



Empowering you to make  
smart energy choices

# Energy & Water Benchmarking for Multifamily Housing July 30, 2018



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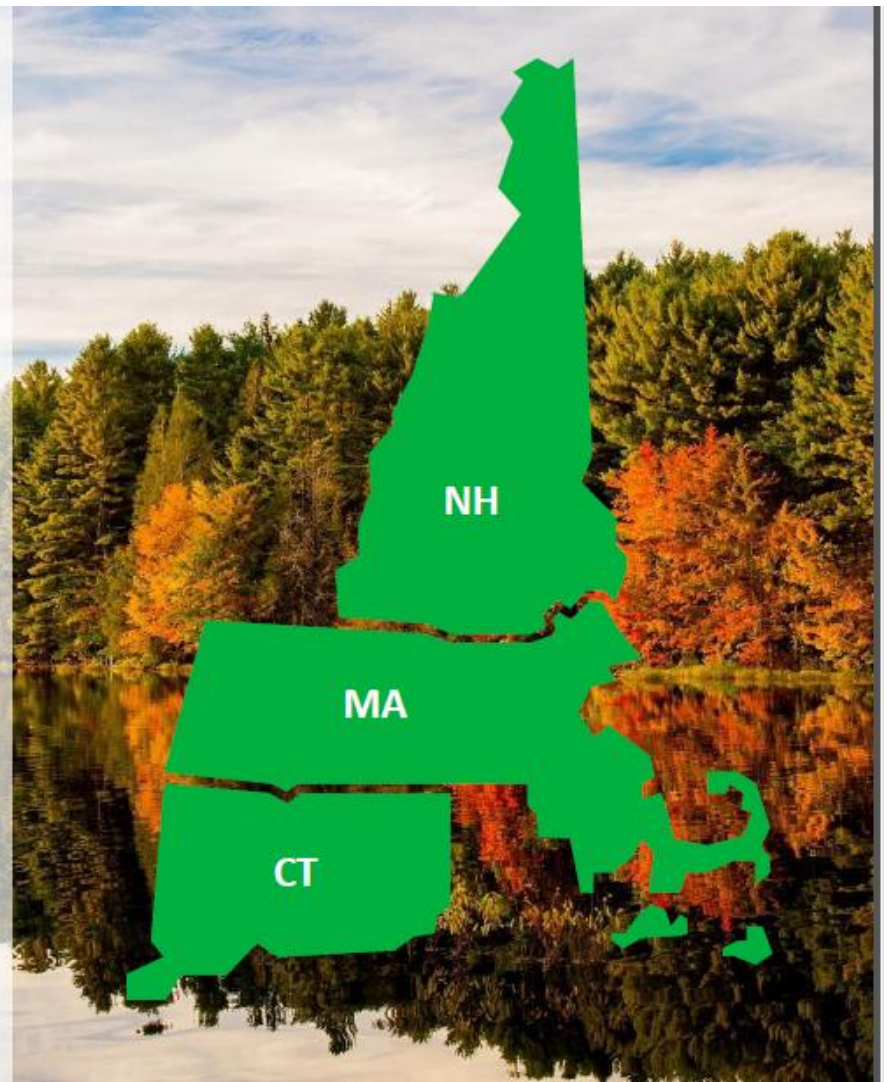
UIL HOLDINGS COMPANIES

# EVERSOURCE: #1 Energy Efficiency Provider in New England

- 3 states
- 3.6m customers
- 8,000 employees
- \$500m+ annual EE investment

 **Ceres #1 Ranking**  
*Mobilizing Business Leadership  
for a Sustainable World*

**ACEEE**  
American Council for an Energy-Efficient Economy



# Funding For EnergizeCT Programs

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- Funded primarily by electric and natural gas customers
  - Electric customers pay three mils
  - Natural gas programs are funded through firm gas customers
- Other Funding Sources
  - Regional Greenhouse Gas Initiative (RGGI)
  - Forward Capacity Market
  - American Recovery and Reinvestment Act (ARRA)

