

Benchmarking Multifamily Building Energy Use

EEBA Excellence in Building Conference,
Sept. 25, 2014



ELEVATE ENERGY
Smarter energy use for all



Presentation Topics

- A little about Elevate Energy
- Benchmarking in our multifamily program
- Benchmarking by partners in MI and PA

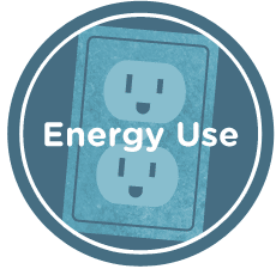


Our Mission

We promote smarter energy use for all.



We give people the resources they need to make informed energy choices.



We design and implement efficiency programs that lower costs, and protect the environment.



We ensure the benefits of energy efficiency reach those who need them most.



Areas of Focus

- Smart grid benefits and dynamic electricity pricing in **homes**
- Energy efficient **buildings**
- **Community**-level programs
- Research, policy and innovation





Finding Our Wheelhouse



Our goal: Preserving affordable housing and improving the environment via reducing energy use

- Focused on low/moderate income areas
- Older courtyard 30-unit buildings were common in our target areas and generally inefficient



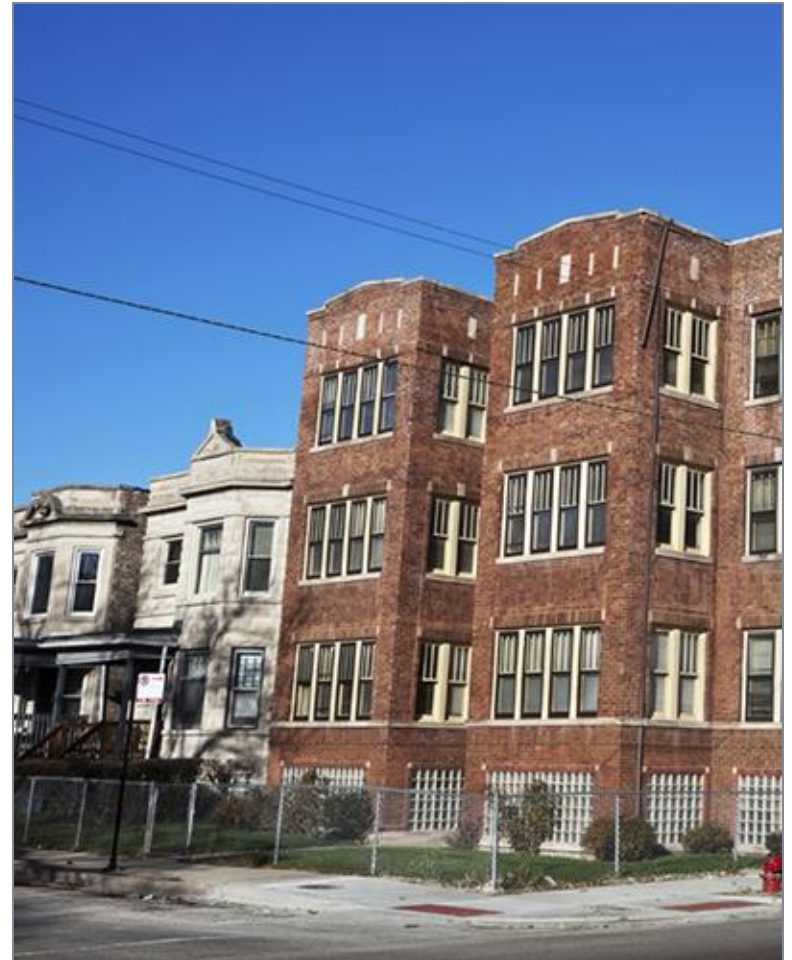
Energy Efficient Buildings

Multifamily buildings:

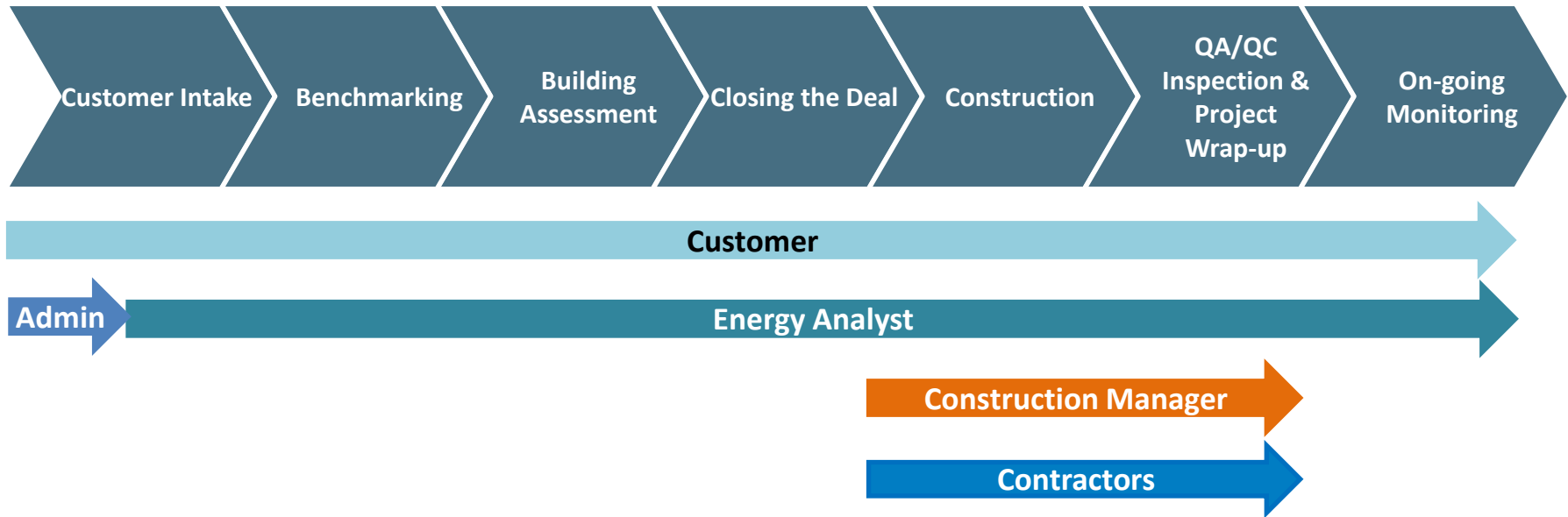
- More than 19,000 units retrofitted
- More than 4.5 million therms and 12 million kWh saved
- Typical savings of 30%

Expanding to serve additional building types:

- Small multifamily
- Nonprofit organizations

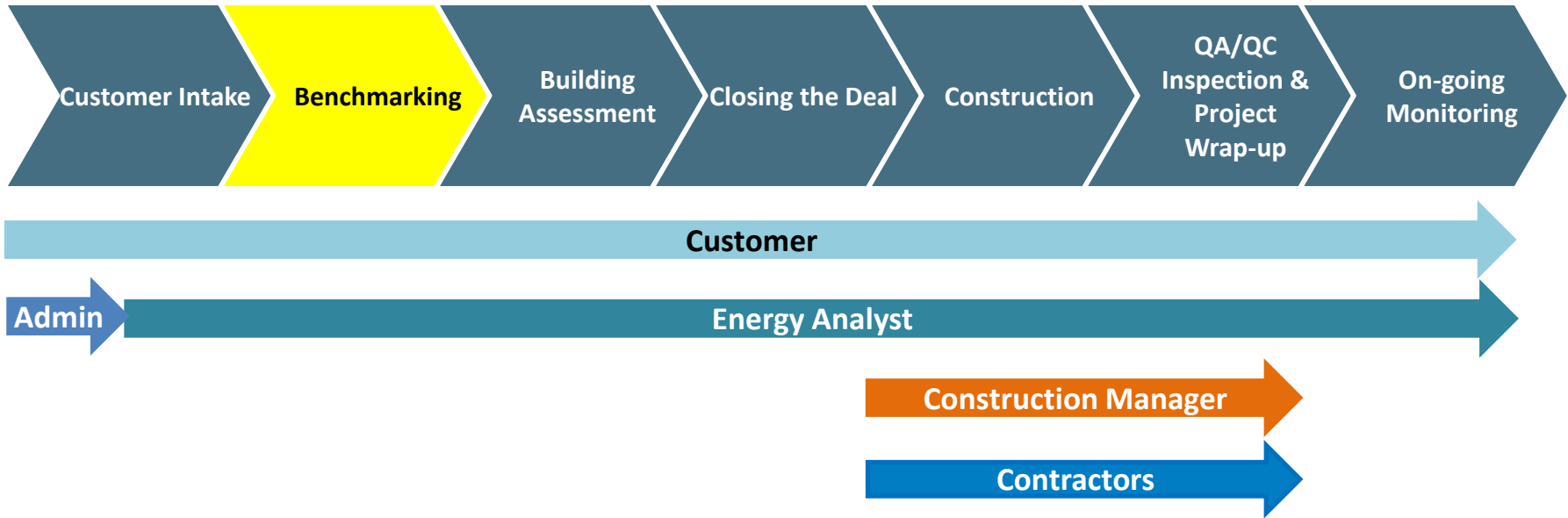


Elevate Energy's one-stop-shop is a proven, streamlined process that addresses the challenges of building owner engagement

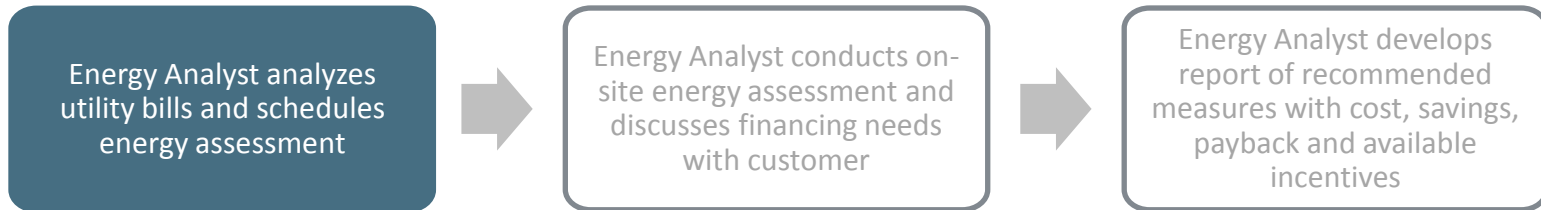


- *Streamlined process to help owners access all services*
- *High quality customer service through a single point of contact*
- *Strong construction management with 100% QA of jobs*
- *Robust data to support energy savings and monitor post-retrofit results*

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Benchmarking & Building Assessment:

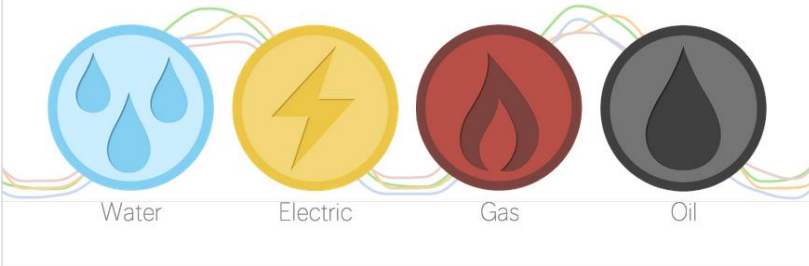


Consistent, reliable data is a strategy to engage building owners in energy use of their buildings

Using Benchmarking to Identifying Outliers and Targets

wegowise

We help you lower your utility bills.

