

# **Facility and Efficiency Upgrades with Energy Performance Contracting**

# Disclaimer

- ✦ **The information provided is for informational purposes only, does not constitute legal advice or create an attorney-client relationship, and may not apply to all circumstances. If legal advice or other expert assistance is required, the services of a competent professional person should be sought.**

# Presentation Overview

- Energy Performance Contracting Introduction
- Potential cost savings opportunities
- ESCO Steps
- Q & A

# Energy Performance Contracting

Process through which energy efficiency and capital improvements are funded (fully or partially) by the energy and maintenance cost savings generated by the improvements themselves when the cost savings are financed over a period of time.

# **ESCO – Energy Service Company**

You and an energy service company (ESCO) enter an agreement that allows efficiency upgrades to be paid for with savings achieved through decreased energy consumption and maintenance costs.

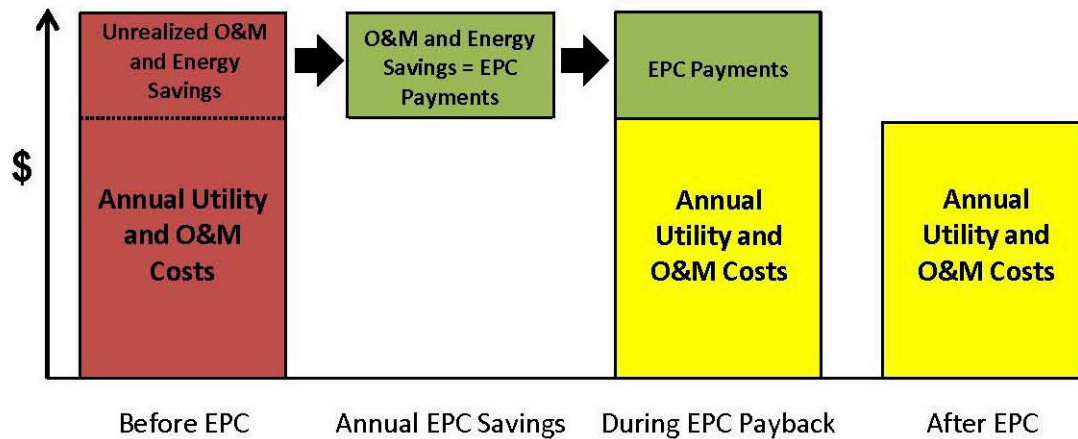
# ESCOs – Many Different Companies



# **No Capital Cost – Contractor Revenues from \$ Savings**

- A way to upgrade your facilities without dipping into your capital budget.
- Use future energy and maintenance savings to pay for projects.

Reallocate money already being spent in utility budget to purchase efficiency and capital improvements.

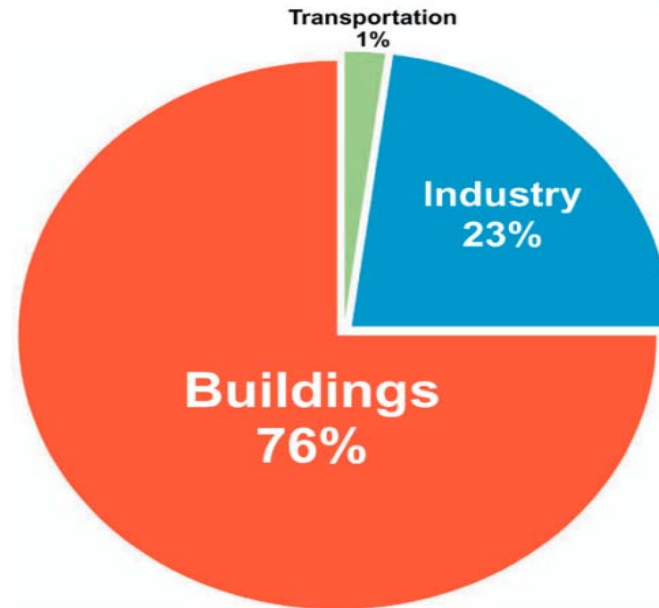




# Steps

- Determine Energy and \$ Savings Potential
- Focus Is on Buildings

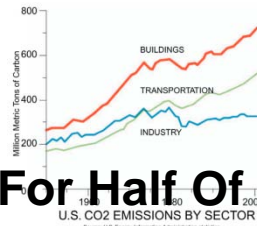
# Why Buildings?



