



Empowering you to make  
smart energy choices

***Presented by:***

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# 2015 Residential New Construction (RNC) Program



Empowering you to make  
smart energy choices



UIL HOLDINGS COMPANIES

# What is Energize Connecticut<sup>SM</sup>?

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- Statewide branding initiative to promote the use of clean, affordable energy.
- Energize Connecticut programs are a partnership of the Energy Efficiency Fund, the Clean Energy Finance and Investment Authority, the state, and local electric and gas utilities
- Programs funded by a charge on customer energy bills



# Residential Programs

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- Home Energy Solutions (HES)
- HES Income Eligible
- Home Performance with EStar
- Retail Lighting
- HVAC Rebates
- QIV
- Residential New Construction (RNC)



# RNC Options

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- RNC Core Program
  - HERS Rating
  - Prescriptive Rebates
- Mutli-Family Whole Building Performance
- Duct & Envelope Testing Rebate

*Options for any type of  
residential new construction!*



# Agenda

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- RNC program stats
- Why HERS Ratings?
- 2015 rebate amounts & program changes
- Application process and program rules
- **Panel discussion with RNC Builders**
- Code required duct and envelope testing rebate
- Multi-Family High Rise Program Structure
- CT Zero Energy Challenge

# We want to hear from you...

- Think throughout this presentation...what are things that could make RNC a better program
- For example:
  - Change structure (utility pays for HERS rater)
  - Marketing stipend for builders committing to EStar



# 2014 Program Results

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- Total Units Completed: 1,519
  - **33% market share of total permits issued in CT**
- Electric Savings
  - Annual kWh: 3,096,762
  - Lifetime kWh: 49,174,112
  - Average Annual kWh savings per home: 2,038
  - Average Lifetime kWh savings per home: 32,373
- Gas Savings
  - Annual CCF: 203,297
  - Lifetime CCF: 4,591,155
  - Average Annual CCF savings per gas home: 175
  - Average Lifetime CCF savings per gas home: 3,954

# Stats: 2014 RNC Program

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- 258 units - Single Family Homes
- 1,261 units Multi-Family & Single Family Attached
- Participation is up to 33%! From 2011-2013 market share was at 25%
- 14% market share is EStar 3.0 Certified Homes
- Fact: Of the 258 participating RNC single family homes completed in 2014, 91 had geothermal or ductless heat pumps. That's 35%!





# 2015 Budget



Company	Budget \$
Electric (CL&P and UI)	\$2.27 million
Yankee Gas	\$974,297
Connecticut Natural Gas	\$428,443
Southern Connecticut Gas	\$330,790
<b>TOTAL</b>	<b>\$4,003,530</b>

- Stat: 1,922 units currently signed up under the program (estimated completion 2015)

# 2015 Residential New Construction Program

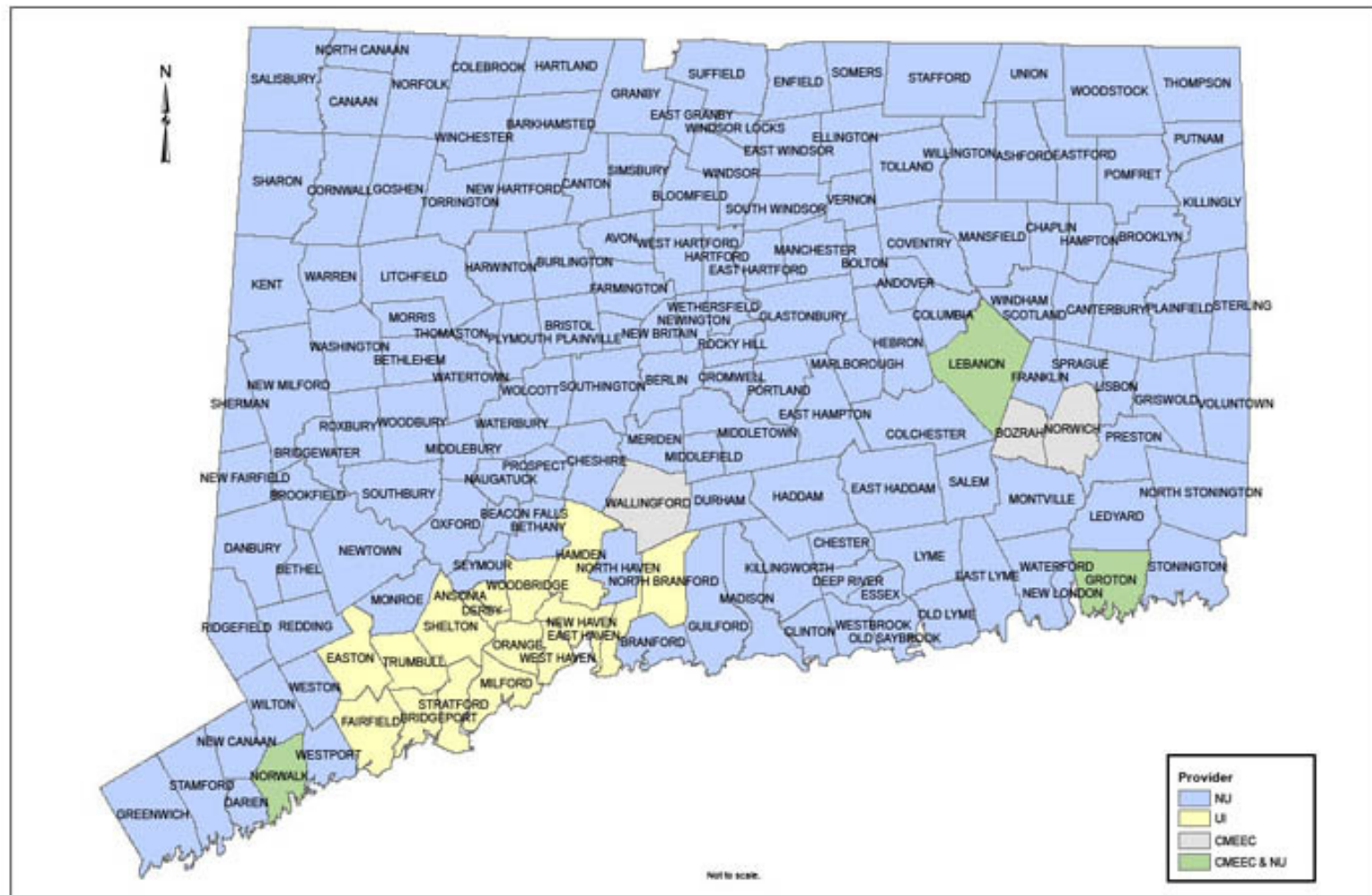
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## Who IS eligible?

