Energize Denver

Executive Real Estate Roundtable (ERER)
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$1.3 billion opportunity in Denver

Why Energy Efficiency in Buildings?

- CHINA
- UNITED STATES
- U.S. BUILDINGS
- RUSSIA
- INDIA
- JAPAN
- GERMANY
- CANADA
- BRAZIL

Total Energy Consumption 2011 (QBTU)
Denver’s Core GHG Emissions Sources

- Commercial and Multi-family Buildings: 57%
- Transportation: 27%
- Single Family Residential Buildings: 14%
- Street Lights: 1%
- Waste: 1%
Climate Change

Days 100°F or hotter in extreme years
Projections for the hottest year in each 20-year period

Future Global Emissions

High Scenario  Very low Scenario

<table>
<thead>
<tr>
<th>Period</th>
<th>High Scenario</th>
<th>Very Low Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967-2016</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>2020-2039</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>2040-2059</td>
<td>44</td>
<td>13</td>
</tr>
<tr>
<td>2060-2079</td>
<td>72</td>
<td>8</td>
</tr>
<tr>
<td>2080-2099</td>
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Air quality in parts of the Northwest reached hazardous levels.
CITY MPG
23
Actual mileage will vary with options, driving conditions, driving habits and vehicle s condition. Results expected to APS, indicate that the majority of vehicles with these estimates will achieve between 10 and 27 mpg in the city and between 26 and 35 mpg on the highway.

HIGHWAY MPG
30
1999 CANARY 2.0 LITER
LI ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM
Estimated Annual Fuel Cost:
$650

For Comparison Shopping, all vehicles listed at COMPACT have been issued mileage ratings ranging from 1 to 51 mpg city and 16 to 31 mpg highway.
Energy Performance?

- Work
- Live
- Study
- Eat
What is benchmarking?

- Benchmarking means measuring the energy performance of a building by comparing it to a large national dataset of similar buildings.
- **ENERGY STAR Portfolio Manager** is a free online tool offered by the EPA.
- 100 is the best and 50 is the national average.
Benchmarking with ENERGY STAR is the industry standard.

![Graph showing cumulative buildings benchmarked and cumulative floor space over the years.](image)
• The Goal: Reduce energy consumption of commercial and multifamily buildings by 10% by the end of 2020 and double that in the following decade.
• Task Force: Property managers, building owners, investors, utility, energy efficiency contractors, affordable housing, hotels, and others. 8 meetings in 2016.
• June 1st 2017 – All buildings over 50,000 square feet reported
• June 1st 2018 – All buildings over 25,000 square feet will report

![Graph showing benchmarking and transparency from 2017 to 2022]

- 2017: Benchmarking and Transparency
- 2018: Benchmarking and Transparency
- 2019: Benchmarking and Transparency
- 2020: Benchmarking and Transparency
- 2021: Benchmarking and Transparency
- 2022: Benchmarking and Transparency

20% Perform or Improve

Re-consider later
What is transparency?

- Gives information to the market to drive competition and investment in energy efficiency.
- We will publish:
  - ENERGY STAR score
  - Weather normalized site EUI (kBtu/ft²)
  - Total GHG emissions (metric tons CO₂e)
- Data will be made available to the public in a clickable, searchable map.
## Energy Saved through Full Transparency

<table>
<thead>
<tr>
<th>City</th>
<th>Program Attributes</th>
<th>Energy Reduction</th>
<th>Annual Energy Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco (2010-2014)</td>
<td>Benchmarking &amp; Transparency</td>
<td>7.9% (over 4 years)</td>
<td>2%</td>
</tr>
<tr>
<td>New York City (2010-2014)</td>
<td>Benchmarking &amp; Transparency</td>
<td>6%-14% (over 4 years)</td>
<td>1.5%-3.5%</td>
</tr>
<tr>
<td>Washington, D.C. (2010-2013)</td>
<td>Benchmarking &amp; Transparency</td>
<td>9% (over 3 years)</td>
<td>3%</td>
</tr>
<tr>
<td>Chicago (2015-2016)</td>
<td>Benchmarking &amp; Transparency</td>
<td>1.9% (over 1 year)</td>
<td>1.9%</td>
</tr>
</tbody>
</table>
Energize Denver Benchmarking Requirement
Who Needs to Comply?

Do you own an individual building greater than 25,000 square feet?

- Yes
  - Do any of the following apply to your building:
    - Has been unoccupied at any point in the year
    - Undergone renovation which required building vacancy
    - Scheduled for demolition
    - Experiencing financial distress
    - Average occupancy is less than 60%
    - Used for primarily industrial or agricultural purposes
    - Energy performance is a confidential business practice
    - Unable to obtain tenant energy data

- No
  - Exempt from all requirements at this point in time

Buildings Not Covered by Energize Denver:
- Single family homes
- Townhouses
- Any individual building under 25,000 square feet

Must benchmark annually
Buildings over 50,000 square feet by June 1st, 2017
Buildings over 25,000 square feet begin in 2018
1) Benchmark the building
   – Portfolio Manager
   – Xcel Auto-upload

2) Generate and submit a benchmarking report to the City of Denver’s Department of Health and Environment
Incentives and Support

- Website with all compliance details
  www.denvergov.org/EnergizeDenver

- 10 Trainings from March-August serving more than 500 building owners and property managers in Denver

- 4 Benchmarking “Jam Sessions” providing 1 on 1 support
  – FINAL SESSION: August 16, 8:30am-2:30pm. 200 W 14th Ave, second floor, Grand Mesa Room

- Free call center to provide education, training and answer questions about benchmarking.
  – email: EnergizeDenver@denvergov.org
    phone: 1-844-536-4528

- Free score cards to building owners with information about incentives and market comparison data. Initial score cards will be sent fall of 2017.
SUPPORTING PROGRAMS
Participants in the Lease for Efficiency Challenge commit to ask one powerful little question of their current property manager and next time their company rents space in Denver: What is the 1-100 ENERGY STAR score of the building?