# Goals of the Multifamily Initiative

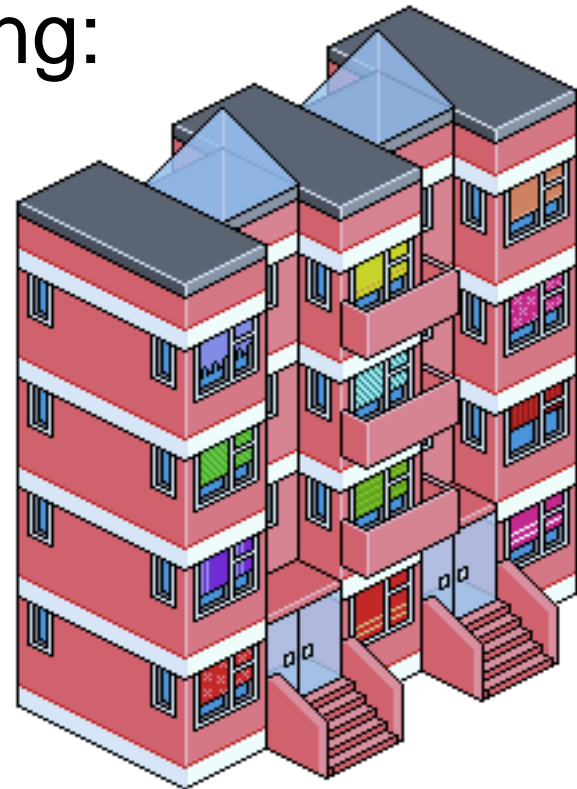
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- To provide resources for energy efficiency, renewable energy and related improvements to multifamily segment customers
- To implement cost effective, comprehensive projects
- To combine elements of residential and commercial program analytics and incentive structures for one seamless offering, increasing ease of participation for the customer.

# Eligible Multifamily Property Types

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- Any multifamily property with 5+ units
- Not-for-profit, market rate and income eligible customers, including:
  - Private owners / landlords
  - Housing authorities
  - Housing associations



# Customer Eligibility

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- **Market rate** – no tenant income restrictions
- **Income eligible** – two-thirds of the property's residents are at or below 60% of the state median income (“SMI”)
  - Subsidized housing (e.g. Section 8)
  - Housing for disabled veterans
  - Housing for elderly
  - Group homes
  - Residential treatment facilities

# What motivates property owners?

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Why do they approach energy efficiency in their properties?

- Energy savings = reduced operational cost
- Capital improvement budget over the next 5 years
- Maintenance related issues looking to solve
- Owners sustainability and environmental stewardship at the property
- Refinancing the property and incorporating a budget for improvements