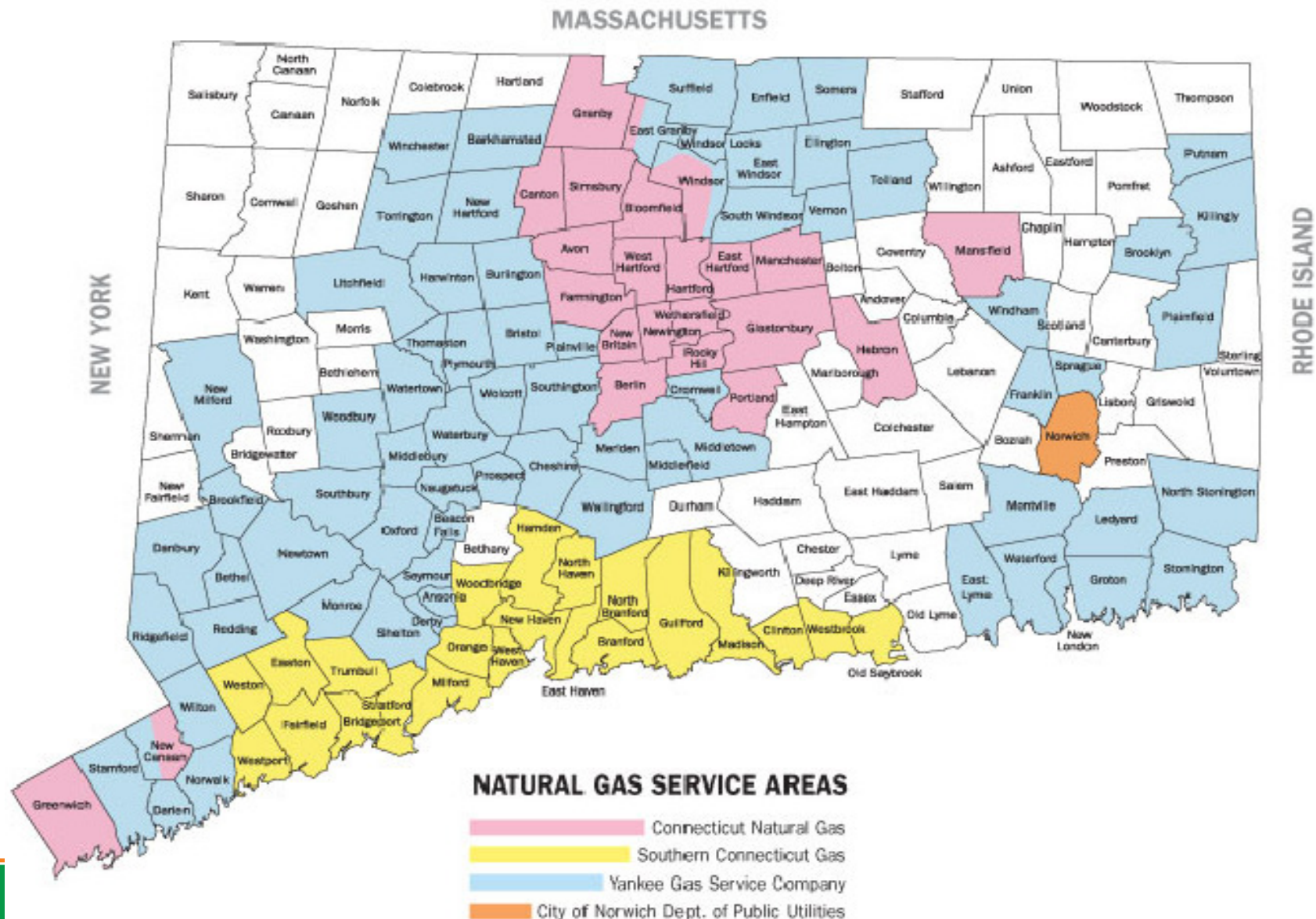
- Builders and homeowners building new homes or gutting an existing building to the studs in Eversource or UI territory
- Single family, Single-family Attached, Multi-family housing
  - Low income housing is eligible for additional 25% of incentives
- Homes of all heating types are eligible
  - Propane and oil are now eligible for full rebate amounts

**Note:** Applications will **NOT** be accepted for completed homes or once insulation has been installed in the home.

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# Service Territory Map: Natural Gas



# RNC Building Type participation

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- Single family
- Single-family Attached (side by side units only)
- Multi-family housing (based on EStar standard)
  - Any building dwelling unit w/ 3 stories or fewer
  - Dwelling units in 4 or 5 story buildings must have individual systems for heating, cooling, & DHW
  - Above 5 stories must participate in Multi-Family Whole Building Performance Program



# RNC Gut Rehabs

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- Must expose all exterior walls
- Must reinsulate or existing insulation must be Grade 1
- Must be inspected by a HERS rater
- Must replace windows or existing windows must be documented as Estar



# RNC Major Changes

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- DOE Renewable Energy Ready Checklist now required for HERS Tier 3
- Added Passive House as a Bonus Certification Incentive
- Reduced multi-family blower door infiltration metric to 0.25cfm 50
- Increased lighting requirement to 90% energy efficient lighting CFL or LED
- HERS Raters Signature on RNC application



# RNC Program Structure

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- Performance Track
  - HERS Rating Path
  - Certification Bonus Incentive
    - ENERGY STAR Certification
    - LEED for Homes
    - National Green Building Standard (NGBS)
    - DOE Challenge Home
    - Passive House
- Prescriptive Track
  - Insulation & air sealing
  - Geothermal heating and cooling





# Why did RNC Program Switch to HERS Rating?

Aligning with CT State Code now & for future:

- Current CT Code – 2009 IECC
- Next code adoption in CT – 2012 IECC (fall 2015 estimated date)
- Future CT code 2015 IECC (required HERS index of 58)



# RNC Process

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## **Choose which path you will apply for:**

1. HERS Rating Path
2. Prescriptive Path



# HERS Rating Incentive Structure

	Single Family	Single Family Attached	Multi Family
HERS Index	Applicant Incentive	Applicant Incentive	Applicant Incentive
70-61	\$3,000	\$2,000	\$1,500
60-50	\$4,000	\$2,500	\$2,000
Below 50	\$4,500 plus \$50 per point below	\$3,000 plus \$40 per point below	\$2,500 plus \$25 per point below



# RNC HERS Rating Requirements

## 2015 RESIDENTIAL NEW CONSTRUCTION PROGRAM REQUIREMENTS AND SUBMISSION CHECKLIST

### GENERAL PARTICIPATION REQUIREMENTS

To participate in the Residential New Construction (RNC) energy efficiency incentive program, dwelling units/buildings must meet technical requirements listed in the document. Applicants must submit the RNC application form prior to insulating the home. Applicants should fill out the "Initial Plan" section of the Residential New Construction Program Project Application (Application) form in its entirety.

