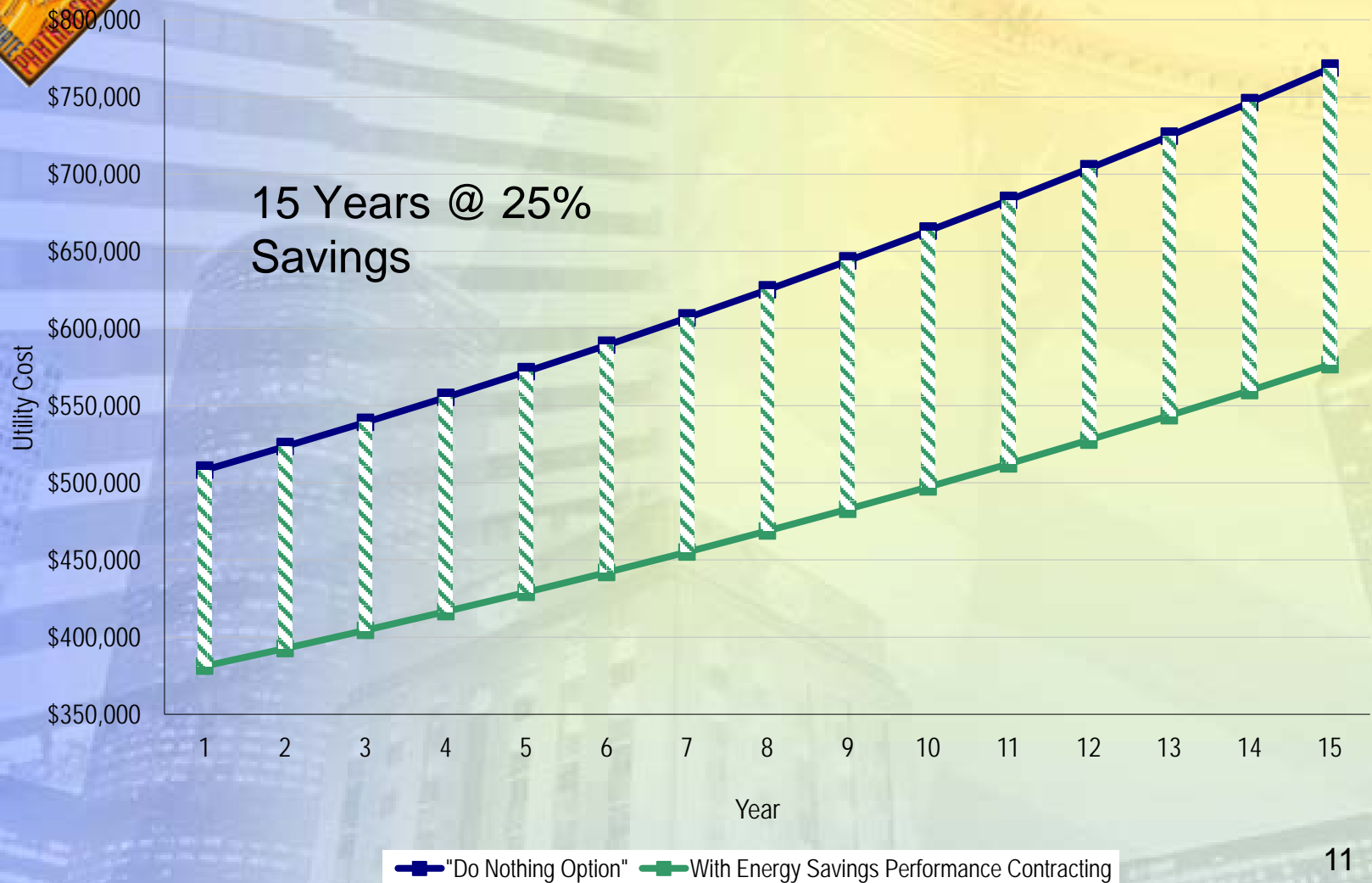
# Sample Cash Flow Self-Funding Program

- **Scenario:**
  - Municipality has three buildings in varying condition
  - Annually pays \$508,230 in combined utilities
  - Wants cost recovery between 12 and 15 years
  - Need self-funding program (savings pays for upgrades)

Utility	Total Cost
Electric and Natural Gas	\$476,343
Water	\$20,334
Sewer	\$11,553
<b>Total</b>	<b>\$508,230</b>



# Savings & Program Potential





# Financing Options

- **Statutes permits financing the installation of ECMs through a lease-purchase agreement, bonds, or the means that offers the most economical value to the local public agency**
- **Finance agreement is typically executed between the Municipality and a third party lender**
- **ESCO can assist with facilitating financing for the Municipality**



# Is My City a Candidate for an ESC Project?

## Do I Have:

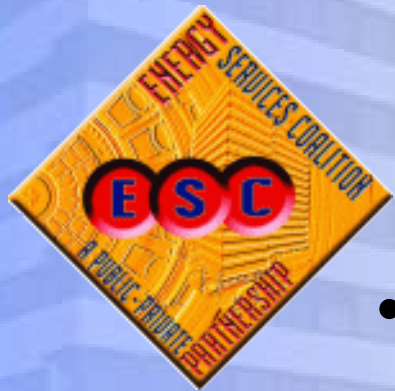
- **Deferred maintenance issues and aging equipment?**
- **Too many demands on maintenance staff?**
- **Budget constraints?**
- **High utility costs?**
- **Little or limited experience with energy efficiency?**





