EnergizeCT Residential Program Rollout

Tuesday, March 11, 2014
Crowne Plaza, Cromwell
Introductions

- Who is in the room?
  - HES Vendors
  - HES-IE Vendors
  - Home Performance Contractors
  - HVAC Installers
  - HVAC Distributors
  - HVAC Manufacturers
  - Other
## Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 - 8:30 AM</td>
<td>Sign In and Breakfast</td>
</tr>
<tr>
<td>8:30 - 8:40 AM</td>
<td>Welcoming Remarks</td>
</tr>
<tr>
<td>8:45 - 9:30 AM</td>
<td>Home Energy Solutions Program and Rebates</td>
</tr>
<tr>
<td>9:30 - 10:15 AM</td>
<td>HVAC Rebates/Water Heater Rebates</td>
</tr>
<tr>
<td>10:15 - 10:35 AM</td>
<td>HES-IE &amp; Multi-Family Program Overview</td>
</tr>
<tr>
<td>10:35 - 10:50 AM</td>
<td>Short Break</td>
</tr>
<tr>
<td>10:50 – 11:10 AM</td>
<td>Home Performance with ENERGY STAR® Program</td>
</tr>
<tr>
<td>11:10 -11:45 AM</td>
<td>Upstream Promotion Program Overview</td>
</tr>
<tr>
<td>11:45 - 12:15 PM</td>
<td>Boiler Reset Control Training</td>
</tr>
<tr>
<td>12:15 – 1:00 PM</td>
<td>Lunch/Networking Session</td>
</tr>
<tr>
<td>1:00 – 1:30 PM</td>
<td>High Efficiency Circulator Pump Training</td>
</tr>
<tr>
<td>1:30 – 2:00 PM</td>
<td>Comprehensive Energy Strategy Overview</td>
</tr>
<tr>
<td>2:00 – 2:10 PM</td>
<td>Energy Efficiency Financing Options Overview</td>
</tr>
<tr>
<td>2:10 – 2:35 PM</td>
<td>EnergizeCT Heating Loan</td>
</tr>
<tr>
<td>2:35 – 2:50 PM</td>
<td>Residential Energy Efficiency Financing</td>
</tr>
<tr>
<td>2:50 – 3:10 PM</td>
<td>CEFIA Financing Options</td>
</tr>
<tr>
<td>3:10 – 3:15 PM</td>
<td>Questions and Closing Remarks</td>
</tr>
<tr>
<td>3:15 – 4:00 PM</td>
<td>CEFIA Smart-E Contractor Training</td>
</tr>
</tbody>
</table>
Housekeeping Items

- Breakfast and Lunch Will Be Served
- Bathrooms and Exit Signs
- Sign-In Sheet Reminder
Welcoming Remarks

Presented by:
Ron Araujo, Connecticut Light & Power (CL&P) / Yankee Gas (YGS)
Energize Connecticut

- Energize Connecticut is the state’s branding initiative to help consumers save money and use clean, affordable energy.

- A partnership of the local electric and gas utilities, the Clean Energy Finance and Investment Authority (CEFIA), and Department of Energy and Environmental Protection (DEEP)
Why Choose Energy Efficiency?

- Valuable resource for Connecticut:
  - Reduces air pollutants and greenhouse gases
  - Saves customers money
  - Reduces need for more energy generation
  - Creates jobs

- Program funding:
  - Small charge on electric and natural gas bills
Program Governance and Planning

- 2013-2015 Conservation and Load Management Plan
  - Developed by Utilities – Filed November 2012
  - Energy Efficiency Board (EEB) “advises and assists in the development and ultimately approves the C&LM plan…”
  - Reviewed and approved by DEEP (Bureau of Energy and Technology Policy)
  - Final Decision with new budgets issued Oct. 31, 2013
  - Annual Plan updates by Utilities on Feb. 28, 2014
Residential Programs

▪ Existing Homes
  – Home Energy Solutions
  – Home Energy Solutions Income Eligible
  – Home Performance with ENERGY STAR®
  – Heating, Cooling and Water Heating
  – Retail Products

▪ New Homes
  – Residential New Construction

▪ Educational
  – eeSmarts
  – Smart Living Center
  – Museum Partnerships

▪ Residential Behavioral Program
2014 Residential Program Electric Budget

2014 Residential Electric Program Budgets

- Residential Retail Products
- Residential New Construction
- Home Energy Solutions
- Home Energy Solutions - Income Eligible
- Residential Behavior Program
2014 Residential Program Gas Budget

2014 Residential Natural Gas Program Budgets

- Residential New Construction
- Home Energy Solutions
- Home Energy Solutions - Income Eligible
- Water Heating
Getting Involved...