### BUILDING TYPE PARTICIPATION

**A.** The following building types are eligible for RNC program participation:

- Detached dwelling units (e.g. single family homes);  
**OR**
- Dwelling units in any multifamily building with 4 units or fewer;  
**OR**
- Dwelling units in multifamily buildings with 3 stories or fewer above-grade;  
**OR**
- Dwelling units in multifamily buildings with 4 or 5 stories above-grade that have their own heating, cooling and hot water systems, separate from other units, and where dwelling units occupy 90% or more of the occupiable square footage of the building. When evaluating mixed-use buildings for eligibility, exclude commercial/retail space when assessing whether the 90% threshold has been met.

Any building with a residential end-use that doesn't fall within these building-type requirements will be subject to the Multifamily Whole Building Performance Program (MWBP). Contact the utility Program Administrator for MWBP program requirements.

- B.** Dwelling units which will be constructed from the "ground-up" as well as units which will be "gut-rehabbed" or fully rehabilitated are eligible for program participation. For purposes of this program, gut-rehabbed buildings must expose all exterior walls and have a plan in place to reinsulate or for the existing insulation to meet RESNET Grade I standards. Additionally, the remainder of the thermal envelope (ceilings, floors, etc.) must be reinsulated or inspected to meet RESNET Grade I standards. Gut-rehabbed buildings must also replace all existing windows or verify that existing windows meet the current ENERGY STAR® window standards.
- C.** All homes in UI and Eversource territory, regardless of heating fuel, are eligible to receive the full incentives offered in the RNC program.

# HERS Path: Required measures & their value



**Thermal  
Envelope**



**Solar PV Ready**



**Duct  
Tightness**



**Efficient  
HVAC**



**Efficient  
Lights &  
Appliances**



**Third-party  
Verification**

# RNC: Thermal Envelope requirements

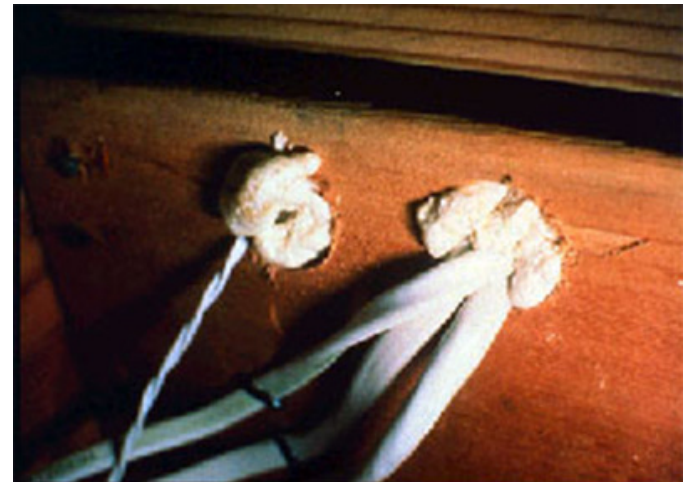
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- Pre-drywall inspection must be conducted & meet 2009 IECC Air Barrier & Insulation checklist
- Post construction blower door must be conducted and meet the following:
  - Single Family: 4 ACH50 or less
  - Non-single Family: 0.25CFM50 per sq. ft. of enclosure surface area (calculates out to about 4-6 ACH50)



# Properly Installed Insulation and Air Sealing:

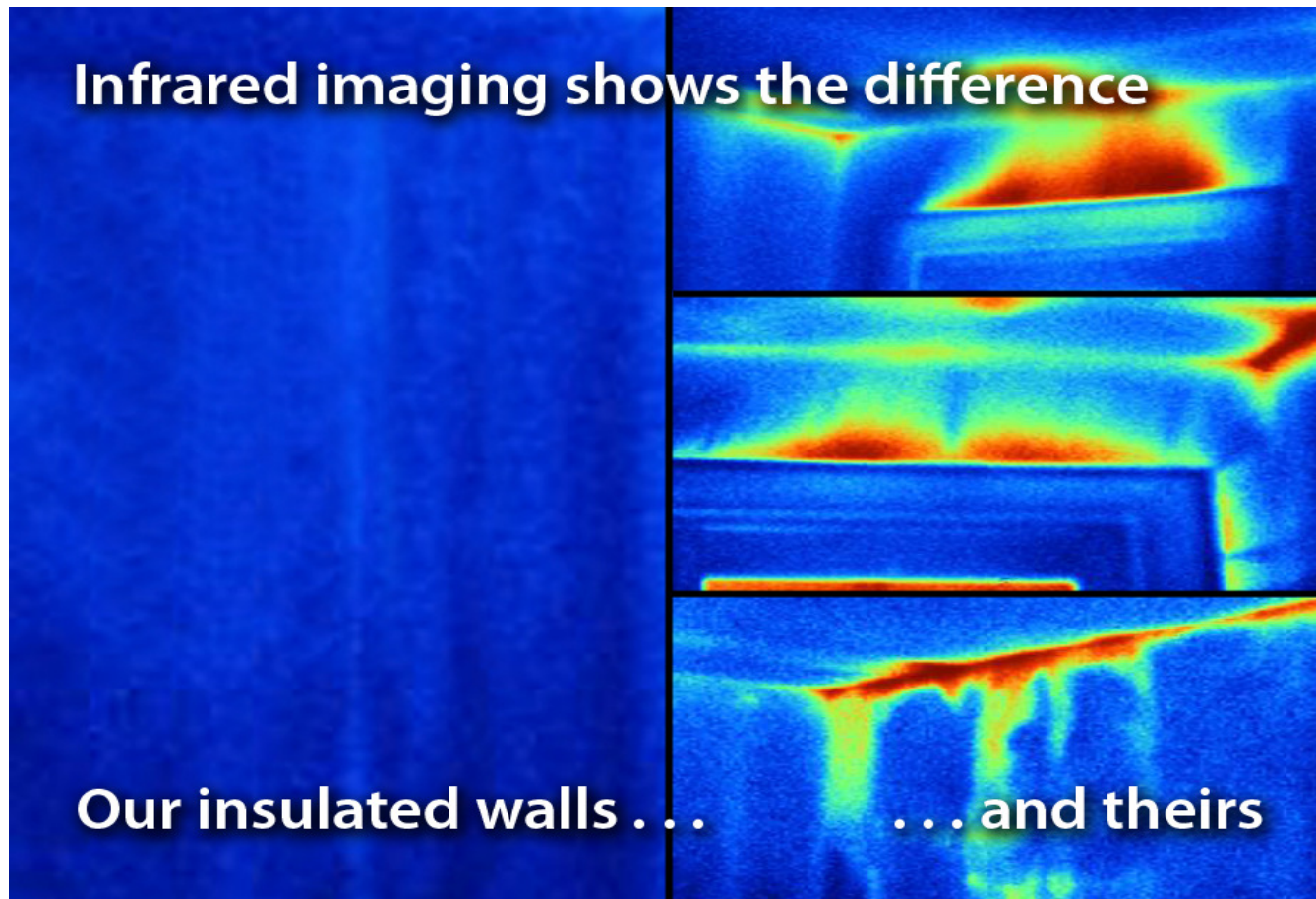
- Reduces heat transfer
- Protects homes from moisture damage
- Reduces air & moisture infiltration
- Controls pressure & improves comfort





