Valuing the Financial Benefits of Energy Efficiency in the Multifamily Sector

January 27, 2015

Deborah Philbrick, Sr. Research Analyst

ELEVATE ENERGY
Smarter energy use for all

©2014 Elevate Energy
Thank You

Citi Foundation

The Preservation Compact

A Rental Housing Strategy for Cook County

Community Investment Corporation
Agenda

• Study Goals

• Elevate Energy’s Multifamily Program

• Study Design and Findings

• Recommendations

• Q&A with Discussion
Study Goals

- To better understand the ways energy efficiency upgrades effect the income and expenses of multifamily buildings

- Establish a replicable methodology and set of recommendations for future projects
Elevate Makes Energy Efficiency Easy

Elevate Energy is the building owner’s advocate, start to finish.
Typical Buildings
Our Owners and Retrofits

Owners
- 40% of owners upgraded one building
- Naturally occurring affordable* and subsidized

Retrofits
- Boiler replacement & Controls
- Furnace replacement
- Air sealing and insulation
- $58,000 per project, $45,000 to owners after rebates
- 1/3 finance with Community Investment Corporation ($13,935,726 loans to date)
Why Care about the Financial Benefits?

- They are a major selling point to building owners
- The make lending institutions more confident in their loans.
Benefits of Energy Efficiency

- Lower utility bills
- 15-30 percent energy savings
- Lower maintenance costs
- More comfortable home
- Improved HVAC and maintenance
- Connection to financial resources
- High quality installations
- Preserving affordable housing

Nautilus Investments
Estimated savings/year: $23,775
Agenda

- Study Goals
- Elevate Energy Multifamily Program
- Study Design and Findings
- Recommendations
- Q&A with Discussion
Study Design

Pre and post upgrade analysis

- 13 buildings
- Income and expense data from CIC (owner self-reported)
- Retrofit measure and savings data

Comparison of test and control buildings

- 13 upgraded buildings
- 21 buildings with audits but no upgrades

Interviews with building owners

- 5 interviews
## Test and Control Buildings

<table>
<thead>
<tr>
<th></th>
<th>Test Buildings</th>
<th>Control Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Vintage (median)</td>
<td>1920</td>
<td>1928</td>
</tr>
<tr>
<td>Units (median)</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>Master-metered</td>
<td>86%</td>
<td>55%</td>
</tr>
<tr>
<td>Square footage (median)</td>
<td>21,895</td>
<td>28,995</td>
</tr>
<tr>
<td>Total Expenses (median)</td>
<td>$99,766</td>
<td>$67,061</td>
</tr>
<tr>
<td>Average Retrofit Cost</td>
<td>$59,247</td>
<td>-</td>
</tr>
<tr>
<td>Average Out of Pocket Cost</td>
<td>$45,549</td>
<td>-</td>
</tr>
</tbody>
</table>
Findings - Quantitative

- Annual NOI of buildings that had energy efficiency retrofits increased by 1.6% (or $.12 per square foot)
Findings - Quantitative

- Gas costs decreased by almost 25% and usage decreased by 17% in the pre and post-retrofit analysis.

- Rental income increased in 70% of the test buildings post-retrofit

- Rental income increased by almost $400 per unit
5 Building Owner Interviews

- Conducted by Energy Analyst
- No monetary incentive
- Were only reminded of savings % when asked
- Asked questions regarding their motivations for the retrofit and any benefits that they’ve seen
Interview Findings

Building Owners Noted

- Reduction in operations and maintenance costs*
- Less complaints regarding draftiness
- Smaller utility bills
Insights from the Owners

Building Owner Concerns

• Turnover costs
  • Could range from a few hundred dollars to a few thousand

• Vacancy rates

• Tenant comfort
Energy Efficiency Savings facilitated Capital Improvements

- “Two of the buildings that needed new parkways where I have parking, I ripped out all the concrete and put new parking pads. They’re parking for 5 cars, so it’s a big area that I had to do – around $10,000 at each building. Which let me have the money to do that, just with the increased savings.”
On not raising rents and the split-incentive

• “You’ll have less turnover, you’ll be able to keep certain tenants for longer, even though they’re paying less rent...I would say that’s your biggest asset, is that it provides you stability. I mean you can always rebuild your tenant base. But you have to have a core group of tenants, even in a troubled area. So I think it’s always important to be able to hold on to that, and make it a little more affordable for them, at least that’s how we view it.”
Recommendations

For lenders offering energy efficiency loan products
- Utilize sector-wide standards for reporting financial data
- Require annual energy usage and cost data

For energy efficiency programs
- Benchmark financial performance as well as energy usage (pre-upgrade)
Recommendations

For building owners

• Utilize automated energy data access platforms
• Re-appraise when possible

For all stakeholders

• Track tenant turnover and vacancy rates
Do you think quantifying financial benefits is more important to building owners or financial institutions?

Collecting data is costly and time consuming. Would you be willing to collect it? Only certain fields?

What’s the easiest way you’ve found to track vacancy rates and turnover costs?

What are the linchpins to leveraging the financial benefits of energy efficiency?
Thank You for Attending-- Stay in Touch

Deborah Philbrick
Deborah.Philbrick@elevateenergy.org

ElevateEnergy.org

@elevate_energy
Facebook/elevateenergy
LinkedIn