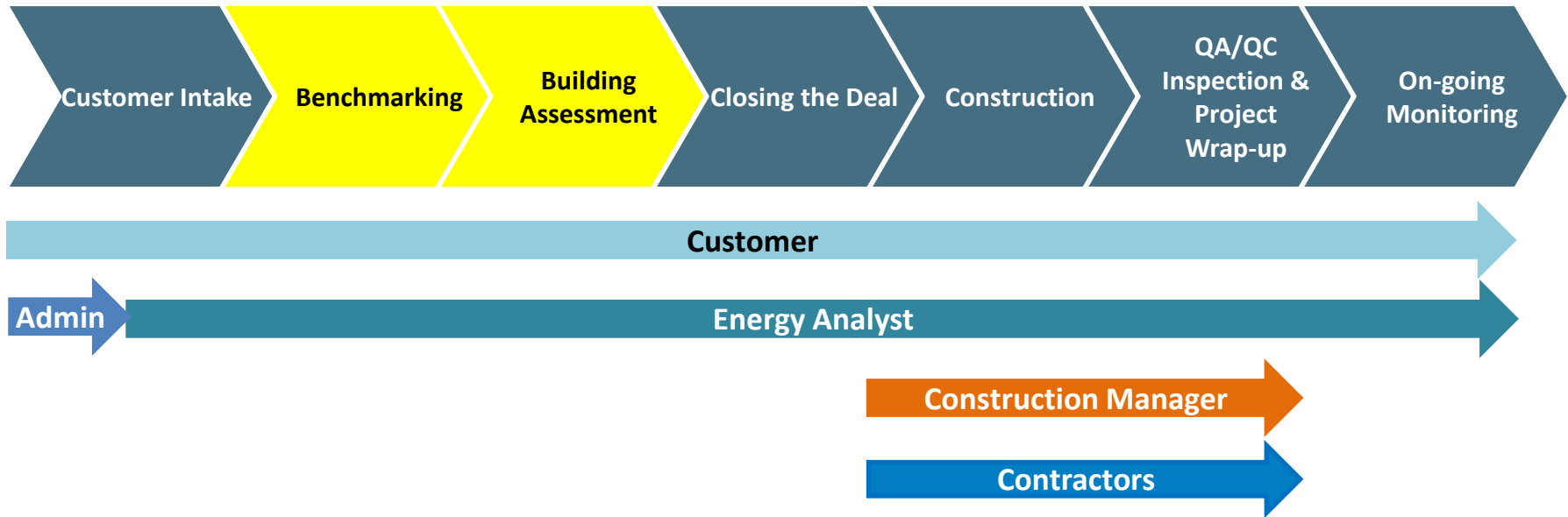


Electricity use in kWh per square foot

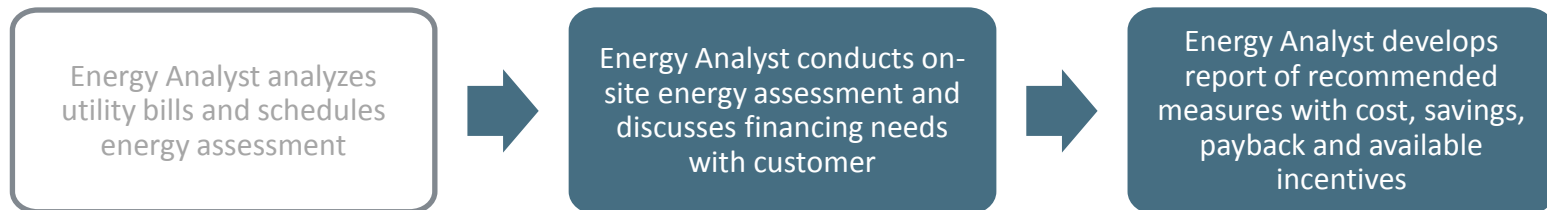
Show me everything Full Building Usage Common Area Apa

Name	Full-Year Sum	Det
78 Jaskolski Traf...	25.9	
22 Rohan Lights	23.5	
43 Pfannerstill Glen	22.4	
46 Alexa Meadows	19.9	
22 Kuphal Land	14.7	
32 Keven Courts	13.6	
85 Harry Pike	13.5	
26 Hyatt Ports	12.7	
85 Russell Exp Way	11.8	
27 Block Rest	11.8	
21 Lurline Burgs	7.07	
18 Kozey Streets	6.5	
48 Joanne Forest	5.72	
49 Daniel Pass	5.45	
25 Central St	5.16	
10 Patricia Parkways	2.32	

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Benchmarking & Building Assessment:



Why is the Assessment Important?

- It creates the foundation of the relationship with the decision maker
- Provides an opportunity to:
 - Get rare face time and their complete attention
 - Show your technical competence
 - Educate the decision-maker on EE
 - Understand and address their problems and needs
 - Tell them how great your program is
- A good assessment, with a solid business case for retrofit, will almost always result in success



Elevate provides building owners with a summary of the energy savings opportunities

energy savers

A one-stop energy efficiency shop for multifamily building owners

Energy Assessment & Recommendations

Completed for: Illinois Apartment
2000 W Illinois
Aurora, IL



Total projected energy savings

Estimated current yearly natural gas usage
- Estimated post-retrofit yearly natural gas usage
Estimated yearly natural gas cost savings