EnergizeCT has a number of different programs for any and all contractors

- Home Energy Solutions
- Home Energy Solutions – Income Eligible
- Home Performance with ENERGY STAR®
- Multi-Family
- Residential New Construction
- HVAC
- Commercial & Industrial
- Renewable Energy Technologies
Here's to 2014!

CONNECTICUT ENERGY EFFICIENCY FUND
Activities in 2013 Produced Substantial Economic and Environmental Benefits for Residents, Businesses and Municipalities

<table>
<thead>
<tr>
<th>Customers Served</th>
<th>Energy Savings</th>
<th>Air Emissions Reduced</th>
<th>Dollars Saved</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kWh Annual 285.8 Million</td>
<td>CO₂ 2.3 Million Tons (Lifetime)</td>
<td>Annual $53.4 Million</td>
</tr>
<tr>
<td></td>
<td>kWh Lifetime 3.0 Billion</td>
<td>SO₃ 1,901 Tons (Lifetime)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOₓ 3,937 Tons (Lifetime)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lifetime $630.0 Million</td>
</tr>
<tr>
<td>Number of Households Served 477,340</td>
<td>CCF Annual 4.7 Million</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Businesses Served 4,040</td>
<td>Gallons Annual (Fuel Oil &amp; Propane) 1.3 Million</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gallons Lifetime (Fuel Oil &amp; Propane) 27.4 Million</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MMBTUs

<table>
<thead>
<tr>
<th></th>
<th>Annual 1.6 Million</th>
<th>Lifetime 21.6 Million</th>
</tr>
</thead>
</table>

energize CONNECTICUT
Home Energy Solutions

Presented by:
Craig Clark, Connecticut Light & Power (CL&P), Yankee Gas (YGS)
2013: A Year in Review

- **Program Goals**
  - Savings per home, single family and multi family
    - Base Plan, 10% higher than 2012 across all fuels
  - In home savings opportunities need to be exhausted
  - Insulation & other add-on rebates are crucial

<table>
<thead>
<tr>
<th>2013 Program Goals</th>
<th>MMBtu/Home</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Single Family</td>
</tr>
<tr>
<td></td>
<td>14.1</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>2013 Program Actuals</th>
<th>MMBtu/Home</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Family</td>
</tr>
<tr>
<td></td>
<td>15.2</td>
</tr>
</tbody>
</table>

[energize CONNECTICUT CT logo]
Existing Homes

- Home Energy Solutions™
  - $75 Co-Pay for Electric/Gas Homes
  - $99 Co-Pay for Oil/Propane Homes
  - HES Core Services Include:
    - Blower door guided air sealing
    - Duct airflow assessment and sealing
    - CFL and LED lighting
    - Hot water saving measures
  - A comprehensive report including:
    - Recommendations for further improvements
    - Rebates
    - Financing Options
Home Energy Solutions Rebates

- Insulation
  - Wall, Ceiling & Basement
- Windows
- Appliances
  - Refrigerators, Freezers, Clothes Washers & Dehumidifiers
- Geothermal Heating
- Boiler Reset Controls
- Also Unlocks Access to Various Low-Interest Financing Options Which Will Discuss Later
Insulation

- Insulation is capped at 50% of installed cost
- Walls - $1/square foot
  - Qualification: R4 or less
  - Upgrade: Must install a minimum of R-13
- Ceilings - $1/square foot
  - Qualification: R19 or less
  - Upgrade – Final R-value must be R-38 minimum
- Basement - $0.50/square foot
  - Qualification: Unconditioned, R6 or less
  - Upgrade: If no insulation, R-13 must be installed
    If existing insulation, R-19 must be installed
Windows

