Utility Benchmarking in Multifamily Housing 201: Let Performance Data Drive Your Decisions

Tuesday
2:00-3:15pm
Panelists

- **Speakers**
  - Scott Ledford, ICF
  - Colleen Woodson, BrightPower Inc.
  - Julie Klump, Preservation of Affordable Housing

- **Moderators**
  - David Ruggiero, ICF
Learning Objectives

• In this session, you will:
  • Identify strategies and resources for translating benchmarking results into concrete next steps toward improving property performance
  • Hear from someone who advises multifamily housing providers on utility benchmarking
  • Hear from a multifamily housing provider that has undertaken utility benchmarking
Using Your Benchmarking Results to Make Informed Decisions
Benefitting Your Organization

• There are real, actionable ways to use the information gained from utility benchmarking to benefit your organization:
  • Identify Anomalies
  • Improve Poor Performers.
  • Recognize and Document Best Practices from Top Performers
  • Set Portfolio-Wide Savings Goals
Identify Anomalies

• The results of utility benchmarking are only as good as the data entered into Portfolio Manager.
• Review your organization’s utility data regularly to look for errors and anomalies.
• Portfolio Manager has a number of built-in features that can help you with data quality, including:
  • Metrics “Not Available” messages
  • Alert icons
  • Data Quality Checker
  • Inclusion of selected alerts in custom reports
Identify Excess Consumption

- Portfolio Manager graphs consumption by utility type
- Spikes in consumption can be examined to see if they reflect leaks, billing errors, or equipment malfunctions
Identify and Prioritize Poor Performers

- Housing providers can analyze benchmarking metrics across properties and identify the lowest performers.
- These properties may represent the best place to start with improvements/upgrades.
Improve Poor Performers

• Review your utility benchmarking reports to look for properties that are performing poorly

• Investigate reasons for high energy or water consumption and identify measures that can be taken to improve performance
  • Identify operations and maintenance measures that can generate savings with limited up-front costs
  • Have a building audit conducted, and if warranted, make capital investments to improve performance.
Identify and Recognize Top Performers

- Top performers may be eligible for recognition
- Best practices of top performers can be identified and communicated across the portfolio
Set Portfolio-Wide Savings Goals

- Portfolio Manager includes baseline and target-setting functionality at the property level
- Target metrics can be selected for inclusion in custom reporting templates – allowing you to look at goals across properties
Set Portfolio-Wide Performance Goals

• Looking at your organization’s portfolio as a whole.
  • How is it possible to achieve at least a 20% reduction in energy and water use in a cost-effective manner?
  • What would that mean for your organization’s overall utility costs?
  • What is the average ENERGY STAR 1-100 Score for your organization’s properties?
  • What would happen if your organization were to bring up all under-performing properties to a score of 50 or better? To 75?
Key Concepts for Pursuing Efficiency Improvements

• Consider starting with low- and no-cost energy and water efficiency improvements (and quick fixes)
  • Establish the financial and environmental benefits of utility management
  • Demonstrate the value of these efforts to leadership, staff, and residents
  • Realize significant and rapid savings from operational and behavioral approaches
• Consider how to leverage low- and no-cost savings to help fund more intensive retrofits
• Capital investment needs may be lower when utility waste is reduced through low- and no-cost measures
No-and Low-Cost Energy Saving Tips for Multifamily Housing Common Areas: Need an easy win? These tips from successful ENERGY STAR partners will help your organization start saving energy in common areas and vacant units with little-to-no upfront investment.
No- and Low-Cost Checklist for Saving Energy and Water in Multifamily Housing: For those who are ready to dive in, this checklist provides a more in-depth review of the no- and low-cost energy and water savings opportunities to look for across your organization’s multifamily properties.