# See the Difference

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# RNC: Renewable Energy Ready Requirement

- Requirements:

- RNC HERS rated homes – any home with HERS less than 50 must meet the DOE Zero Energy Ready Home Consolidated Renewable Energy Ready Checklist
- Homes not meeting this requirement will only be eligible for Tier 2 HERS Incentive
- Single-family only requirement

- Goal:

- Prepare CT homes for future renewables
- Educate builders and designers on proper orientation
- Reduction of future penetration in the home
- Anticipates future code requirements for renewables



# RNC: HVAC sizing requirements

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## **Sizing must meet 2009 IECC requirements**

- Manual J
- Manual S
- Must submit to HERS rater

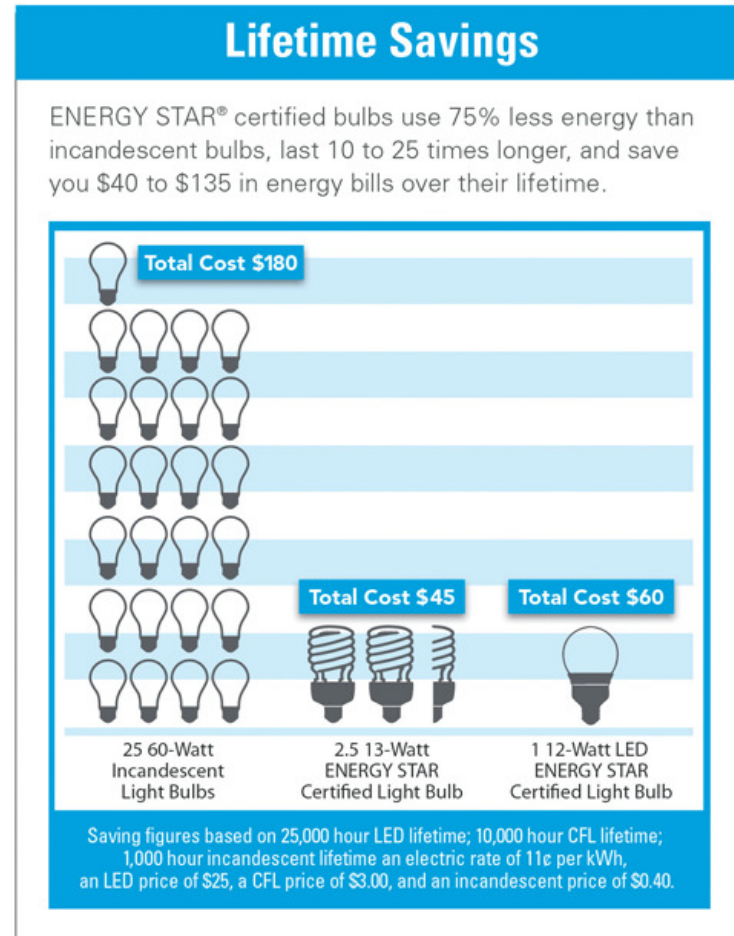
## **Proper Sizing Benefits**

- More energy efficient
- Improved comfort
- Lower maintenance costs



# RNC: Lighting requirements

- 90% ENERGY STAR CFLs or LEDs required
- Code requires 50%
- Cost have come down of LEDs
- Enough lighting options are available



# RNC: Appliances requirement

- Must have ENERGY STAR refrigerator, dishwasher and clothes washer



# RNC: Duct Leakage requirements

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- Post-construction duct leakage to the outside test must be conducted
- Duct leakage to the outside cannot exceed 4CFM25 per 100SF

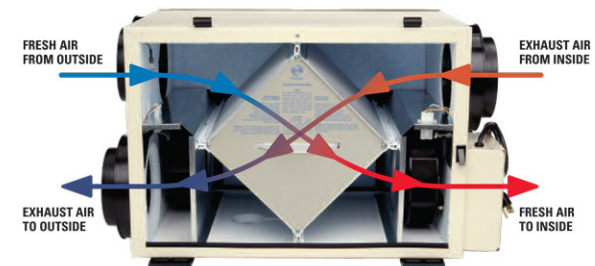
## **Benefits of Duct Sealing:**

- Better comfort
- Proper air distributed to space
- Reducing energy loss up to 20%



# RNC: Whole-House Ventilation requirements

- Must have mechanical ventilation installed i.e.
  - Exhaust fan
  - Supply only
  - ERV or HRV (balanced system)
- Must meet ASHRE 62.2 guidelines
- Must be tested by HERS rater
- Better indoor air quality
- Controls air flow



# Third-Party Verification Value

- HERS Raters
- Energy efficiency consultant working for you
- Cost benefit analysis of energy measures
- QA of energy measures
- Blower door & duct blaster
- Non-bias third party

A template for an Energy Star label. It features the Energy Star logo and the text "AN ENERGY STAR QUALIFIED HOME". Below this, there are fields for "Address:", "Built by:", "Verified by:", "Date:", and "Additional information:". At the bottom, there is a small text block stating: "This home has been independently verified through an EPA approved sampling protocol to meet ENERGY STAR's strict guidelines for energy efficiency. Each ENERGY STAR-qualified home can keep 4,500 lbs of greenhouse gases out of our air each year." and the website "www.energystar.gov".



# Track #1 Certification Bonus Incentive

High Performance Certification Incentive Chart				
Requirements	Qualifying Certifications	Single Family	Single Family Attached	Multi Family
		Applicant Incentive	Applicant Incentive	Applicant Incentive
<ol style="list-style-type: none"> <li>1. Must provide all proper documentation for certification</li> <li>2. Project cap is \$20,000</li> <li>3. Incentive is available for up to 2 certifications per home</li> <li>4. All projects must provide HERS Rating documentation through Track 1</li> </ol>	<ul style="list-style-type: none"> <li>• ENERGY STAR</li> </ul>	\$750 per home	\$250 per unit	\$250 per unit
	<ul style="list-style-type: none"> <li>• LEED for Homes</li> <li>• DOE Challenge Home</li> <li>• National Green Building Standard (NGBS)</li> <li>• Passive House</li> </ul>	\$500 per home	\$250 per unit	\$250 per unit