- Qualification:
  - Existing single pane, no storm
  - Part of primary building envelope

- Upgrade:
  - Double pane, ENERGY STAR®
  - U factor less than or equal to 0.30
  - Need NFRC labels
Appliance Replacement

<table>
<thead>
<tr>
<th>Appliance</th>
<th>Rebate</th>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clothes Washer</td>
<td>$50</td>
<td>ENERGY STAR® label</td>
</tr>
<tr>
<td></td>
<td>$100</td>
<td>Rebate doubled for TopTen</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>$50</td>
<td>ENERGY STAR ® label</td>
</tr>
<tr>
<td></td>
<td>$100</td>
<td>Rebate doubled for TopTen</td>
</tr>
<tr>
<td>Freezer</td>
<td>$25</td>
<td>ENERGY STAR ® label</td>
</tr>
<tr>
<td></td>
<td>$50</td>
<td>Rebate doubled for TopTen</td>
</tr>
<tr>
<td>Dehumidifier</td>
<td>$25</td>
<td>ENERGY STAR ® label</td>
</tr>
</tbody>
</table>

For a full listing of TopTen USA appliances, please visit: [http://www.toptenusa.org/ct](http://www.toptenusa.org/ct)
2014 Energize CT Residential HVAC and Water Heating Incentives

Presented by:
Nick Jones, Connecticut Light & Power (CL&P), Yankee Gas Services (YGS)
HVAC Program Administrators

Nick Jones, CL&P and Yankee Gas
860-665-5825
Nicholas.jones@nu.com

Jenn Parsons, UI, SCG, and CNG
203-499-5935
Jennifer.parsons@uinet.com
Service Territory Map: Natural Gas
Service Territory Map: Electric
2014 Residential HVAC Goals

Electric: Central AC, Heat Pumps, Ductless HP, Geothermal, Circulator Pumps
- UI = 1,150+ units
- CL&P = approximately 4,000+ units

Natural Gas: Boilers, Furnaces, Water Heaters, and Boiler Reset Controls
- SCG = 2,500+ units
- CNG = 2,500+ units
- Yankee Gas = approximately 3,000+ units
Residential Furnace and Boiler: Rebates

- **ENERGY STAR®** 95% AFUE or higher Natural Gas Furnace: $600
- **ENERGY STAR®** 85% AFUE or higher Oil Furnace: $200
- **ENERGY STAR®** 95% AFUE or higher Propane Furnace: $200
- **ENERGY STAR®** 90% AFUE or higher Natural Gas Boiler (with or without domestic hot water included and with temp. reset): $750

*Effective February 2013, ENERGY STAR® V.4 specifications includes ≤2% ECM furnace fan efficiency requirement*
Residential Boiler Circulator Pump – New in 2014

- Boiler Circulator Pump for any existing boiler: $100

<table>
<thead>
<tr>
<th>Qualifying Boiler Circulator Pumps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
</tr>
<tr>
<td>B&amp;G</td>
</tr>
<tr>
<td>B&amp;G</td>
</tr>
<tr>
<td>Grundfos</td>
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<tr>
<td>Grundfos</td>
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Residential Outdoor Temperature Reset – New in 2014

- **$200** Outdoor Temperature Reset Rebate Requirements:
  - Existing Natural Gas Boilers Only
  - HES Assessment required prior to installation

<table>
<thead>
<tr>
<th>Qualifying Boiler Reset Manufacturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AERCO</td>
</tr>
<tr>
<td>ARGO</td>
</tr>
<tr>
<td>AUTOFLAME</td>
</tr>
<tr>
<td>BECKETT</td>
</tr>
<tr>
<td>BOSCH</td>
</tr>
<tr>
<td>BUDERUS</td>
</tr>
<tr>
<td>BURNHAM</td>
</tr>
<tr>
<td>DUNKIRK BOILERS</td>
</tr>
<tr>
<td>HAMWORTHY HTG</td>
</tr>
<tr>
<td>HBX CONTROL SYS</td>
</tr>
<tr>
<td>HEAT TRANSFER</td>
</tr>
<tr>
<td>HEATLINK</td>
</tr>
<tr>
<td>HEAT-TIMER</td>
</tr>
<tr>
<td>HONEYWELL</td>
</tr>
<tr>
<td>INTELLIDYNE</td>
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</tbody>
</table>
Residential Water Heaters: Rebates

NEW!!!