# Advantages of ESCO

- **Proven results, technology, & expertise**
  - Reliable way to make energy saving improvements and needed infrastructure upgrades
  - Design and specification by the ESCO as your consulting engineer
- **Minimize capital expenditures**
  - Money already allocated for future utility and maintenance/repair expenses are used for improvements
- **Fixed price contract for all project related activities; no change orders**
- **Savings are guaranteed by ESCO**



# How To Get Started

- **AMERESCO, Inc.**
- **CTS Group**
- **Earthwell Energy Management, Inc.**
- **Energy Systems Group**
- **Harshaw Trane**
- **Honeywell Building Solutions**
- **NORESCO**
- **Pepco Energy Services**
- **Perfection Group, Inc.**
- **Siemens Industry, Inc.**



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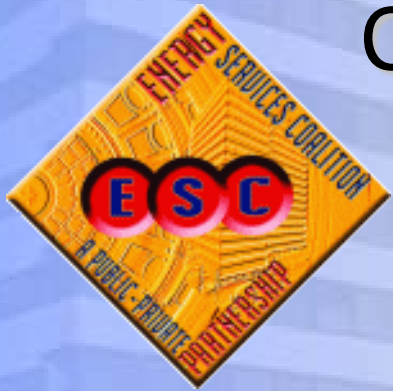
## **Questions and Answers**

[www.energyservicescoalition.org](http://www.energyservicescoalition.org)



# Backup Slides

# City of Covington, Kentucky



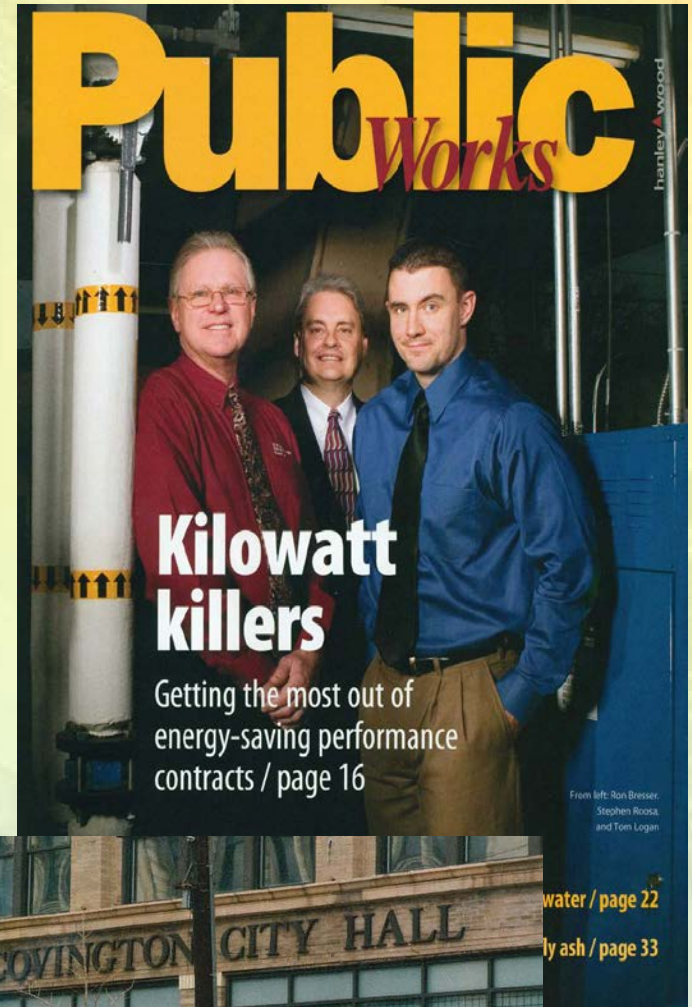
## 11 Buildings

## Alternative Energy

- Waste oil boiler

## Other Improvements

- LED Street lights & traffic signals
- Interior lighting & exit signs
- Lighting controls
- High-efficiency boiler installation
- Infrared Heating
- Energy management systems
- Water conservation improvements
- Window film







# Boone County Government Burlington, Kentucky

## 17 Buildings

### Architectural improvements

- Vestibule installation
- Window replacement
- Window films

### Other Improvements

- Interior lighting & exit signs
- Lighting controls
- Demand management systems
- High efficiency chiller
- Building management systems
- Water conservation improvements

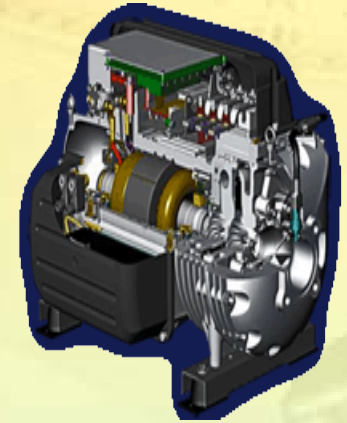


# What Services do ESCOs Provide?



Energy Services Companies partner with clients to make facility improvements by providing a package of performance based services.

- Utility Rate Studies
- Energy Studies, Feasibility Analysis, Engineering Design
- Project Management and Equipment Installation
- Performance and Savings Guarantee
- Coordinating Project Implementation
- Commissioning and Employee Training
- Measurement & Verification of Energy Savings





# How Does an ESCO Get Paid?

- **Industry Accepted Percentages for Engineering, Project Management, Commissioning, and Closeout**
- **Comparable to any General Contractor or Design Build Contractor**
- **Firm Fixed Price - No Change Orders for a Given Scope**
- **Development Costs are Rolled into Construction Cost**
- **ESCOs are Paid Based upon a Schedule of Values and Approved Progress Billings**
- **Not a Shared Savings Approach – Owner Keeps Excess Savings**