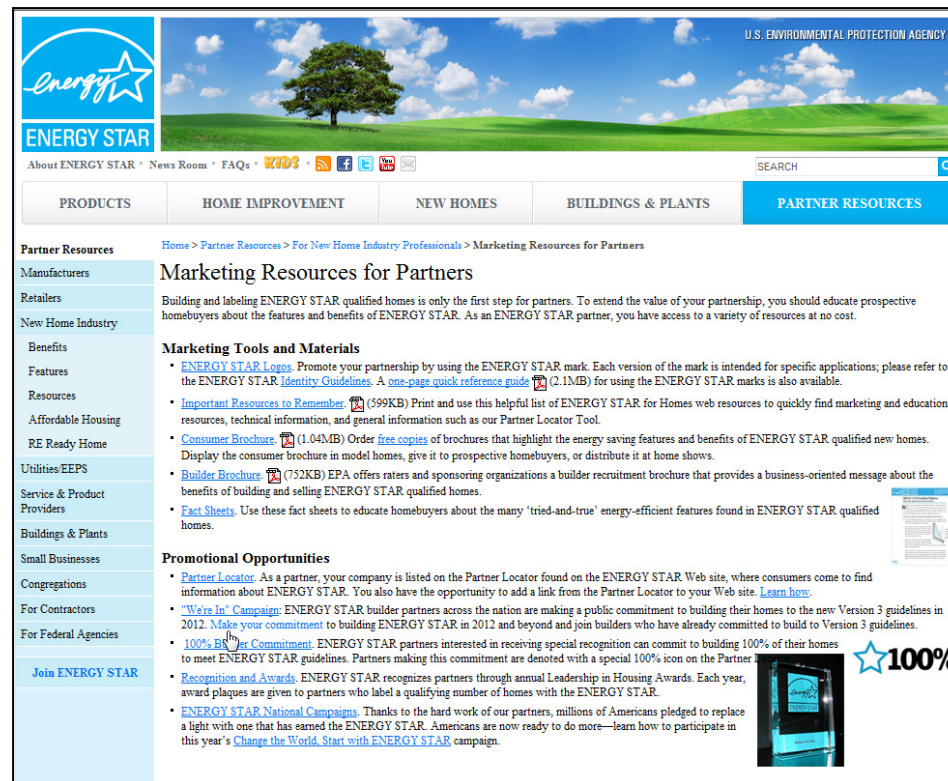
# Why Build an ENERGY STAR Home?

- Product differentiation
- Long term escalating energy costs
- Marketability
- Quality assurance guarantee  
(warranty potential, fewer call backs)
- Builder credibility
- Growing consumer interest in sustainability and energy efficiency



# ENERGY STAR Partner Marketing Resources

- Customized logo
- Fact Sheets
- Brochures
- Cost & Energy Savings overviews



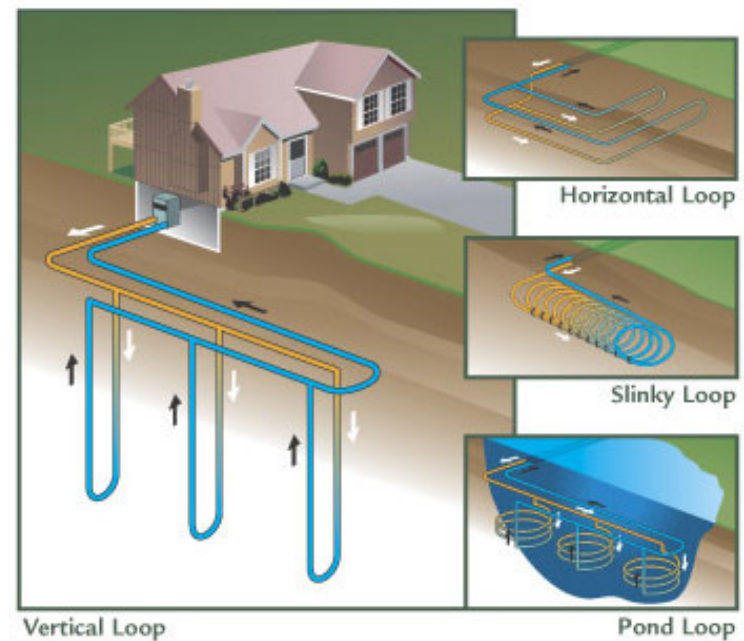
# Above and beyond...

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# Track 2 – Prescriptive Rebates

- High Performance Insulation & Air Sealing
- Geothermal Heating & Cooling



# Prescriptive Incentive #1 - Insulation

Requirements	Incentive
<ul style="list-style-type: none"><li>• R-21 minimum for walls &amp; R-40 minimum for ceilings</li><li>• The whole insulation system, including both above-grade walls and ceilings, must qualify to receive rebate</li><li>• Insulation must be RESNET Grade 1 standard &amp; visually verified by HERS rater or BPI professional before drywall</li><li>• Any type of insulation can qualify</li><li>• HERS rater or BPI post-construction blower door test resulting in the following:<ul style="list-style-type: none"><li>• single family homes: 4ACH50</li><li>• non-single family: 0.25CFM50 per sq. ft. of enclosure surface area</li></ul></li><li>• Must have mechanical ventilation system installed</li></ul>	<p>\$0.50/sq. ft. of insulated area</p> <p>Caps:</p> <p>1 BR: \$960 2 BR: \$1,130 3 BR: \$1,495 4 BR: \$1,810 5 BR: \$2,010</p>



# Examples of Insulation

Hybrid Options



Spray Foam



Cellulose



Rigid Foam Board



# Prescriptive Incentive #2 - Geothermal

Geothermal Heating and Cooling	<ol style="list-style-type: none"><li>1. Home must receive the High Performance Insulation and Air Sealing Incentive</li><li>2. System must be ENERGY STAR® and AHRI rated</li><li>3. Passing verification of Installed Performance (VIP) form required</li></ol>	\$500/ton, capped at \$1500 per location
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- Federal Tax Credit of 30% of entire installed cost for geothermal available through 2016
- HERS rated homes are eligible to receive prescriptive geothermal rebate in addition to HERS rating rebate

# RNC Program Geothermal Stats:

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- 2012:
  - 88 Completed homes
  - \$536K paid out for 88 geo homes
- 2013:
  - 52 Completed homes
  - \$310K paid out for 52 geo homes
- 2104:
  - 61 Completed homes
  - \$430K paid out for 61 geo homes
- 2105:
  - 91 homes currently signed up
  - Estimated spending \$546K



## RNC Example: Single Family Home HER Rating Path

Project details: Glastonbury, CT 3,800 sq/ft – 4BR with 4 Ton geo system

MEASURES	AS BUILT
HERS Rating Rebate	Incentive Amount <b>\$4,600 (based on HERS score of 48)</b>
Geothermal Heating and Cooling Rebate	Incentive Amount <b>\$1,500 (based on 4 ton system)</b>
	<b>ACTUAL TOTAL \$6,100</b>

### Electricity usage: Modeled usage vs. Actual 1<sup>st</sup> year usage

- Modeled usage: 15,083 kWh annual electric
- Modeled cost: \$2,401 annual electric
- Actual usage: 16,094 kWh annual electric
- Actual cost: \$2,327 annual electric