<table>
<thead>
<tr>
<th>Category</th>
<th>Measure/Strategy</th>
<th>Status</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>General</td>
<td>Minimize energy and water performance using LEED, ENERGY STAR, and other tools.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Use energy management tools to monitor energy usage and identify opportunities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Take steps to minimize energy and water usage, including:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>- Install weather stripping or sealant on door and windows to eliminate drafts.</td>
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<tr>
<td></td>
<td>- Install window shades or blinds to reduce heat gain in the summer and heat loss</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- in the winter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Regularly inspect the building envelope.</td>
<td></td>
<td></td>
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<tr>
<td>General</td>
<td>Perform a thermal scan to identify thermal transmission and air leakage.</td>
<td></td>
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</tr>
<tr>
<td>General</td>
<td>When working with residents, include discussions on energy and water savings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Instruct staff to turn off unnecessary lights, minimize use of heating and cooling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td>when possible, such as by covering vents with covers, weather stripping, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Turn off water heaters when not in use.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting</td>
<td>Replace all incandescent bulbs, flood lights, and decorative spotlights with</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENERGY STAR qualified compact fluorescent lamps (CFLs).</td>
<td></td>
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</tr>
<tr>
<td>Lighting</td>
<td>Replace incandescent exit sign lamps with LED exit sign lamps.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting</td>
<td>Make bulk purchases of common CFLs, offer residents the ability to purchase these</td>
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<tr>
<td></td>
<td>bulbs at cost or offer to install a new CFL fixture for free.</td>
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Save Energy: Visit this comprehensive section on saving energy in existing buildings, which details best practices for saving energy, engaging occupants, and calculating potential energy savings. Consider the full range of ENERGY STAR and WaterSense qualified products, as well as the ENERGY STAR Service and Product Provider partners who can help to identify, plan, and implement energy-efficiency improvements.
Experiences in Multifamily Utility Benchmarking
Let Performance Data Drive your Decisions

Bright Power
Colleen Woodson, Director of Energy Analysis

www.brightpower.com
About Bright Power

An Intelligence-Driven Framework

FIND
Energy experts pinpoint high-value opportunities via in-depth analysis of every building in your portfolio.

FIX
Practical solutions attack the root causes of wasted energy spend and improve portfolio returns.

FOLLOW
Bright Power tracks every building and the results of every energy project to ensure maximum savings.
Benchmarking Challenges

• Data access
  – Utility data
  – Property information
  – Past project information
  – System information

• Turning Data into Insight
Identifying Opportunities

• Efficiency + Spending
• Trends over time
• Recent projects
• Funding, incentives, or financing
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<th>B</th>
<th>C</th>
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<td>Total use</td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
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<td>141,976</td>
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<td>137,550</td>
<td>149,603</td>
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<td>2011</td>
<td>151,910</td>
<td>135,579</td>
<td>149,760</td>
<td>154,139</td>
<td>178,332</td>
<td>185,668</td>
<td>199,417</td>
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<td>142,944</td>
<td>151,051</td>
<td>148,643</td>
<td>171,411</td>
<td>186,280</td>
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<td>200,319</td>
<td>174,231</td>
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<td>150,025</td>
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<td>136,618</td>
<td>149,584</td>
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</tr>
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</table>

**BP West - 2**
123 ABC St, Portland, OR, 97215

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Owner Energy
**Whole Building**

<table>
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<tr>
<th>Energy Source</th>
<th>Consumption Type</th>
<th>Rate</th>
<th>Cost</th>
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<tr>
<td>Cooling</td>
<td>Whole Building</td>
<td>2.2 BTU/kWhCO2</td>
<td>$402</td>
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<tr>
<td>Heating</td>
<td>Whole Building</td>
<td>13.0 BTU/kWhCO2</td>
<td>$13,251</td>
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<tr>
<td>Electric Baseload</td>
<td>Whole Building</td>
<td>2,451 kWh/yr</td>
<td>$8,421</td>
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<tr>
<td>Fossil Fuel Baseload</td>
<td>Whole Building</td>
<td>6.94 mMBTU/odmryr</td>
<td>$2,553</td>
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<tr>
<td>Water</td>
<td></td>
<td>66.2 gal/odm/day</td>
<td>$18,007</td>
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</table>

**Total Spend**
$40,052
Future

• Data access standards
  – Owner data
  – Whole-building data
  – Individual resident data
• Interval and real-time data
  – California smart meter data
• Software: more than just benchmarking
Julie Klump

Preservation of Affordable Housing
Utility Benchmarking in Multifamily Housing: Let Performance Date Drive Your Decisions

Preservation of Affordable Housing

Julie Klump
Vice President, Design and Building Performance
WHO WE ARE

POAH is a nonprofit organization whose mission is to preserve, create, and sustain affordable, healthy homes that support economic security and access to opportunity for all.
WHERE WE ARE

- Missouri: 1,548 units
- Illinois: 910 units
- Michigan: 579 units
- New Hampshire: 268 units
- Massachusetts: 2,964 units
- Rhode Island: 930 units
- Connecticut: 260 units
- Maryland: 100 units
- Washington, D.C.: 94 units
- Florida: 1,356 units

*Corporate office*
Biggest Challenge in Benchmarking A Property or Portfolio

- 28% All Resident Paid
- 45% Resident Paid Electric, Owner Paid Heat
- 27% All Owner Paid

PRESERVATION OF AFFORDABLE HOUSING
Get The Data You Can
Now What?