Table 1 Recommended retrofits

Recommendation	Cost (\$)	Savings (therms/year)	Savings* (kWh/year)	Savings* (\$/year)	Simple payback (years)	Retrofit lifetime (year)	SIR
1. Insulate all accessible heating hot water pipe with all sleeve jacket fiberglass (R-6)	3,200	700	-	700	4.6	25	5.5
2. Roof cavity: Air seal roof cavity perimeter and all penetrations, gaps and bypasses with foam, and insulate with blown-in cellulose (R-49)	64,000	12,600	-	12,600	5.1	25	4.9
3. Insulate all accessible domestic hot water pipe with all sleeve jacket fiberglass (R-4.5)	800	150	-	150	5.3	25	4.7
4. Install low-flow shower heads (1.5 GPM) and faucet aerators (1.5 GPM kitchen, 1.0 GPM bathroom)	12,800	5,300	-	5,300	2.4	10	4.1
5. Install new high-efficiency (90%+ AFUE) heating hot water boiler with indoor averaging temperature sensors and outdoor cutoff	105,000	12,600	-	12,600	8.3	20	2.5
6. Convert incandescent exit sign bulbs to LEDs	4,900	-	8,750	875	5.6	10	1.8
7. Install new high efficiency (90%+ AFUE) domestic hot water heater	45,000	2,900	-	2,900	15.5	20	1.3
TOTAL	\$235,700	34,250	8,750	\$35,125	6.7	-	-

* Assumes \$1.00 per therm of natural gas or \$0.10 per kWh of electricity. 1 therm = 29 kWh

We summarize the incentives to provide a complete picture of the opportunity

Table 2 Rebates for select measures †

Rebate	Estimated rebate (\$)	Cost after rebate (\$)	Cost reduction (%)	Simple payback after rebate (years)	SIR after rebate
Heating hot water pipe insulation Nicor Gas Energy Efficiency Rebates Minimum of 1-inch thick insulation	320	2,880	10%	4.1	6.1
Roof cavity insulation Nicor Gas Business Custom Incentive Program \$1.00/thermsaved	12,600	51,400	20%	4.1	6.1
DHW pipe insulation Nicor Gas Energy Efficiency Rebates Minimum of 1-inch thick insulation	320	480	40%	3.2	7.8
Showerheads and faucets Nicor Multi-Family Home Energy Savings Program Direct installed at no cost to owner	12,800 Value	Free Direct Install			
Heating Hot Water Boiler Replacement Nicor Gas Energy Efficiency Rebates \$5,000 per boiler, AFUE must be 90%+	20,000	85,000	19%	6.7	3.0
LED exit signs ComEd Small Business Program Requires pre-inspection	2,450	2,450	50%	2.8	3.6
DHW replacement Nicor Gas Energy Efficiency Rebates DHW must be 90%+ AFUE; ≥ 75 MBH	300	44,700	1%	15.4	1.3

† Rebate amounts are estimated. Actual rebate amount may vary.

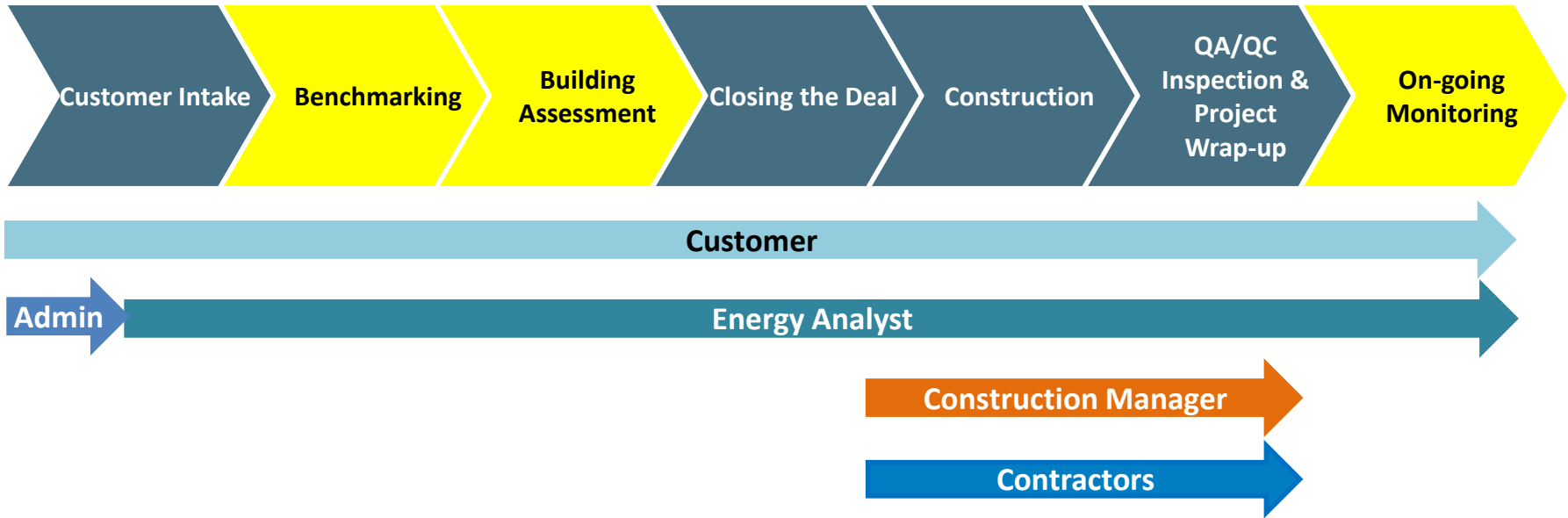
Prescriptive Rebates: <http://nicorgasrebates.com/index.php/bus/rebate-information>