# RNC Application

## RESIDENTIAL NEW CONSTRUCTION PROGRAM 2015 PROJECT APPLICATION

### INSTRUCTIONS:

1. The Residential New Construction program is available to customers building a home or significant rehabilitation projects within the residential service territory of Eversource Energy ("Eversource") or The United Illuminating Company ("UI"). To apply ("Applicant"), first fill out the project contacts and project information below. Then, review the sections titled "Track 1: HERS Rating Path" and "Track 2: Prescriptive Path" to determine which path you will apply for and what the requirements are. Applicants may apply for only one of the two paths outlined in this application. Both Track 1 and Track 2 require the outside contracted services of a certified Home Energy Rating System (HERS) rater to inspect and rate the home. The associated costs are the responsibility of the Applicant. A list of HERS raters and a description of what is included in their services can be found within the Residential New Construction portion of the following websites: [www.eversource.com](http://www.eversource.com), [www.uinet.com](http://www.uinet.com) or [energizect.com](http://energizect.com).
2. Please complete the **INITIAL PLAN** sections, sign the signature section on the last page of this form, and submit to the applicable Eversource/UI Program Administrator ("Administrator") indicated at the bottom of this page **PRIOR TO INSULATING THE HOME**. If the Applicant is not the homeowner, the homeowner's signature must also be obtained. If homeowner is not yet known, the current property owner's signature is required. For multi-family/multi-unit projects, only one application is necessary for groups of units with similar characteristics. **FILLING OUT THIS FORM DOES NOT AUTOMATICALLY QUALIFY YOU FOR THE RESIDENTIAL NEW CONSTRUCTION PROGRAM.**
3. Upon submitting the application, the Eversource/UI Administrator will review the application and sign it if the requirements have been met. If they have not or if additional upgrades can be made, the Administrator will contact the Applicant to discuss all options. The Applicant is not bound to the initial specifications; however, any changes are still subject to the minimum requirements listed on this application.
4. Once the home is complete and a final inspection has been completed by a HERS rater, the Applicant is responsible for submitting the "As Built" required paperwork within two months of completion or the incentive will be forfeited. A HERS rater may submit the Application on behalf of the Applicant. Once all paperwork has been submitted and the package reviewed by the Administrator, the payment will be processed and paid **TO THE APPLICANT**.



2013 Zero Energy Challenge co-winning home located in Farmington, CT.

### PROJECT CONTACTS

Applicant's First Name (please print)		Last Name		Applicant's Company Name (if applicable)	
Applicant's Mailing Address					
City		State		Zip	
Telephone		Email			
Name of HERS Rater			Name of HERS Rating Company		
Builder Company Name			Builder Contact Name		
Telephone			Email		

### PROJECT INFORMATION

Project Name (if applicable)			Primary Heating Source		
			<input type="checkbox"/> Electric <input type="checkbox"/> Natural Gas <input type="checkbox"/> Oil <input type="checkbox"/> Propane		
Project Location / Address			Electric Utility (check one)		
			<input type="checkbox"/> Eversource <input type="checkbox"/> UI		
Construction Start Date			Natural Gas Utility (check one)		
			<input type="checkbox"/> CNG <input type="checkbox"/> SCG <input type="checkbox"/> Eversource		
Expected Completion Date			Unit Type		
			<input type="checkbox"/> Single Family <input type="checkbox"/> Multi Family		
Size of Home (sq. ft.)			<input type="checkbox"/> Single Family Attached (side by side units only)		
No. of Bedrooms	No. of Units in Project		Project Type		
			<input type="checkbox"/> Market Rate <input type="checkbox"/> Low Income (60% median)		

# Initial submittal

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- Page 1 fill out Project Contacts and Project Information
- Page 2, fill out “Initial Plan” for applicable Performance Track and/or Prescriptive Measure Incentives
  - Initial HERS index must be determined by HERS rater
- Page 3 summarize incentives and provide necessary signatures
- W-9 form
- Utility signs application and sends copy back to applicant and HERS rater
- Incentive dollars are reserved, pending final inspection
- Please remember:
  - 125% of incentives for limited income (60% state median) projects

# Final submittal and checklist

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- Paperwork and documents needed:
  - Electronic REM/Rate™ file – from HERS rater
  - Submit a final Home Energy Rating Certificate (HERC)
  - Bonus certification documentation
  - Lighting inventory (90% rule, ONLY ENERGY EFFICIENT BULBS)
  - Insulation: Invoice and photos
  - Geothermal: AHRI Certificate, Contractor Invoice, passing verification of Installed Performance (VIP) form

# After break...

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Hear a panel discussion from 3 CT builders on their experience with ENERGY EFFICIENCY!!



# Break Time

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# Sample Projects of Potential Incentives

1. Prescriptive only (insulation and HVAC)
2. Single family
3. Single family attached
4. Multi-family
5. Mix-use residential and commercial

# Example #1 Prescriptive Only – Geothermal

Example: Single family 2,800 sq/ft 3BR home

MEASURES	AS BUILT INCENTIVES
High Performance Insulation & Air Sealing	Incentive Amount <b>\$ 1,495, 3BR Cellulose</b>
Geothermal Heating and Cooling	Incentive Amount <b>\$1,500, 3 Ton system</b>
	<b>ACTUAL TOTAL \$ 2,995</b>



## Example #2 Prescriptive Only – NON-Geothermal

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MEASURES	AS BUILT INCENTIVES
High Performance Insulation & Air Sealing	Applicant \$ 1,810 4BR Cellulose
	<b>ACTUAL TOTAL \$ 1,810.00</b>

# Example #3 Single Family – Natural Gas and ENERGY STAR Bonus

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MEASURES	AS BUILT INCENTIVES
HERS Rating Incentive	Applicant <b>\$4,000 (HERS 58)</b>
ENERGY STAR Certification Bonus	Applicant <b>\$750</b>
	<b>ACTUAL TOTAL \$4,750</b>

# Example #4 Single Family – ENERGY STAR + Geothermal

MEASURES	AS BUILT INCENTIVES
HERS Rating Incentive	\$4,000 (HERS 52)
ENERGY STAR Certification Bonus	\$750
Geothermal Heating and Cooling	\$1,500, 3 ton system
	<b>ACTUAL TOTAL \$6,250</b>

# Example #5 Single Family – ENERGY STAR + Low Income Bonus

MEASURES	AS BUILT Incentives
HERS Rating Incentive	\$3,000 (HERS 61)
ENERGY STAR Certification Bonus	\$ 750
Low Income Project Bonus 25%	$\$3750 \times 25\% = \$937.50$
	<b>ACTUAL TOTAL \$4,687.50</b>

# Example #6 Single Family Attached – ENERGY STAR

Project details: Townhouse development – 87 Units – natural gas

MEASURES	AS BUILT INCENTIVES
HERS Rating Incentive	Applicant $\$2500 \times 87 = \$217,500$ (HERS 56)
ENERGY STAR Certification Bonus	Incentive Amount $\$250 \times 87 = \$20,000$
	<b>ACTUAL TOTAL \$237,500</b>