U.S. Energy Consumption

76% of all power plant generated electricity is used just to operate buildings.

# Buildings Account For Half Of All Greenhouse Gas Emissions



# Potential Annual Energy \$ Savings

**Typical Facility Energy Savings  
Opportunity:  
–15% to 30% (or more)**

- Example:

\$500,000 annual utility expense

20% annual savings = \$100,000

10 year tax-exempt lease purchase

\$100,000 X 10 years = \$1,000,000

Fund nearly \$1M in improvements today and pay it back over 10 years with funds previously budgeted to your utility company.

# ESCO Project Investment Thresholds

- **Transaction Costs vs. Rate of Return**
- **Common Target  $\geq$  \$1 M Investment**

# Standard Process

## **STEP 1 INTRODUCTORY STAGE**

Decide if Energy Performance Contracting is right for you.

## **STEP 2 SELECT ESCO**

## **STEP 3 TECHNICAL ENERGY AUDIT**

## **STEP 4 PERFORMANCE CONTRACTING**

## **STEP 5 MEASUREMENT & VERIFICATION**

## **Step 2: Select ESCO - Capabilities Needed**

- Expertise in Energy Efficiency & Supply Solutions
- Audits and Baseline Energy Status & Data Capability
- Design & Installation of Energy Measures Capability
- Arrange Financing



## **Step 2: Select ESCO - Capabilities Needed (con't)**

- Commissioning & Post-Installation Measurements
- Customer Training on Installed Measures
- Operations & Maintenance
  - Responsibility for O&M negotiable
- Continuous Verification of Savings

# Step 3: Technical Energy Audit

- Goal – Verify Annual Energy & \$ Savings
  - Develop Pre-Installation Energy Baseline
  - Measure Post-Installation Performance
  - Energy Savings calculated:
    - Pre-Post Installation Energy Use

# Step 3: Technical Energy Audit (con't)

- Contract Needs:
  - Monitoring & Verification Plan
  - Post-Installation M&V Report
  - Periodic M&V Report (typically annual)

# Step 4: Performance Contracting

- Federal Pro Forma documents available
- Get professional expertise – operational, financial and legal
- Negotiate terms
- Ensure contract meets your technical, financial and legal requirements

# Step 4: Performance Contracting (con't)

- Financed through lease-purchase agreement (typical)
  - Funds from multiple sources may be combined
- Guaranteed cost savings pay lease-purchase
- Annual cost savings meet or exceed annual payments
- Long term partnerships (15-25 years)

# Step 4: Performance Contracting (con't)

- Up to 25-year term depending on equipment lifetime
- Typical finance term between 12 and 15 years

# Step 4: Performance Contracting (con't)

- M&V Document Templates
  - M&V Plan
  - Post-Installation M&V Report
  - Periodic M&V Report

# Step 5: Measurement and Verification

- Get independent reviews of ESCO savings reports
- Get ongoing troubleshooting expertise



# Renewable Energy (“RE”) Screening

- Pre-Project analysis of cost effective RE opportunities
  - Solar
  - Wind
  - Biomass
  - Combined Heat & Power
  - Geothermal Heat Pumps

# Federal ESPC Projects

- Over 250 ESPC projects
- All federal agencies including BIA & IHS
- Private sector investment: \$ 2.28 B
- Guaranteed Cost Savings: \$ 5.49 B
  - Sum of Annual Savings
  - Average project: \$ 8M investment, 17 year term
- Majority Energy Efficiency, 15% Renewables

# State ESPC Projects - Colorado

- State Departments
- Counties
- Cities and Towns
- Higher Education
- School Districts

# Sources of Information

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# Sources of Information

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# Sources of Information

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# Thank You For Coming!!

- Please let us know what other subjects you are interested in.