

# *Colorado's venture into the private sector with EPC*

*Jeanna Paluzzi  
Colorado EPC Program Manager*



**COLORADO**  
Energy Office

*Energy Services Coalition  
4th Annual Market Transformation Conference  
Charlotte NC, September 1, 2015*



# The Colorado Energy Office

---

## MISSION STATEMENT

*The CEO's mission is to improve the effective use of all of Colorado's energy resources and the **efficient consumption of energy** in **all economic sectors**, through providing technical guidance, financial support, policy advocacy and public communications.*

## DEPARTMENT VISION

*The CEO's vision is to help Coloradans live more prosperous and healthy lives by promoting innovative energy production and **efficient energy consumption** practices that are **beneficial to the economic and environmental health** of the state.*



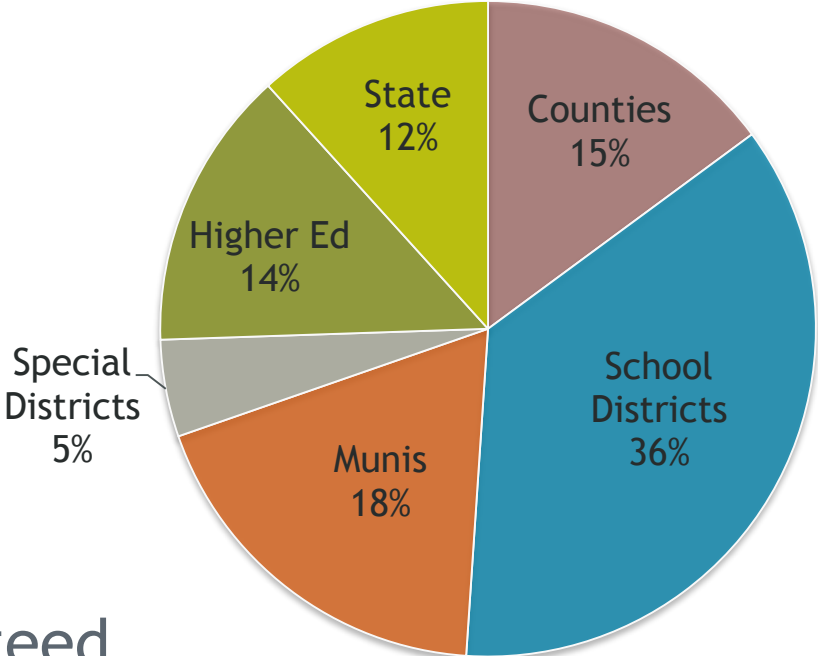
**COLORADO**

Energy Office

Energy Performance Contracting

# Public sector EPC portfolio impact, FY15

- 140 facility owners
- 188 EPCs executed



- Annual savings

|         |  |
|---------|--|
| \$ 31 M | Utility cost savings guaranteed                |
| 161.3 M | kWh Electricity                                |
| 9.4 M   | thm Natural gas + propane + heating oil + coal |
| 66,546  | kgal Water                                     |

- \$486.9 M total project investments **#3** *ESC Race to the Top*  
 \$96.82 invested per capita **#6**
- EPC projects in communities across 75% Colorado counties

# Key elements of our public sector success

---

- Standardized, state-approved documents
- Pre-qualified ESCOs
- CEO advice and technical support
- Private market-based financing



**COLORADO**

Energy Office

Energy Performance Contracting

# Is success transferrable to the private sector?

---

- Lawrence Berkeley National Lab/NAESCO study
- 2011 U.S. Dept. of Energy Competitive Award and cooperative agreement
- Incentivized participation
  - 75% (up to \$25,000) of TEA cost per client
- Gauge private sector reaction to key elements of success



**COLORADO**

Energy Office

Energy Performance Contracting

# Participation

---

- Goal: Engage 10 companies in the EPC process
- Spoke to 32 companies
- Vetted 27 prospects
  - 6 Owner-occupied and leased office buildings
  - 4 Medical (assisted living & hospital)
  - 3 Manufacturing
  - 3 Mountain resorts (lodging + ski operations)
  - 2 Retail space
  - 9 Misc: Multi-family, TV, bank, warehouse, community center, ice rink, car dealership, charter school and oil & gas production



**COLORADO**

Energy Office

Energy Performance Contracting

# Participation, *cont.*

---

- Incentivized 13 companies for 16 investment grade audits
  - 2.2 million square feet
  - Potential annual savings
    - 12.8 million kWh electricity
    - 450,000 therms natural gas
    - 3,400 kgal water
    - \$1.45 million utility cost savings
  - Project tracking, as of December 2014
    - 3 conversions: audit to EPC
    - 10 in decision-making mode
    - 3 self-implementing



**COLORADO**

Energy Office

Energy Performance Contracting

# Participation, *cont.*

---

- Incentivized 13 companies for 16 investment grade audits
  - 2.2 million square feet
  - Potential annual savings
    - 12.8 million kWh electricity
    - 450,000 therms natural gas
    - 3,400 kgal water
    - \$1.45 million utility cost savings
  - Project tracking, as of December 2014
    - 3 conversions: audit to EPC
    - 10 in decision-making mode
    - 3 self-implementing



