Energy Performance Contracting Partnership

Colorado Energy Office

Overview

Our Mission
To deliver cost-effective energy services and advance innovative energy solutions for the benefit of all Coloradans.

Low Income & Residential Energy Services
Commercial & Industrial Energy Services
Transportation Fuels & Technology
Public Affairs

Energy Performance Contracting

Support from Colorado Energy Office

- Standardized, state-approved documents
  - Developed by consensus, and approved by State Architect + AG + Controller
  - Toolkits, contracts, guidance, protocols on website
- Pre-qualified ESCOs
  - Engineering capacity and organizational strength
  - ESCOs contracted with the State
- CEO advice and technical support
  - MOU outlining CEO support
  - Dedicated engineer throughout life cycle of project—no charge!
- Private market-based financing
  - Active EPC finance community in CO

The EPC 5-Step Process

- CLIENT COMMITMENT: (1) Build your team, (2) Sign MOU with CEO
- SELECTION OF A PRE-QUALIFIED ESCO
- INVESTMENT GRADE AUDIT + PROJECT PROPOSAL CONTRACT
- ENERGY PERFORMANCE CONTRACT
- FINANCING CONTRACT
- CONSTRUCTION
- MEASUREMENT & VERIFICATION

Water Conservation for Public Jurisdictions

PROBLEM
HIGH COST WATER UTILITY BILLS

SOLUTION
WATER CONSERVATION MEASURES

RESULTS
REDUCED WATER CONSUMPTION & BILLS
**Water Efficiency Measures**
- Indoor Fixture Replacements
- Cooling Tower Retrofits
- Landscape Irrigation Conservation
- Outdoor Landscape Improvements

**Energy Efficiency Measures**
- Lighting Upgrades
- Boiler Replacements
- Occupancy Sensors
- Operations Scheduling + BAS

**Energy Performance Contracting (EPC)**

**Problem**
Inaccurate utility meters

**Solution**
Upgrading meters, using EPC

**Results**
Revenue generation potential

**EPC: Revenue Based Financing Approach**

**Water Meters for Water Utilities**

**Problem**
Inaccurate utility meters

**Solution**
Upgrading meters, using EPC

**Results**
Revenue generation potential

The results, through FY18

**Public Sector EPC Program Results as of June 30, 2018**

- **Guaranteed Annual Utility Savings**
  - Electricity (kWh): 193 million
  - Natural gas: 907,500
  - Water (gallons): 10.3 million
  - Gas (therms): 342.2 million
  - Operations & maintenance (DOM) cost savings: 3.3 million

**Energy + Water Conservation Measures**
- HVAC improvements
- Boiler replacements
- Pumps, fans & drivers
- Equipment controls
- Lighting fixtures & controls
- Occupancy sensors
- Operations & scheduling
- Building envelope improvements
- Water efficiency (low-flow fixtures, leak detection, etc.)
- Cooling tower controls, ice machines & laundry conservation, pool covers
- Other savings

**Unidentified Savings Potential**

**Identified Savings**

**Savings Used as Payment**

**Annual Operating Costs Before EPC**

**Annual Operating Costs During EPC**

**Annual Operating Costs After EPC**

**Before EPC**
Guaranteed savings by ESCO

**During EPC**
Savings used to pay the loan!

**After financing period—savings are yours!”**

**EPC**
Energy Efficiency Contracting

The results, through FY18
Mission

To promote the benefits of, provide education on, and serve as an advocate for the widespread use of energy performance contracting in public and private facilities.

The diverse membership of the ESC provides a unique opportunity to:

• Provide independent third party information and education
• Identify and overcome barriers in Colorado

Your ESCO Partner

A qualified ESCO combines multiple disciplines into a turnkey approach for your Energy Performance Contract including:

• Identification/evaluation of project opportunities
• Financing and other funding sources (grants/rebates, etc)
• Installation, project commissioning, and construction management
• Measurement and verification of energy savings
• Staff and building operator training
• A savings guarantee that covers the cost of the total project

What Challenges Do You Face At Your Facilities? We’ve Got The Solution!

• Sustainability Policies
• Conservation Concerns
• Aging Infrastructure
• Rising Operations Costs
• Lack of Capital
• Code and Regulation
• Comfort Issues
• Deferred Maintenance
• Inadequate In-House Staffing/Training

The Solution

Energy Performance Contracting

Results

• Reduced Energy & Operational Costs
• Modernized Facilities
• Reduced Waste
• Single Source Responsibility
• Guaranteed Results
• Project Risk Mitigation
• Environmental Compliance
• Sustainability Initiatives
• Reduced Emissions
**Typical Project Selection Profile**

- **Larger Capital Improvements, Lower Savings or Return Items**: Medium Capital Cost Medium Return Items 13 to 100 years.
- **Medium Capital Cost Medium Return Items**: Typical Payback Term 7 to 12 years.
- **Lower Capital Cost + High Return Items**: Typical Payback Term 0 to 6 years.

**Typical Water Selection Profile**

- **Larger Capital Improvements, Lower Savings or Return Items**: Medium Capital Cost Medium Return Items 13 to 100 years.
- **Medium Capital Cost Medium Return Items**: Typical Payback Term 7 to 12 years.
- **Lower Capital Cost + High Return Items**: Typical Payback Term 0 to 6 years.

**An Alternative Approach for Building Improvements**

**Traditional Design-Bid-Build**
- Longer design and development process
- Cost not known until design is complete
- Lowest bid drives subcontractor selection
- Many contracts and lack of accountability
- Design changes cause change orders
- Customer at risk for costs and savings

**Energy Performance Contracting (EPC)**
- Collaborative design reduces development time
- Project price defined at TEA/IGA completion
- Collaboration with subcontractors develops better cost solutions
- Single point of responsibility resides with ESCo
- No change orders — fixed project price
- ESCo at risk for costs and savings

**How It Works**

1. **Feasibility Study**
   - Needs Assessment
   - Energy Use Analysis
   - Determine Viability
2. **ESCo Selection**
   - Sign MOU with Colorado Energy Office
   - Select ESCo
3. **Investment Grade Audit**
   - Energy Performance Contract
   - Collab Energy Office
4. **Implementation**
   - Award Subcontracts
   - Order Equipment
   - Implement Project
5. **Verification**
   - Monitoring and Verification
   - Ongoing Support

**Energy Performance Contract Process**

- **Feasibility Study**: 30 days
- **ESCo Selection**: 15 to 90 days
- **Implementation**: 30 days
- **Verification**: 2 years

**Financing & Funding**

- Lease-purchase finance agreement where savings meet annual payments
- Other funding sources (bonds, treasury)
- Supplemental funds for cash infusion to expand project funding and scope (utility rebates, grants, in-house funds, etc.)
- Blend lease-purchase financing with supplemental funds
- ESCo facilitates financing but does not profit from financing
ESC / CEO Collaboration

- CEO membership in ESC (CO chapter and National)
- CEO officer posts in ESC (Co-Chair; Outreach Committee; Water Subcommittee).
- Shared participation in EPC contract development and updating
- ESC meetings as a forum for ongoing coordination

Questions?

Mirka DellaCava
EPC Senior Program Manager
Colorado Energy Office
303.866.3464
mirka.dellacava@state.co.us