- 44 tenants 2.5 million square feet
Businesses Renting Space Benefit from Energy Efficiency

• On average, 22% of commercial building operating expenses is from energy use.
• ENERGY STAR certified buildings are 35% more energy efficient than their peers.
• Equivalent to about a 50 cent discount in rent per square foot.
• A recent study showed ENERGY STAR certified buildings have Kingsley tenant satisfaction scores that are 30 points higher than non-ENERGY STAR buildings.
Additional Steps Tenants Can Take

• Reduce energy usage in your business space
• Energy Efficient Leasing
• Energy Efficient Build-out of New Space
HOW TO IMPROVE A BUILDING’S ENERGY EFFICIENCY
• Benchmarking with ENERGY STAR Portfolio Manager (FREE!)

• Energy audit
  – Provides information about building systems efficiency and payback and cost to replace them.

• Evaluate energy saving measures for energy and cost savings
Quick Payback EE Upgrades
(1-3 year payback)

• Lighting Upgrades and Controls
• Tuning Controls (Recommissioning)
• Matching Supply to Demand
  – Variable Frequency Drives
  – Variable-Air-Volume Systems, Demand Control Ventilation
  – Scheduling
• Taking advantage of natural conditions
  – Air economizer
  – Temperature reset values
  – Heat recovery
Longer Payback EE Measures (3-15+ years)

- Controls upgrades
- Heating, Ventilation, Cooling (HVAC) System Upgrades
- Windows
- Insulation
- Ground Source
- Cool Roofs
- Vegetated Roofs
Energy Efficiency Solutions: The Prado
Starting Point - 2014

ENERGY STAR® Progress & Goals Report

The Prado

Primary Property Type: Multifamily Housing
Gross Floor Area (ft²): 214,982
Built: 2001

For Year Ending: December 31, 2014
Date Generated: May 13, 2016

Property Address:
The Prado
300 West 11th Avenue
Denver, Colorado 80204

Property ID: 4345515

- Electricity and Natural Gas Bills: $138,027
• Lighting Features Installed:
  – LED Light Bulbs
  – Motion sensors
  – Dimming features

• Initial Net Cost: $31,386
• Annual Savings: $16,164
• Payback Time: 1.9 years
• Cooling Tower Motor and VFD Installation
• Hot Water Storage Tank Insulation
• Servicing Over 30 Stand Alone Heaters
• Electric and Natural Gas in 2014: $138,027
• Electric and Natural Gas in 2016: $85,407
• Annual Savings: $52,520 or 38%
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Program Overview
C-PACE Background & Structure
What is C-PACE?

- Innovative financing model that provides C&I building owners a smarter way to modernize their buildings:
  - 100% financing (no out-of-pocket expense)
  - Long term (up to 20 years)
  - Lower energy costs
  - Cash flow positive projects
  - No personal guarantees
  - Combine with utility & tax incentives
  - Payment obligation automatic transfer upon sale (akin to sewer assessment)
Eligible Property Types

- OFFICE
- MULTIPLE-FAVOR
- NON-PROFIT
- INDUSTRIAL
- RETAIL
- AGRICULTURE
- HOTEL
Eligible Improvements

- Heating/Ventilation
- Lighting
- Water Pumps
- Insulation
- Solar Panels
- Motors
- Roof
C-PACE Program Structure (cont.)

- C-PACE is designed as an “open source funding model”
  - No state / public funds are available to finance projects
  - Pre-qualified private Capital Providers fund eligible projects

- In cases where building owner does not have a preferred capital provider the Program Administrator may review pre-approved projects with pre-qualified capital providers to determine funding interest

- C-PACE requires owners to receive written consent of mortgage holder
C-PACE Program Background

- 1,030 buildings nationwide
- $400 million in PACE financing

* Courtesy of PACENation
Historical C-PACE Projects

- C-PACE serving broad range of C&I property types & project sizes

- Path of success paved through contractor channel

* Courtesy of PACENation
### Why Owners Like “Power of PACE”

**Typical mid-sized building owners (Class B & C, 10k-100k SF):**

<table>
<thead>
<tr>
<th>Challenges</th>
<th>C-PACE Solutions</th>
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<tbody>
<tr>
<td>Lack capital budget</td>
<td>✓ 100% financing; No out-of-pocket</td>
</tr>
<tr>
<td>Poor credit quality</td>
<td>✓ Project underwriting based on building’s financial health (LTV)</td>
</tr>
<tr>
<td>Limited access to financing</td>
<td>✓ No personal guarantee required</td>
</tr>
<tr>
<td>Inability to increase OPEX</td>
<td>✓ Immediate positive cash flow</td>
</tr>
</tbody>
</table>