Higher Incentives for 2014!!

- ENERGY STAR Natural Gas Standalone Storage Tank with 0.67 EF or higher: $100
- ENERGY STAR Natural Gas Condensing Storage Tank with .95 Thermal Efficiency or higher at $300
- ENERGY STAR Tankless Natural Gas Water Heater with Electronic Ignition and 0.82 Energy Factor (EFI) or higher: $300
- ENERGY STAR Tankless Natural Gas Water Heater with Electronic Ignition and 0.94 Energy Factor (EF) or higher: Up to $500*
- NO mail-in rebate for Heat Pump Water Heaters (POD is incorrect) – Discount is being applied at point-of-sale through participating retailers and manufacturers.

*An additional $200 rebate for a total of $500 is available for CNG and SCG residential customers
Residential Ductless Heat Pump: Rebates

- **ENERGY STAR 14.5 SEER, 12 EER, and 8.2 HSPF or higher**
  - AHRI Rated Ductless Split Air Conditioning System of Matched Assembly: **$250** per system
  - AHRI Rated Ductless Split Heat Pump System of Matched Assembly: **$1000** per home, regardless of existing heating fuel
  - Multiport indoor systems with one outdoor unit are not subject to the 12 EER requirement
  - NOTE: The POD doesn’t list this new $1,000 rebate correctly. All ductless installs are eligible for $1,000 per home.
Residential Ductless Rebate Redemption

- Make sure invoice indicates multiport indoor system
- Installation contractor MUST be utility + manufacturer certified
- List of utility qualified contractors found online: http://energizect.com/residents/programs/ductless-split-heat-pump-rebates
Ductless Heat Pump Contractor Training Sessions

- **Thames Valley Winnelson & LG Ductless Training**
  - **Location:** Thames Valley Winnelson (975 North Road, Groton, CT)
  - **Date and Time:** March 13, 2014, 10:00 AM – 2:00 PM

- **Lennox & Utility Training**
  - **Location:** Northeast Utilities (107 Selden Street, Berlin, CT)
  - **Date and Time:** March 18, 2014, 8:00 AM – 12:00 PM

- **Sid Harvey & Fujitsu Ductless Training**
  - **Location:** Best Western (201 Washington Ave., North Haven, CT)
  - **Date and Time:** March 19, 2014, 8:00 AM – 12:00 PM

- **Windsor Winair & Fujitsu Ductless Training**
  - **Location:** Windsor Winair (25 Bidwell Road, South Windsor, CT)
  - **Date and Time:** March 27, 2014, 8:00 AM – 11:00 AM
Residential Central AC and Heat Pumps: Mail-In Rebates

Central Air Conditioning and Heat Pumps:

- AHRI Rated Unitary Air Conditioning and Split systems: 14.5 SEER with 12 EER or higher = $250 per unit
- AHRI Rated Air Conditioning Packaged systems: 14 SEER with 11 EER or higher = $250 per unit
- AHRI Rated Air Source Heat Pump Split systems: 14.5 SEER with 12 EER and 8.2 HSPF = $250 per unit
- AHRI Rated Air Source Heat Pump Packaged systems: 14 SEER with 11 EER or higher and 8.0 HSPF = $250 per unit
Residential Geothermal: Mail-in Rebate

ENERGY STAR certified and utility VIP Workbook required

• Closed Loop Water to Air $500/ton up to 3 tons
• Direct Expansion Refrigerant $500/ton up to 3 tons
• Water to Water $500/ton up to 3 tons

$500 per AHRI reported heating/cooling ton in ½ ton increments to a maximum of $1500/home

NOTE: The 30% federal tax credit is STILL in effect for residential geothermal installs, effective until 2016.
Residential Geothermal Rebate Redemption