# Multi-Family Project

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- Kick-off meeting during design phase
- Copy of blueprints submitted to utility
- Utility reviews blueprints for qualifying measures
- Additional information requested from architect or engineer
- Utility creates RNC Incentive application
- Inspections done by HERS rater or utility staff
- Project can be paid out in phases



# Example #7 Multi-Family Low-Income – Gut Renovation

Project details: 3 story multi-family building – 52 Units

Low Income: 125% bonus

MEASURES	AS BUILT INCENTIVES
HERS RATING Incentive	$\$2,000 \times 52 = \$104,000$ (HERS 58)
Low Income Project Bonus 25%	$\$104,000 \times 25\% = \$26,000$
	<b>ACTUAL TOTAL \$130,000</b>



# Example #8 Mixed Use – Residential & Commercial with ENERGY STAR

Project details: 4 story building with 1<sup>st</sup> floor fitness center and retail shops. 2<sup>nd</sup> to 4<sup>th</sup> floors with 89 dwelling units

RESIDENTIAL MEASURES	AS BUILT INCENTIVES
HERS Rating Incentive	Incentive Amount (HERS 61) <b>\$1,500 x 89= \$133,500</b>
ENERGY STAR Certification Bonus	Incentive Amount <b>\$250 x 89 =\$22,250</b>
COMMERCIAL MEASURES	AS BUILT INCENTIVES
Common area, fitness center and retail heating & cooling	Incentive Amount <b>\$12,421 condensing boilers and rooftop AC unit</b>
LED/Induction Site Lighting	Incentive Amount <b>\$7,845 (75% Incremental cost or \$0.50 kWh)</b>
	<b>ACTUAL TOTAL \$176,016</b>

# Whole Building Performance Initiative

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- Multi-Family high rise buildings outside of standard RNC program (6+ stories)
- Work with engineer, architect, and energy professional to design % better than ASHRE
- Whole building modeling (i.e. eQuest, Trane TRACE)
- Testing, inspections, and verification required
- Result: Incentive, verification and potential certification



# Incentive Structure

Whole Building Incentive Structure	
% better than code	Incentive
10% - 15%	\$0.50/square foot
15.1 - 20%	\$1.00 square foot
20.1% - 25%	\$1.75/square foot
25.1% - 30%	\$2.50/square foot
> 30%	\$3.00/square foot

## **Model Subsidy**

- Pre-Modeling Subsidy - (paid upon submission of model) \$3,000.00
- Post-Modeling Subsidy - (paid upon final construction) \$3,000.00

## **Certification Bonus**

- LEED Silver or ENERGY STAR MFHR (15%-20%) \$5,000.00
- LEED Gold or ENERGY STAR MFHR (20%-30%) \$10,000.00
- LEED Platinum or ENERGY STAR MFHR (> 30%) \$15,000.00

# Example #9 Mixed Use – Residential & Commercial w/ Central Heating & Cooling

Project details: 6 story building; 120,000 sq/ft with 1<sup>st</sup> floor community room and retail shops. 2<sup>nd</sup> to 6<sup>rd</sup> floors with 102 dwelling units (natural gas)

MEASURES	AS BUILT
EStar Multi-Family High Rise Certification Bonus	\$10,000 bonus incentive for certification
Envelope Improvements (windows, walls, roof)	Incentive Amount <b>Whole Building Performance method</b>
Central Chiller (cooling)	Incentive Amount <b>Whole Building Performance method</b>
Central Condensing Boilers (heating and hot water)	Incentive Amount <b>Whole Building Performance method</b>
Interior Lighting & LED/Induction Exterior Lighting	Incentive Amount <b>Whole Building Performance method</b>
Low Flow Fixtures and Appliances	Incentive Amount <b>Whole Building Performance method</b>
Whole Building Incentive: \$210,000 Certification Bonus Incentive: \$10,000 Pre and Post Modeling Subsidy: \$6,000	<b>TOTAL \$226,000 (based on 20% to 25% energy savings at \$1.75 per square foot)</b>

# Meeting Code: Duct and Envelope Testing

## 2015 RESIDENTIAL NEW CONSTRUCTION DUCT AND ENVELOPE TESTING REBATE

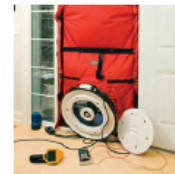
The State of Connecticut adopted the 2009 International Energy Conservation Code (IECC) as an amendment to the 2005 State Building Code effective October 6, 2011. The 2009 IECC has new mandatory testing requirements for verification of a building's thermal envelope and duct tightness for residential new construction. Eversource Energy (Eversource), United Illuminating Company, Connecticut Natural Gas Corporation or Southern Connecticut Gas Company customers, who meet the IECC requirements for building thermal envelope and duct tightness, can qualify for a \$300 rebate. The Duct and Envelope Testing Rebate program ("Program") covers testing completed on or after January 1, 2015 through December 31, 2015. **All Rebate requests with required documentation must be postmarked no later than January 31, 2016.** In order to qualify, duct and envelope requirements must be tested and verified by a certified Home Energy Rating System (HERS) rater or a Building Performance Institute (BPI) professional. To find a list of these qualified parties, visit [EnergizeCT.com](http://EnergizeCT.com).

**INSTRUCTIONS:** Builder or homeowner should contact a HERS rater or BPI professional to coordinate proper scheduling of duct and envelope testing. Both duct and envelope tests must be performed and pass 2009 IECC requirements in order to receive \$300 rebate. Upon completion, provide a W-9 form indicating who to make the incentive payable to and fill out this Duct and Envelope Testing Rebate form ("Application") completely, truthfully and accurately and mail both documents to your applicable utility as follows:

Eversource  
107 Selden Street, Berlin, CT 06037  
[www.eversource.com](http://www.eversource.com)  
Contact: Enoch Lenge  
Email: [enoch.enge@eversource.com](mailto:enoch.enge@eversource.com)  
Phone: (860) 665-5369, Fax: (860) 665-3030

OR

The United Illuminating Company  
180 Marsh Hill Road, M/S AD-2A, Orange, CT 06477  
[www.uinet.com](http://www.uinet.com)  
Contact: Jenn Parsons  
Email: [jennifer.parsons@uinet.com](mailto:jennifer.parsons@uinet.com)  
Phone: (203) 499-5935, Fax: (203) 499-2800



### Project Contacts

Builder / Applicant's First Name (please print)	Last Name
<input type="text"/>	
Builder / Applicant's Mailing Address	
<input type="text"/>	
City	State Zip
<input type="text"/>	<input type="text"/>

Builder Company Name	Telephone
<input type="text"/>	<input type="text"/>
Email	
<input type="text"/>	
Name of HERS Rater / BPI Professional	Company Name
<input type="text"/>	<input type="text"/>