Custom Rebates: <http://nicorgasrebates.com/index.php/bus-custom/custom-welcome>

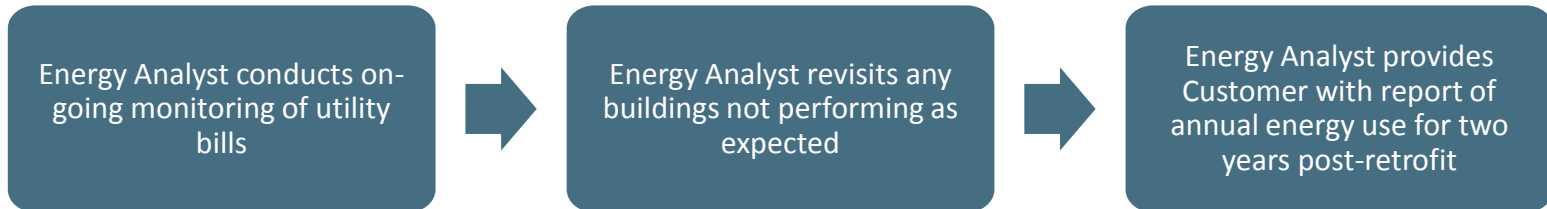
Direct Install: <http://www.nicorgasrebates.com/programs/mfhes>



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On-going Monitoring:

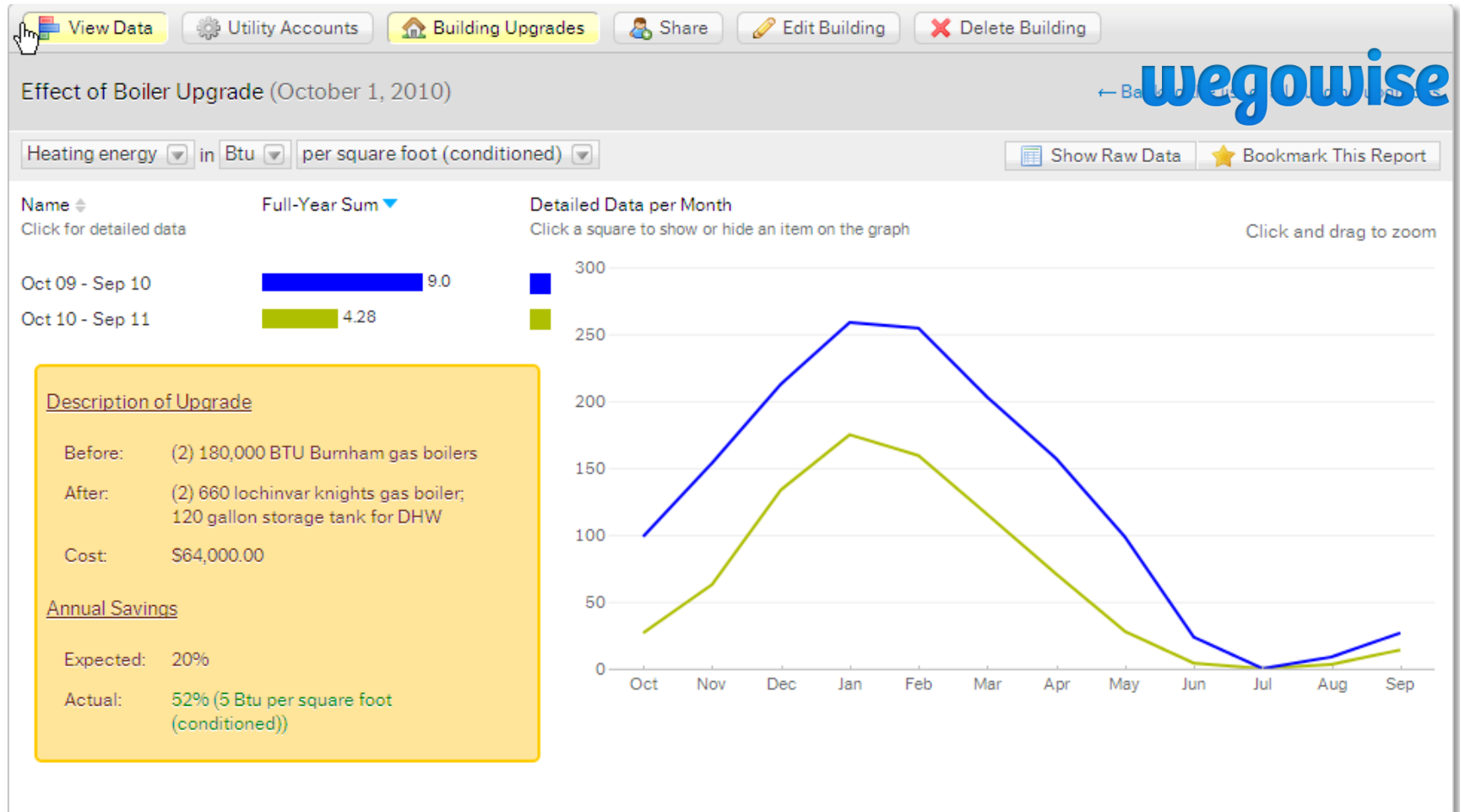


Monitor energy use to ensure savings and optimize performance

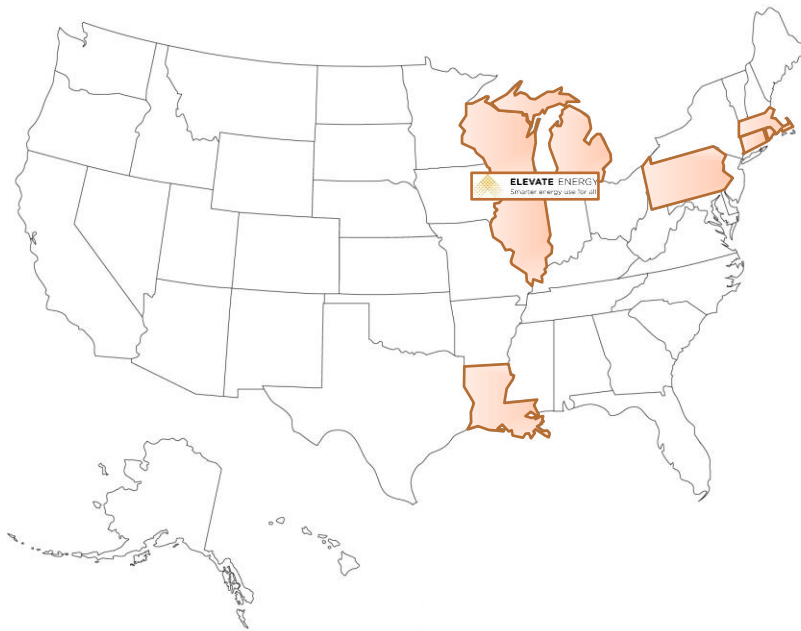
- Energy Analyst monitors energy use to ensure savings by reviewing energy bills
- Energy Savers provides annual progress report on savings for two years following the upgrade
- If savings are not being met, Energy Savers will revisit the building to perform a tune-up or additional maintenance training/education



Monitor energy use to ensure savings and optimize performance



Elevate is currently developing programs in 8 states.



We believe that to fully address this untapped and underserved market, new ways of thinking and working together are necessary.

Connecticut

Elevate is partnering with New Ecology, Inc. (NEI) to provide technical support to affordable multifamily buildings applying for CEFIA and PACE energy efficiency financing products.

Michigan

Michigan Energy Options with support from Elevate is developing and implementing a Consumers Energy pilot to provide affordable multifamily building owners with a full-suite of energy efficiency services starting from the assessment through post-retrofit monitoring.