- $500 per ton up to 3 tons
- System must be ENERGY STAR certified
- Home MUST go through HES/HPwES first
- Insulation Requirements:
  - R-30+ attic
  - R-19+ walls
- Air infiltration can’t exceed 1 CFM50 per ft²
- VIP Worksheet must be completed by installation contractor
# Residential Geothermal VIP Workbook

## GSHP Field Verification Worksheet--Closed Loop

**Customer Name**: [Field name]

**Address**: [Field name]

**Town**: [Field name]

**Zip**: [Field name]

**Date**: [Field name]

**Contractor**: [Field name]

**Technician**: [Field name]

### Manufacturers Performance Data Inputs

<table>
<thead>
<tr>
<th>Are P/T Ports Present?</th>
<th>Enter Manufacturers Blower Performance data</th>
<th>Enter GPM and PSI data for closest EWT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CFM top row / static pressure (ESP) bottom row</td>
<td>Factory coil data, GPM top row / PSI bottom row</td>
</tr>
</tbody>
</table>

### Blower Type

- [ ] Disable desuperheater, check registers open, I.D. circuit breakers
- [ ] Strip heat present?

### Filter condition

- [ ] Coil condition
- [ ] Strip heat present?

### Supply plenum (in. w.g.)

<table>
<thead>
<tr>
<th>Return plenum (in. w.g.)</th>
<th>Total blower ESP</th>
<th>Air Flow CFM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.00</td>
<td>#DIV/0!</td>
</tr>
</tbody>
</table>

### Capacity Test

<table>
<thead>
<tr>
<th>Operating mode</th>
<th>In</th>
<th>Out</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air temp at air handler</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Water temperature</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Water Pressure</td>
<td>[ ]</td>
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</tr>
</tbody>
</table>

### Power consumption--Heat pump unit

<table>
<thead>
<tr>
<th>Amps</th>
<th>Volts</th>
<th>Pump Amps</th>
<th>Pump Volts</th>
<th>Fan Amps</th>
<th>Fan Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
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</tr>
</tbody>
</table>

### Is Pump power included? Is Fan power included?

<table>
<thead>
<tr>
<th>Net pump watts</th>
<th>Net Fan watts</th>
<th>Comp. Watts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Results

<table>
<thead>
<tr>
<th>Total Capacity (water side)</th>
<th>Percent Rated Capacity</th>
<th>Percent Output Capacity</th>
<th>System watts</th>
<th>System EER</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
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</tbody>
</table>

### Manufacturers Data

<table>
<thead>
<tr>
<th>Capacity (btuh)</th>
<th>Unit</th>
<th>ARI/ISO Rated COP</th>
<th>External F &amp; P Wattage</th>
<th>Fan</th>
<th>Pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

### Adj. Cap. Including F & P

<table>
<thead>
<tr>
<th>Rated Capacity</th>
<th>Total rated wattage</th>
<th>Input Cap Check</th>
<th>Output Gap Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>[ ]</td>
<td>[ ]</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Notes/Comments:**
Residential QIV Program Rebates

- Additional rebate for the customer installing qualified new or replacement CAC or furnace
- CAC = $500 / Natural Gas Furnace = $100
- QIV qualified contractors ONLY
- HES technicians MUST inform HES customers of QIV program eligibility (not everyone qualifies)!!!
- Interested HVAC installers should contact Buck Taylor to enroll: 203-672-1330 or buck@roltay.com
Looking Up ENERGY STAR Qualified Equipment

- **Furnaces**: [http://www.energystar.gov/productfinder/product/certified-furnaces/results](http://www.energystar.gov/productfinder/product/certified-furnaces/results)
- **Boilers**: [http://www.energystar.gov/productfinder/product/certified-boilers/results](http://www.energystar.gov/productfinder/product/certified-boilers/results)
- **Water Heaters**: [http://www.energystar.gov/productfinder/product/certified-water-heaters/results](http://www.energystar.gov/productfinder/product/certified-water-heaters/results)
## ENERGY STAR Certified Boilers