### Project Information

Project Location / Address	
<input type="text"/>	
Size of Home (sq. ft.)	No. of Units in Project
<input type="text"/>	<input type="text"/>
Type of Cooling System	
<input type="checkbox"/> Central AC <input type="checkbox"/> Ductless AC <input type="checkbox"/> Other <input type="text"/>	

Type of Heating System	
<input type="checkbox"/> Furnace <input type="checkbox"/> Boiler <input type="checkbox"/> Heat Pump <input type="checkbox"/> Other <input type="text"/>	
Electric Utility (check one)	Natural Gas Utility (check one)
<input type="checkbox"/> Eversource <input type="checkbox"/> UI	<input type="checkbox"/> CNG <input type="checkbox"/> SCG <input type="checkbox"/> Eversource
Primary Heating Source	
<input type="checkbox"/> Electric <input type="checkbox"/> Natural Gas <input type="checkbox"/> Oil <input type="checkbox"/> Propane	

# Meeting Code: Duct and Envelope Testing

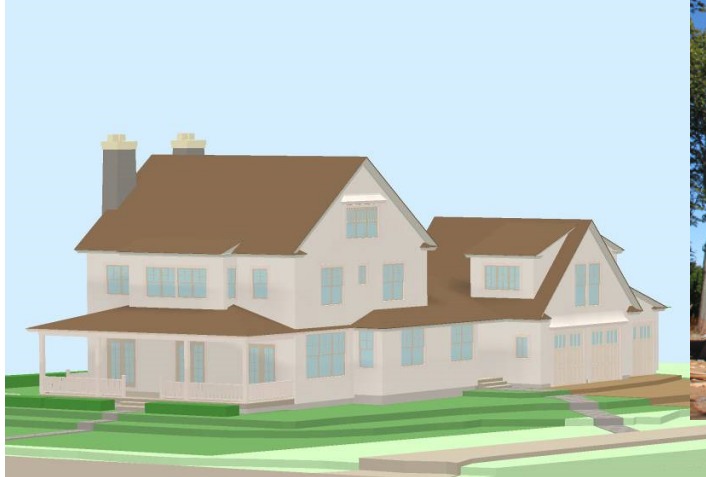
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- \$300 rebate per home
- Requires testing by HERS rater or BPI professional
- Must meet duct and envelope requirements of 2009 IECC:
  - Envelope: less than 7 ACH50
  - Ducts:
    - Post construction test
      - Maximum of 8 CFM/100ft<sup>2</sup> leakage to outdoors OR
      - Maximum of 12 CFM/100ft<sup>2</sup> total leakage
    - Rough-in test
      - Maximum of 6 CFM/100ft<sup>2</sup> total leakage





# CT ZERO ENERGY CHALLENGE





- Design build competition
- Promotes builders and developers to achieve near zero energy homes
- Marketability
- Learn from fellow participants best practices

## 2014 Zero Energy Challenge Complete

- 11 homes participated
- 3 winners were announced December 30th
- Ceremony and awards presentation March 26th
- Homes were graded based on 4 different categories
  - The lowest overall HERS Index
  - The lowest HERS Index w/o renewables technologies
  - Most affordable project
  - The lowest projected annual net operating costs



## 1<sup>st</sup> Place Zero Energy Challenge Winner

Builder: Glastonbury Housesmith – Glastonbury, CT

### Categories Won:

- Lowest Overall HERS Index
- Lowest HERS Index before Renewables Technologies (tied)
- Lowest Annual Net Operating Costs



## 2<sup>nd</sup> Place Zero Energy Challenge Winner

Builder: Lehto Design/Build, LLC – Brooklyn, CT

Categories Won:

- Most Affordable (cost per sq/ft)
- Lowest HERS Index before Renewables Technologies (tied)





## 3<sup>rd</sup> Place Zero Energy Challenge Winner

**Participant: The Taft School**

Builder: BPC Green Builders

Architect: Trillium Architects



## Update on 2015 Zero Energy Challenge

- 6 Participants so far
- 2015 ZEC application deadline June 1st
- Home with the lowest aggregate score, receives the top cash prize
- Individual category winners will also be recognized and awarded cash prizes

## Benefits of Participating

- Monetary awards:
  - Overall winner: \$10,000
  - Individual category winners: \$5,000 each
- Exposure on ZEC website
- Media coverage
- Incentives associated with participation in the Residential New Construction Program



Visit the CT Zero Energy Challenge website to learn more  
[www.ctzeroenergychallenge.com](http://www.ctzeroenergychallenge.com)

**CT ZERO ENERGY CHALLENGE 2012 EDITION**

HOME ABOUT THE CHALLENGE BUILDING ZERO ENERGY NEWS & INFO PARTICIPANTS

**Building a near zero energy home is achievable today**

Homes that consume almost no energy. Homes that produce energy on-site. Homes with cleaner air. Advanced designs and integrated systems that are changing the way we think about residential construction. That's what this Challenge is all about.

The CT Zero Energy Challenge is a design and build competition that awards cash prizes to its winners, while educating and demonstrating how to build super high-efficiency homes. [read more](#)

**The 2012 CT Zero Energy Challenge Participants:** [MORE INFO >](#)

<b>Appropriate Designs</b> NORTH FRANKLIN, CT	<b>Lehto Design/Build</b> BROOKLYN, CT
<b>BPC Green Builders</b> NORWALK, CT	<b>Preferred Builders</b> OLD GREENWICH, CT
<b>BPC Green Builders</b> NEW FAIRFIELD, CT	<b>The Murray's</b> PORTLAND, CT
<b>Lehto Design/Build</b> KILLINGLY, CT	<b>WolfWorks</b> HARTWINTON, CT

**Meet the Winners of the 2011 Challenge!**

The 2011 Challenge had 4 winners bringing home a total of \$30,000 in cash prizes! Click below to learn more about their super energy-efficient homes.

[View Winners >](#)  
[2011 Challenge Recap >](#)  
[View the 2010 ZEC Winners >](#)

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Energize Connecticut helps you save money and use clean energy. It is an initiative of the Energy Efficiency Fund, the Clean Energy Finance and Investment Authority, the State, and your local electric and gas utilities with funding from a charge on customer energy bills.

[Home](#) | [2012 Participants](#) | [Building Zero Energy Homes](#) | [Frequently Asked Questions \(FAQ\)](#)  
[About The Challenge](#) | [Qualifications & Requirements](#) | [Awards & Benefits](#) | [Sponsors & Resources](#)

# Contact Information

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180 Marsh Hill Road,

Orange, CT 06477

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Jennifer.Parsons@uinet.com

Phone: 203-499-5935

Fax: 203-499-2800

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# Questions?

# Thank you!



Empowering you to make  
smart energy choices



UIL HOLDINGS COMPANIES