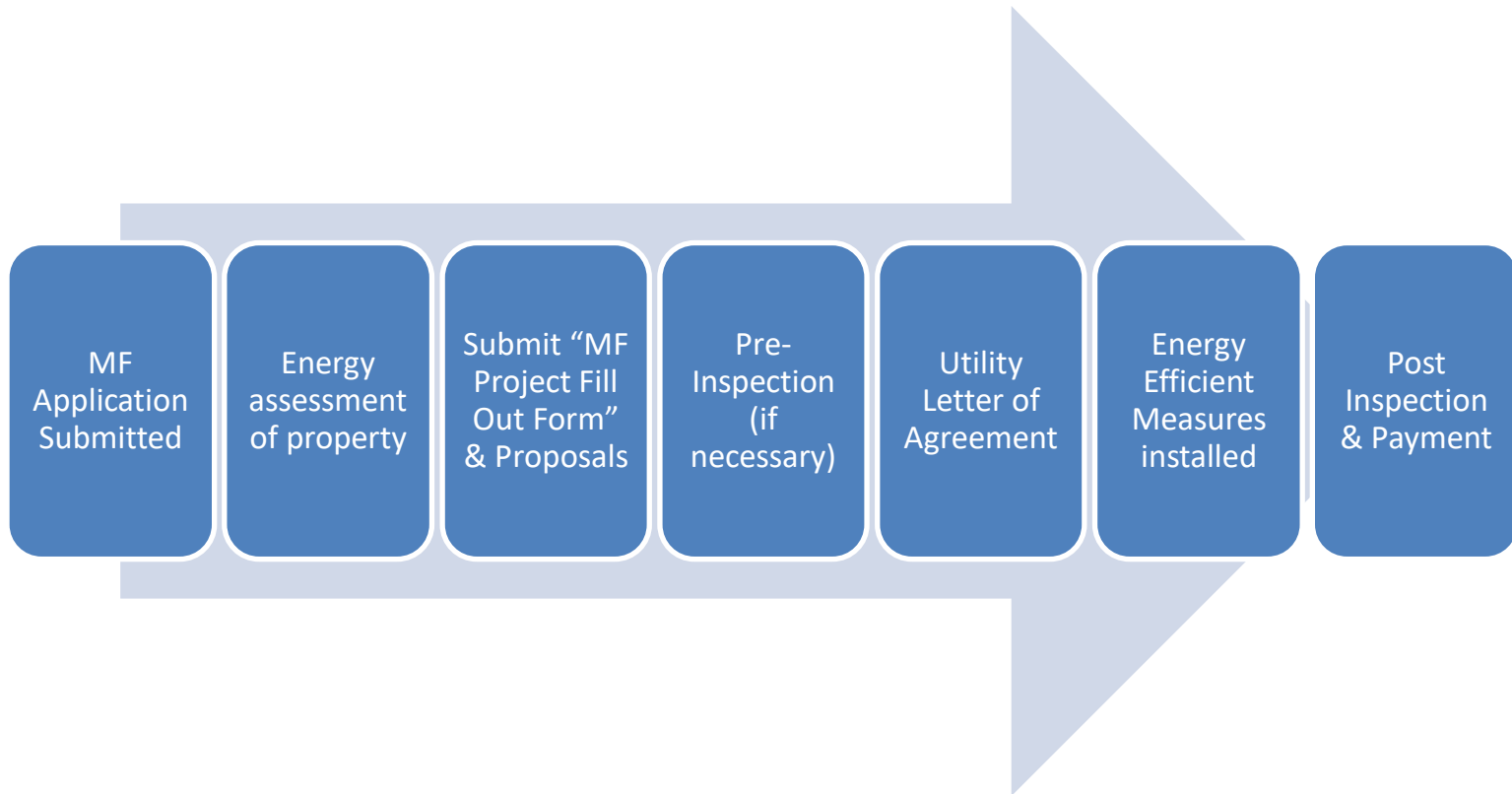
# Improvements to Consider

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- Building Envelope
  - Air sealing
  - Duct sealing
  - Insulation
  - Windows
- Equipment Upgrades
  - Boiler & furnace
  - Hot water heaters
  - Air conditioners & heat pumps
  - ECM circulator pumps (heat loops and DHW recirculation)
  - Appliances – Refrigerators, Dishwashers, Clothes Washers
- Lighting
  - LED screw-in bulbs
  - LED dwelling unit fixtures
  - LED exterior & common area fixtures
- Water Saving Measures
  - Reduced flow showerheads
  - Reduced flow faucet aerators
- Controls
  - Boiler reset controls
  - Occupancy sensors on lighting
  - Variable speed drives on HVAC
  - WiFi thermostats



# Multifamily Retrofit Project: Standard Process Flow



# Multifamily Retrofit Measure Components



## Direct Install Dwelling Unit Measures

- Air sealing
- Low-flow faucet aerators & showerheads
- LED Light Bulbs



## Other Measures

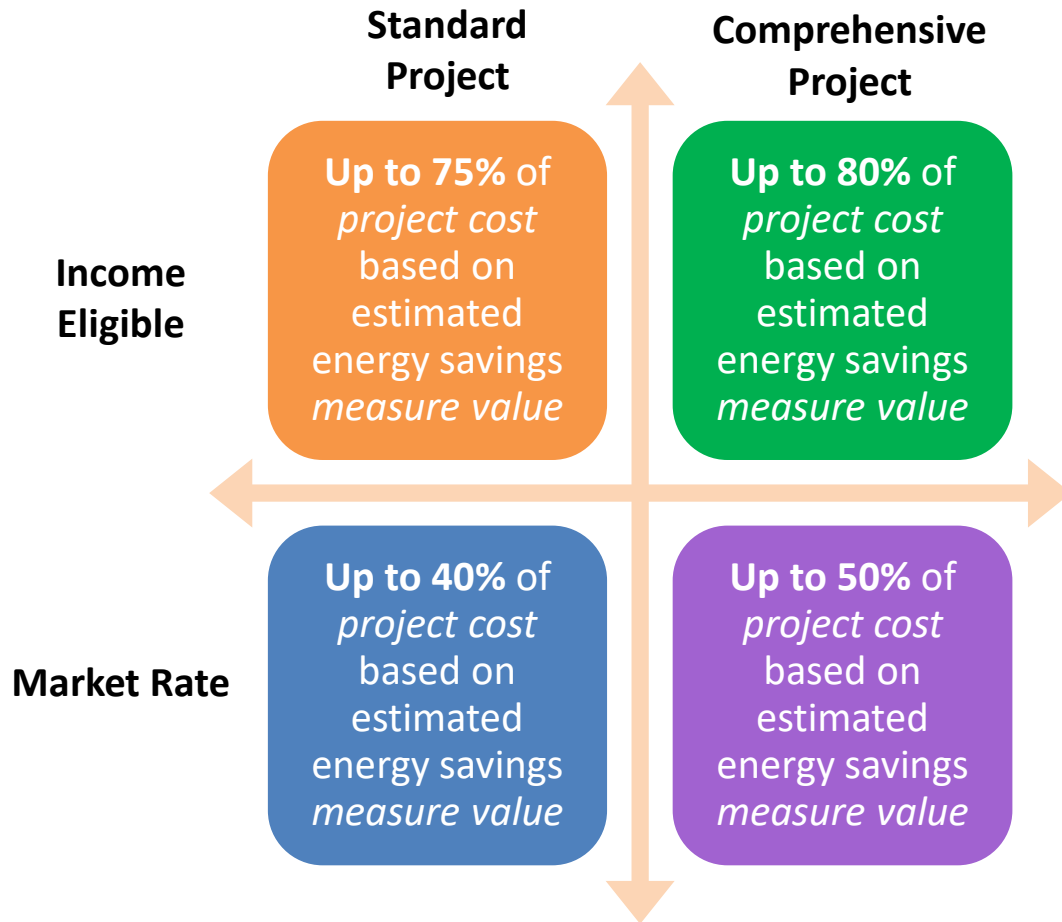
- Lighting Fixtures
- Insulation
- HVAC
- Water Heaters
- Windows
- Appliances
- Controls