### Compare up to 4 items

#### Filter Options
- **Fuel Type**:
  - Natural Gas: 239
  - Propane: 209
  - Oil: 505
  - Do not filter

#### Brand Name
- Ambassador: 3
- American Standard: 1
- Axeman-Anderson: 11
- Axeman-Anderson Co.: 2

#### Results

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Model</th>
<th>Fuel Type</th>
<th>Efficiency (AFUE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTP - EL-220</td>
<td></td>
<td>Gas</td>
<td>98.0</td>
</tr>
<tr>
<td>Mestek Inc. (RBI Water Heaters) - IE-210</td>
<td></td>
<td>Gas</td>
<td>97.3</td>
</tr>
<tr>
<td>Mestek Inc. (RBI Water Heaters) - IEW-199</td>
<td></td>
<td>Gas</td>
<td>97.3</td>
</tr>
</tbody>
</table>

Want more information? Access the full product list in Excel, API, and other formats. Switch to Advanced View »
AHRI Directory Look-up

- www.AHRIDirectory.org
Rebate Redemption Period

- **Installs from January 1, 2014 – December 31, 2014 ONLY**

- Rebates must be post marked by January 31, 2015
Residential New Construction

- Mail-in rebates don’t apply to new construction homes/projects
- Visit [http://www.energizect.com/residents/programs/residential-new-construction-program](http://www.energizect.com/residents/programs/residential-new-construction-program) to learn about the whole-house incentives available for new homes
- Up to $4,500+ per single family and up to $3,000+ per condo or multifamily unit!
Residential New Construction

Program Contacts

CL&P / Yankee Gas
Enoch Lenge
860-665-5369
Enoch.Lenge@nu.com

UI / CNG, SCG
Jennifer Parsons
203-499-5935
Jennifer.Parsons@uinet.com
Commercial Rebates And Financing Also Available

- Cool Choice
- Gas Space Heating and Water Heating
- Gas Cooking Appliances

Program Contacts:
- Will Riddle at UI, SCG, CNG: william.riddle@uinet.com
- Mark Foley at CL&P, Yankee Gas: mark.foley@nu.com
Questions?

Program Contacts

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UI / CNG, SCG
Jennifer Parsons
203-499-5935
Jennifer.Parsons@uinet.com
Home Energy Solutions – Income Eligible & Multi-Family Overview

Presented by:
Tasha Perrault, Connecticut Light & Power (CL&P), Yankee Gas (YGS)
HES-IE Single Family Qualifications

- HES-IE Customer Must:
  - Complete Application
  - Provide Proof of Income
    - 60% of State Median Income Level
  - Obtain Landlord Permission if Tenant is a Renter
HES-IE Program Offerings

- Program Offerings Are Similar to HES
  - No Co-Payment for Eligible Customers for “Core Services”
    - Blower door guided air sealing
    - Duct airflow assessment and sealing
    - CFL and LED lighting
    - Hot water saving measures
  - A Comprehensive Report Including:
    - Recommendations for further improvements
    - Rebates
    - Financing Options
HES-IE Program Available Incentives

- High Efficiency Lighting
- Insulation
  - Wall, Ceiling, & Basement
- Window Replacement
- Heating System
  - Heat Pump
  - Furnace
  - Boiler
- Appliances
  - Refrigerator
  - Freezer
HES-IE Insulation Incentives

- Attic
  - Qualification: R19 Or Less
- Walls
  - Qualification: R4 Or Less
- Basement or Crawl Space
  - Qualification: Unconditioned, R6 Or Less

Insulation is often paid for in full through the HES-IE incentive
HES-IE Window Incentive

- **Qualification:**
  - Existing Single Pane, No Storm Window

- **Upgrade:**
  - Double Pane, ENERGY STAR®
  - U-Factor of Less than or Equal to 0.30
  - Need NFRC labels
HES-IE Heating System Replacements

- **Heat Pump**
  - HES-IE Incentive based on current electric usage
    - *Mainly for Electric Heat Customers*
- **Furnace/Boiler Replacements**

### DATA INPUTS

**Enter System Information**

<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Equipment Type</th>
<th>Installation Components</th>
<th>Fuel Type</th>
<th>AFUE (%)</th>
<th># Dwelling Units Served</th>
<th>Optional: # Occupants Served</th>
<th>Heated Area Served (Sq. Ft.)</th>
<th>Year of Existing System</th>
<th>Year Home Built</th>
<th>Installed Cost (Includes Removal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retirement Unit</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
### HES-IE Appliance Replacement

