Energy Performance Contracting:
A tool to finance water efficiency

Norther Water Winter Stakeholder Meeting
Berthoud, CO  January 15, 2019

Mirka della Cava, Senior Program Manager
Taylor Lewis, P.E., Program Engineer
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
Statewide Savings Potential in Colorado

### Water Efficiency

<table>
<thead>
<tr>
<th>Potential Savings for Public Buildings Using Water Efficient Retrofits* via EPCs:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acre-feet/year</td>
<td>$/year</td>
</tr>
<tr>
<td>6,840</td>
<td>$8,400,000</td>
</tr>
</tbody>
</table>

*Calculations from the *Tapping the Power of the Market* study, and subsequent ground-truth efforts verifying the study’s data and assumptions

### Water Meters

<table>
<thead>
<tr>
<th>Revenue Increase and Apparent Water Loss Reductions Potential Using New Water Meter Projects via EPCs:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Apparent Water Loss Reductions (acre-feet/year)</td>
<td>Increase in Revenue ($/year)</td>
</tr>
<tr>
<td>38,950</td>
<td>$34,000,000</td>
</tr>
</tbody>
</table>

*Calculations from the *Tapping the Power of the Market* study, and subsequent ground-truth efforts verifying the study’s data and assumptions
EPC Supports Multiple Paths to Water Efficiency and Conservation

- Public Buildings can reduce water bills:
  - Indoor fixture replacements
  - Cooling tower retrofits

- Public Properties can reduce water bills:
  - Landscape irrigation improvements
  - Landscape conversion from turf to low water-using plants

- Water Districts can capture lost revenue and water loss:
  - Meter upgrades and replacement
  - Floating solar
How we do it

Public
- Water District
- Sanitation District
- City/County

Private
- ESCOs
- Financing

CEO’s
- EPC
- Engineers
- Tools
The 5-step EPC process

CLIENT COMMITMENT: (1) Build your team, (2) Sign MOU with CEO

SELECTION OF A PRE-QUALIFIED ESCO

INVESTMENT GRADE AUDIT + PROJECT PROPOSAL CONTRACT

MEASUREMENT & VERIFICATION

- ENERGY PERFORMANCE CONTRACT
- FINANCING CONTRACT
- CONSTRUCTION
Support from CEO

- 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
EPCs for Public Buildings & Properties

Before EPC  | ESCO’s annual savings guarantee  | During EPC financing period  | After EPC

$
EPCs for Water Metering Systems

Project cycle of a performance contract water meter replacement project

- **Unbilled Treated Water (Lost Revenue)**
- **Improved Access to Billable Gallons**
- **Finance Payments (Improved Access)**
- **Continued Access to Billable Gallons**

**Before ESPC**

**Improved Meter Accuracy**

**ESPC Finance Period**

**After ESPC Finance Period**
EPCs for Floating Solar

- Water treatment electricity requirements account for a large portion of municipal water entities utility costs
- Many large water district and municipal water suppliers content with considerable evaporation losses each year.

Town of Walden, CO - Water Treatment Plant
The results, through FY18

<table>
<thead>
<tr>
<th>Facility investments</th>
<th>$574,452,035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executed projects</td>
<td>206</td>
</tr>
<tr>
<td>Public clients</td>
<td></td>
</tr>
<tr>
<td>State agencies</td>
<td>152</td>
</tr>
<tr>
<td>Higher education</td>
<td>19/26</td>
</tr>
<tr>
<td>Counties</td>
<td>23/64</td>
</tr>
<tr>
<td>School districts</td>
<td>57/179</td>
</tr>
<tr>
<td>Municipalities</td>
<td>36/271</td>
</tr>
<tr>
<td>Special districts</td>
<td>9/1</td>
</tr>
<tr>
<td>Public buildings</td>
<td>2576</td>
</tr>
<tr>
<td>Square feet improved</td>
<td>83.1 million sf</td>
</tr>
<tr>
<td>Office space, schools, housing, libraries, jails, hospitals, street lighting, water &amp; wastewater facilities, swimming pools, ball fields</td>
<td></td>
</tr>
</tbody>
</table>

**Guaranteed Annual Utility Savings**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity (kWh)</td>
<td>193 million</td>
</tr>
<tr>
<td>Natural gas, propane, heating oil &amp; coal (therms)</td>
<td>10.3 million</td>
</tr>
<tr>
<td>Water (kgal)</td>
<td>507,560</td>
</tr>
<tr>
<td>Utility cost savings</td>
<td>$34.2 million</td>
</tr>
<tr>
<td>Operations &amp; maintenance (O&amp;M) cost savings</td>
<td>$3 million</td>
</tr>
</tbody>
</table>

**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, irrigation, evapotranspiration & cooling tower controls, ice machine & laundry conversions, pool covers, valve replacements)
- Street & traffic lights
- Renewable energy installations

**CEO**

Energy Office
Energy Performance Contracting
CEO would love to hear from you!

Contact us at:

Mirka della Cava
303.866.3464
Mirka.dellacava@state.co.us