Pennsylvania

Elevate is supporting the expansion of ACTION-Housing's The One-Stop multifamily energy efficiency program by growing its pipeline of interested building owners.

Illinois and Wisconsin

Chicago-based Elevate Energy operates a multifamily energy efficiency program in Illinois and is partnering with Wisconsin Focus on Energy to enhance their program offering.

Massachusetts and Rhode Island

Elevate's Boston-based partner NEI provides energy efficiency and green services to multifamily buildings in Massachusetts and is expanding to Rhode Island.

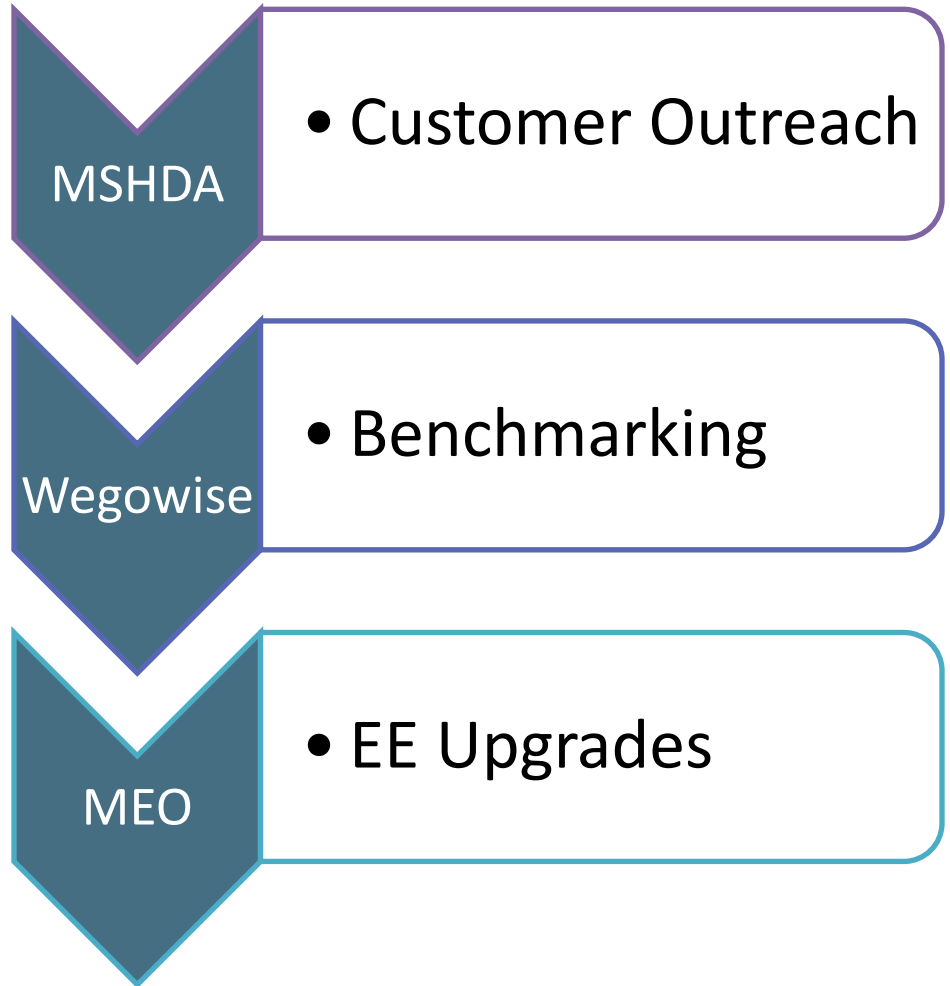
Louisiana

Elevate and NEI are partnering with Green Coast Enterprises in New Orleans, LA to establish retro-commissioning and energy management services.

Benchmarking in Michigan



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Benchmarking in Pennsylvania

Benchmarking



Multifamily buildings in Pennsylvania
(Photo Courtesy ACTION Housing)

Energy
Assessment

wegowise

**ACTION-
Housing
Inc.**



Benchmarking in Missouri

We're starting now! Interested?



wegowise

Source: propertymanagementinsider.com

Owners curious about having their multifamily affordable buildings benchmarked for *free* should contact:

Louise Sharrow - Louise.Sharrow@elevateenergy.org or 773-278-0862



Questions? -- Stay in Touch

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