- HES-IE Customers who have Refrigerators/Freezers that meet the minimum threshold for replacement may receive appliance free of charge.
  - **NOTE:** Small co-payment if owned by landlord

<table>
<thead>
<tr>
<th>Appliance</th>
<th>Rebate</th>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clothes Washer</td>
<td>$50</td>
<td>ENERGY STAR® label</td>
</tr>
<tr>
<td></td>
<td>$100</td>
<td>Rebate doubled for TopTen</td>
</tr>
<tr>
<td>Refrigerator</td>
<td>$50</td>
<td>ENERGY STAR® label</td>
</tr>
<tr>
<td></td>
<td>$100</td>
<td>Rebate doubled for TopTen</td>
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<tr>
<td>Freezer</td>
<td>$25</td>
<td>ENERGY STAR® label</td>
</tr>
<tr>
<td></td>
<td>$50</td>
<td>Rebate doubled for TopTen</td>
</tr>
<tr>
<td>Dehumidifier</td>
<td>$25</td>
<td>ENERGY STAR® label</td>
</tr>
</tbody>
</table>

For a full listing of TopTen USA appliances, please visit: [http://www.toptenusa.org/ct](http://www.toptenusa.org/ct)
HES-IE Multi Family Projects: Guidelines and Incentives

- **Multi Family** – 5 Units or More
  - 66% of Tenants must qualify as Income Eligible

  **We Offer Larger Incentives On:**

1. Blower Door Sampling
   - Weatherization
2. Lighting
   - Hardwired, CFL and LED
3. Insulation
   - Wall, Ceiling, Basement & Crawl Space
4. Window Replacements
5. Heating Systems
   - Heat Pump
   - Furnace
   - Boiler
6. Appliances
   - Refrigerator
   - Freezer
HES-IE and Multifamily Contact Information

HES-IE Program Contacts

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Market-Rate Multi-Family Program Contacts

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Margaret.Kelly@nu.com

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Jane.Lano@uinet.com
Short Break
Home Performance with ENERGYSTAR®

Presented by:
Nick Jones, Connecticut Light & Power (CL&P), Yankee Gas (YGS)
Cumal Gray, Connecticut Light & Power (CL&P), Yankee Gas (YGS)
John Ruckes, United Illuminating (UIL), Southern Connecticut Gas (SCG), Connecticut Natural Gas (CNG)
Take your Business to the Next Level

Home Performance with ENERGY STAR®
Home Performance

- Who?
  - Customers:
    - Customers doing major home renovations
    - Previous HES participants
  - Contractors:
    - Home Performance trade certifications – BPI or ResNet
    - Home Improvement License
    - Diagnostic Equipment
What is Home Performance?

▪ Comprehensive Energy Improvements
▪ Deeper Energy Savings
▪ Home Components Working as a System
What is Home Performance with ENERGY STAR®?

- Program administered by CL&P and UI through EnergizeCT

- Designed to help customers achieve the best Home Performance by **comprehensively** addressing their home energy use.

- The program, allows access to incentives and financing that would not otherwise be available to the customer.
What Contractors can Participate?

- Any home improvement contractor that does:
  - Insulation
  - Weatherizing
  - Remodeling
  - Window Installation
  - HVAC
  - General Repair
Why Participate?

▪ Help to deliver energy saving solutions to your customers
▪ Can help “level out” your business throughout the year - Reduces seasonality, particularly for HVAC contractors
▪ Differentiate yourself from the competition
▪ Increase Profits
What Certifications Do You Need?

▪ Building Performance Institute Building Analyst and Envelope Certifications
▪ HIC Registration
▪ Certificate of Insurance
▪ EPA Lead Renovation, Repair, and Painting Program (RRP) Certification
▪ Applicable Licenses
The In-Home Process

▪ Home Assessment
▪ Key Themes
  – Before & After
  – Comfort & Safety
  – Incentives & Financing
▪ Consumer Education
Proposal Development

- Customer Involvement
- Core Measures
- Minimum of 2 “Add-On” Measures
- Can Include Custom Measures of “tried and true” Technologies
- Submission to CL&P/UI
  - Use Customer Application
Submitting a Project

- Use the Customer Application
- Attach the Proposal with your Scope of Work
- Review by CL&P/UI Program Staff
- Letter of Agreement (LOA) Sent to Customer
  - Requires Contractor Signature
  - Measures are Itemized
How Does It Work?

