Building Energy Benchmarking
An Overview of City and Utility Programs

Andrea Krukowski
Institute for Market Transformation

NECPUC | Stowe, VT | June 17, 2014
Institute for Market Transformation

- National best practices center for design, adoption, and implementation of building energy performance policies in cities
- Policy advisor to state and local governments, federal agencies, the Administration, and industry groups
- One of founding members of Data Access and Transparency Alliance (DATA)
Potential Savings in U.S. Building Sector by Study

Lettered sources in chart are detailed below. Rocky Mountain Institute © 2011. For more information see www.RMI.org/ReinventingFire.
You can’t manage what you don’t measure
Building owners often can’t get energy data for their buildings

Barriers:
• Separately-metered tenants
• Lack of clear procedures
• Utility policies and state privacy laws
• Lack of standardization
Benchmarking Data Needs

Building Owners
- Building physical characteristics
- Building operating characteristics

Utilities
- Building energy consumption
## Current Practices

<table>
<thead>
<tr>
<th>Utility Company (State)</th>
<th>Aggregate Whole-building Data</th>
<th>Automated Upload to Portfolio Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin Energy (Texas)</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Avista (Washington)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>California IOUs</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Commonwealth Edison (Illinois)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Consolidated Edison (New York)</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>National Grid</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>NSTAR</td>
<td>✓</td>
<td>TBD</td>
</tr>
<tr>
<td>PECO (Pennsylvania)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Pepco (District of Columbia)</td>
<td>✓</td>
<td>2014</td>
</tr>
<tr>
<td>Puget Sound Energy (Washington)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Seattle City Light (Washington)</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Utility Data Access Programs

- WASHINGTON
  - Avista Utilities
  - Puget Sound Energy
  - Seattle City Light
  - Seattle Steam
- CALIFORNIA
  - Pacific Gas & Electric
  - Sacramento Municipal Utility District
  - Southern California Edison
  - Southern California Gas Company
  - San Diego Gas and Electric
- ILLINOIS
  - ComEd
- PHILADELPHIA
  - PECO
  - Veolia Energy
- WASHINGTON, DC
  - Pepco
- AUSTIN
  - Austin Energy
- BOSTON
  - National Grid
  - NSTAR
  - Veolia Energy
- NEW YORK CITY
  - ConEd
  - National Grid
  - Department of Environmental Protection

- Mandate requiring utilities to provide energy consumption data for ENERGY STAR Portfolio Manager
Utility Meter Data Sensitivity

Type of energy data
- Residential
- Nonresidential
- Aggregated residential (multifamily)
- Aggregated nonresidential

Timeliness
- Monthly
- Interval Meter
- Real Time

Most likely to raise privacy concerns
Least likely to raise privacy concerns
## Current Practices

<table>
<thead>
<tr>
<th>Utility Company (State) OR Public Utility Commission (PUC)</th>
<th>Account Aggregation Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avista (Washington)</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Consolidated Edison (New York)</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Seattle City Light (Washington)</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Clark Public Utilities</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Commonwealth Edison (Illinois)</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>National Grid (Massachusetts)</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>NSTAR (Massachusetts)</strong></td>
<td>4</td>
</tr>
<tr>
<td><strong>Austin Energy (Texas)</strong></td>
<td>4/80*</td>
</tr>
<tr>
<td><strong>Puget Sound Energy (Washington)</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Pepco (District of Columbia)</strong></td>
<td>5</td>
</tr>
</tbody>
</table>

* Does not apply to multifamily buildings
Utilities Benefit by Supporting Benchmarking

- Customer service
- A gateway to other energy efficiency programs
- Insight into building loads to improve marketing and targeting for energy efficiency programs and inform infrastructure planning
- Data to analyze energy efficiency programs and validate savings
Of those who benchmarked:

- 62% took energy management actions
- 84% planned or implemented energy efficiency improvements
- 81% link improvements to utility efficiency programs
- 82% said utility training had been sufficient to benchmark buildings on their own
Fund True Opportunities

Typical Funding Program

LEAN Approach

Potential Savings

Potential Savings
2012: Within the multifamily sector, the poorest performing buildings use 4 times the energy of the highest performing buildings.

2013: Energy use varies by a factor of about three for multifamily buildings (5th-95th percentile)
Early Findings from Energy Benchmarking in New York

[Fig. 23] Geographic Distribution of Median Multifamily EUI
Source: New York University
Figure 11: 2012 EUI Performance Range and Distributions by Building Type
Momentum is building...

- July 2011: NARUC resolution
- November 2013: NASUCA resolution
- DOE Voluntary Code of Conduct
- Better Buildings Energy Data Accelerator
- PUCs currently considering issue of data aggregation
- More utilities funding efforts through energy efficiency portfolios
That enforce branding

Thank you!
Questions?

Andrea Krukowski
Senior Associate
Building Energy Performance Policy
Institute for Market Transformation
andrea@imt.org