## Examples of Deep Measures

- Steam Trap Studies
- Central HVAC Pipe Insulation
- Central Mechanical Ventilation (retro commissioning or duct sealing)
- VFDs/ECM Pumps
- Triple pane windows
- Thermostatic Radiator Valves (TRVs)
- Advanced Lighting Controls (data logging)

# Multifamily Retrofit Incentive Structure



# Case Study: Past Participating Glastonbury Projects

## Hales Farm Condominium – 100 Oxbow Drive

- Customer initiated project
- Eversource Electric and CNG Natural Gas – utilities serving the property
- Market Rate – 10 Buildings, 203 units
  - Natural gas heat & DHW – central boilers serve multiple dwelling units
  - Electric – individually metered, tenant paid

	Measure Upgrades	Installed Cost	Incentive	Annual kWh Savings	Annual CCF Savings
1	Exterior & Common Area Lighting	\$12,800	\$6,400	28,908	
2	Central Boilers and DHW Heaters	\$239,017	\$41,600		12,059
3	ECM/Variable Speed Circulator Pumps	\$65,858.30	\$11,380	26,647	
4	Comprehensive Bonus Incentive		\$1,297		
<b>TOTAL COST &amp; SAVINGS</b>		<b>\$317,675</b>	<b>\$60,677</b>	<b>55,555</b>	<b>12,059</b>

# Case Study: Past Participating Glastonbury Projects

## Naubuc Green Apartments – 193 Welles Street

- Customer initiated project
- Eversource Electric and CNG Natural Gas – utilities serving the property
- Income Eligible Senior Housing – 1 Buildings, 110 units
  - Natural gas heat & DHW – central boilers serve multiple dwelling units
  - Electric – individually metered, tenant paid

Measure Upgrades		Installed Cost	Incentive	Annual kWh Savings	Annual CCF Savings
1	Exterior & Common Area Lighting	\$51,438	\$44,714	69,530	
2	Tenant Unit Air sealing	\$19,404	\$19,404		2,333
3	Tenant Unit LED Light Bulbs	\$9,235	\$9,235	26,626	
4	Tenant Unit DHW Savings – Faucet Aerators & Showerheads	\$2,242	\$2,242		971
<b>TOTAL COST &amp; SAVINGS</b>		<b>\$83,638</b>	<b>\$76,914</b>	<b>96,156</b>	<b>3,304</b>



Cover Key:  
 Direct Install Measures =   
 Other Measures =

# Contact Information to Submit Project:

## Eversource:

Multifamily Initiative Team

[enoch.lenge@eversource.com](mailto:enoch.lenge@eversource.com)

(860) 665-5369

## UI / SCG / CNG:

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# Questions

**EVERSOURCE**  
ENERGY



UI



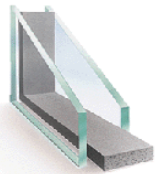
SCG



CNG

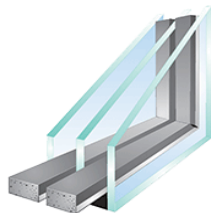
# Market Transformation Measure Case Study: The Triple Pane Window Story

- Renovation projects considering new windows
- The need: first-generation double pane windows installed in the 70's & 80's. These windows have broken seals, deteriorating sashes, and are inoperable
- MF Initiative covered 100% of the cost to difference to go from Estar double pane to triple pane with U-value 0.21 or better
- From 2015 to 2017 over 50 window projects completed in CT MF Initiative. Totaling over 14,000 windows & \$1.7 million in incentives



Double Pane

VS



Triple Pane

Utilities have help remove these two barriers. Manufacturers and supplier have supported this.

Double Pane Windows	Triple Pane Windows
<ul style="list-style-type: none"> <li>✓ Cost less than triple pane windows</li> <li>✓ Can reduce up to 50% heat loss from existing windows</li> <li>✓ Performs best with a fiberglass frame</li> <li>✗ Less energy efficient</li> <li>✗ Less durable than a triple pane unit</li> </ul>	<ul style="list-style-type: none"> <li>✓ Up to 30% more efficient than double pane</li> <li>✓ Saves up to 2-3% on heating bills</li> <li>✓ Less window condensation</li> <li>✓ Fewer noticeable drafts</li> <li>✓ Heavy weight makes stronger &amp; longer life</li> <li>✗ More expensive</li> <li>✗ Some companies overcharge for triple pane windows</li> </ul>