Monitor Monthly Anomalies

Prioritize Sites that Need Attention (quarterly or every 6 months)

Use Incentives or Capital Planning to Implement

Measure Effectiveness

Repeat

<table>
<thead>
<tr>
<th>Property Name</th>
<th>Payment Code</th>
<th>Fossil Fuel Spending ($/yr)</th>
<th>Heating Index (BTU/ft²/HD)</th>
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<tr>
<td>Salem Heights Apartments</td>
<td>(O)OOO</td>
<td>$180,877</td>
<td>8.4</td>
</tr>
<tr>
<td>Meadowbrook Apartments</td>
<td>(T)TOO</td>
<td>$136,770</td>
<td>7.2</td>
</tr>
<tr>
<td>Franklin Square Apartments</td>
<td>(T)TOO</td>
<td>$133,582</td>
<td>10.3</td>
</tr>
<tr>
<td>Bay Meadow Apartments</td>
<td>(T)TOO</td>
<td>$124,960</td>
<td>6.0</td>
</tr>
<tr>
<td>8330 On the River</td>
<td>(T)TOO</td>
<td>$114,999</td>
<td>8.3</td>
</tr>
<tr>
<td>920 On the Park</td>
<td>(O)OOO</td>
<td>$107,086</td>
<td>11.3</td>
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<td>Hillcrest Village</td>
<td>(O)OOO</td>
<td>$85,143</td>
<td>2.5</td>
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<td>Sugar River Mills</td>
<td>(T)TOO</td>
<td>$77,939</td>
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<tr>
<td>Kenmore Abbey</td>
<td>(T)OOO</td>
<td>$75,685</td>
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### Future

**All Blocks**

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<th>Type</th>
<th>Temperature</th>
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<td>Heat</td>
<td>77 °F</td>
<td>82 °F</td>
</tr>
<tr>
<td>308</td>
<td>Heat</td>
<td>77 °F</td>
<td>75 °F</td>
</tr>
<tr>
<td>509</td>
<td>Heat</td>
<td>77 °F</td>
<td>74 °F</td>
</tr>
<tr>
<td>309</td>
<td>Heat</td>
<td>77 °F</td>
<td>73 °F</td>
</tr>
</tbody>
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**SO, WHAT’S ALL THE FUSS ABOUT “SMART” METERS?**

![Image of a smart meter and tablet showing temperature settings]

*Image: Nest Thermostat and tablet showing temperature settings. A woman is pondering, asking, “SO, WHAT’S ALL THE FUSS ABOUT “SMART” METERS?”*
Thank you.

Julie Klump
jkklump@poah.org
Today’s Themes

1. From an organizational perspective, what is the number one challenge you face when benchmarking a property/portfolio?

2. How do you use data to identify energy saving opportunities at the property level? What systems or loads do you attack first?

3. Where is the industry in one year, two years and five years? How do we get there?
Questions?
Related Resources

- [HUD Multifamily Utility Benchmarking Toolkit](#)
- [HUD Multifamily Utility Benchmarking Webinar Series](#)
- [ENERGY STAR Frequently Asked Questions:](#)
  - [How Can I Find and Fix Errors in My Data?](#)
  - [What Are Alert Icons?](#)
- [Best Practices Guidance from ENERGY STAR](#)
  - [Low- and No-Cost Energy Efficiency Measures](#)
  - [No- and Low-Cost Energy-Saving Tips for Multifamily Housing Common Areas](#)
  - [No- and Low-Cost Checklist for Saving Energy and Water in Multifamily Housing](#)
Contact Information

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Colleen Woodson
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Thank You

Provide feedback on this session in the new Summit App!

Download the app to your mobile device or go to bbsummit.pathable.com