**COLORADO**

Energy Office

Energy Performance Contracting



# Cost of delay vs. realized benefits

| Participant            | kWh       | therms  | kgal  | \$ Annl savings | \$ Investment | Term   |
|------------------------|-----------|---------|-------|-----------------|---------------|--------|
| <b>SELF-PERFORMING</b> |           |         |       |                 |               |        |
| Resort 3               | 2,100,000 |         |       | 204,472         | \$ -          | -      |
| Property Mgt 3         | 272,271   | 27,533  | 0     | 57,295          | \$ -          | -      |
| Banking                | 884,922   | 24,246  | 0     | 42,420          | \$ -          | -      |
| Cost of delay          | 3,257,193 | 51,779  | 0     | \$ 304,187      | \$ -          | -      |
| <b>EXECUTED EPC</b>    |           |         |       |                 |               |        |
| Manufacturing 3        | 892,736   | 3,649   | -     | 60,934          | \$ 177,396    | 3 yrs  |
| Resort 1 - Lodging     | 1,408,000 | 210,159 | 2,235 | 248,329         | \$ 1,299,966  | 6 yrs  |
| Community Center       | 1,346,006 | 84,357  | 2,484 | 163,333         | \$ 2,608,916  | 15 yrs |
| Realized benefits      | 3,646,742 | 298,165 | 4,719 | \$ 472,596      | \$ 4,086,278  |        |



**COLORADO**

Energy Office

Energy Performance Contracting



# *Lessons Learned*



**COLORADO**  
Energy Office

# Market benefits

---

- **Deeper retrofits than previously experienced**
  - Boiler replacement for space heating, snowmelt and DHW
  - BAS installation, control sequencing
  - Process ventilation optimization
  - Exterior lighting, daylighting controls
  - Gas oven process heating optimization
  - Chiller upgrades
  - Air handling units, thermal equalizers
  - Pumping flow optimization
  - Water efficiency retrofits



**COLORADO**

Energy Office

Energy Performance Contracting



# Market benefits

---

- Deeper retrofits than previously experienced
- Initial projects may lead to a company scaling up adoption of EPC across multiple facilities
- ESCO-client relationship building opportunities



**COLORADO**

Energy Office

Energy Performance Contracting

# Market barriers

---

- Client desire for short payback
- Internal financing vs. traditional 3<sup>rd</sup> party
- Layered corporate decision-making hierarchy
- Internal competition for savings
- Need for business-friendly contracts



**COLORADO**

Energy Office

Energy Performance Contracting

# Lessons learned

---

- Term of property hold
- Financial: ROI or payback required, timing with company budget cycle
- Project team very bearish on incentivizing
  - If offered, split between audit buy-down and implementation measures
  - Offer on a scheduled basis, rather than open enrollment
  - Federal funding required DUNS and SAMS
- Business-friendly contract docs
- Internal approval processes



**COLORADO**

Energy Office

Energy Performance Contracting





# *Considerations for permanent program design/ SEO market intervention*



**COLORADO**  
Energy Office

# Market benefits

---

- **Deeper retrofits than previously experienced**
  - Boiler replacement for space heating, snowmelt and DHW
  - BAS installation, control sequencing
  - Process ventilation optimization
  - Exterior lighting, daylighting controls
  - Gas oven process heating optimization
  - Chiller upgrades
  - Air handling units, thermal equalizers
  - Pumping flow optimization
  - Water efficiency retrofits



**COLORADO**

Energy Office

Energy Performance Contracting

# Key elements of our public sector success

---

- Standardized, state-approved documents
- Pre-qualified ESCOs
- CEO advice and technical support
- Project financing



**COLORADO**

Energy Office

Energy Performance Contracting



# Private sector dynamics in the 5-steps of EPC

---

- Step 1: Introductions and client approval
- Step 2: Client selects ESCO
- Step 3: Investment grade audit and project proposal
- Step 4: EPC execution, project financing, and construction
- Step 5: Measurement & Verification of savings guarantee



**COLORADO**

Energy Office

Energy Performance Contracting

# Other initiatives influencing private sector

---

- CoPACE, Colorado's Commercial PACE Program
- BOMA's launch of a redesigned EPC program
  - Re-launch announcement next week in LA
  - Private-public partnership development
    - LA Better Buildings Challenge
    - State EPC and PACE programs?
  - Advisory Board member
- Investor Confidence Project



**COLORADO**

Energy Office

Energy Performance Contracting





**COLORADO**

It's our nature.™

State of Colorado  
John W. Hickenlooper, Governor

[www.colorado.gov/energy](http://www.colorado.gov/energy)



The Colorado Energy Office



@coenergyoffice



**COLORADO**  
Energy Office

Jeanna M. Paluzzi, EPC Program Manager  
303.866.3464  
[jeanna.paluzzi@state.co.us](mailto:jeanna.paluzzi@state.co.us)