- Step 1: Sign up using participation agreements with CL&P and UI
- Step 2: Submit proposals with your customer to CL&P or UI
- Step 3: Receive and sign a Letter of Agreement from CL&P or UI itemizing your customers incentives.
- Step 4: Begin the project and submit invoices to the program administrator upon completion.
- Step 5: After an inspection is made, the incentives are processed and paid directly to the customer.
Home Performance with ENERGY STAR®

YOUR HOME PERFORMANCE WITH ENERGY STAR PROGRAM ADMINISTRATORS:

• Nick Jones, Connecticut Light & Power - 860-665-5825; nicholas.jones@nu.com

• John Ruckes, United Illuminating Company - 203-499-3371; john.ruckes@uinet.com
Upstream Rebate Redemption Promotion

Presented by:
Nick Jones, Connecticut Light & Power (CL&P), Yankee Gas (YGS)
Jennifer Parsons, United Illuminating (UIL), Southern Connecticut Gas (SCG), Connecticut Natural Gas (CNG)
Definitions

- **Downstream** - Consumer or end-user mail-in rebate form redemption (or online submission by the customer)

- **Upstream** - An instant rebate discount applied at the point-of-sale to an installation contractor at an HVAC/plumbing distributor. Can also be a large scale buydown of energy efficient equipment directly to the manufacturer selling to retailers and distributors, to lower the incremental cost between standard and high efficiency equipment.
The Evolution of the Mail-In Rebate: *Upstream*

EnergizeCT is taking a new approach to rebate redemption and fulfillment!

This approach involves turning the traditional mail-in rebates, into point-of-sale instant rebates. These point-of-sale rebates are applied to the equipment cost of high-efficiency HVAC and DHW systems, through participating distributors/suppliers.
Upstream is Not a New Concept

- Retail Lighting Program
- Commercial Lighting Program
One Reason for Moving Upstream: Rebate Flaws + Rejections

- In 2013, of the 8,680 rebates submitted to the utility rebate fulfillment vendor in MA, 2,402 were flawed and 599 were rejected!!!!!!
Rebate Flaws and Rejections Cont.

Furnace and Boiler

- Resolved and processed: 482 (35%)
- Flaws: 26%
- Rejected: 8%
- Application: 32%
- Invoice: 19%
- Utility bill: 22%
- Signed affidavit: (Sandy) 1%
- Other: 4%
- App and utility bill: 4%
- Invoice and app: 8%
Benefits of Upstream

1. Eliminates required customer mail-in documentation which is often submitted incorrectly

2. Promotes greater stocking of high efficiency equipment at the distributor point-of-sale, which is ideal for emergency replacement projects

3. Gives the installation contractor incentive to promote high efficiency equipment, since customer install price can be reduced by the rebate amount applied at point-of-sale
Currently we are running our upstream promotion through *Winnelson* and *Plimpton & Hills* at the following locations for **Natural Gas Water Heaters + Natural Gas Boilers**:

<table>
<thead>
<tr>
<th>Participating Plimpton &amp; Hills Locations</th>
<th>Name</th>
<th>Street Address</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plimpton &amp; Hills</td>
<td>2 Brainard Road</td>
<td>Hartford</td>
<td></td>
</tr>
<tr>
<td>Plimpton &amp; Hills</td>
<td>148 South Colony Drive</td>
<td>Wallingford</td>
<td></td>
</tr>
<tr>
<td>Plimpton &amp; Hills</td>
<td>146 Kings Highway East</td>
<td>Fairfield</td>
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<tr>
<td>Plimpton &amp; Hills</td>
<td>30 Federal Road</td>
<td>Danbury</td>
<td></td>
</tr>
<tr>
<td>Plimpton &amp; Hills</td>
<td>92 Research Drive</td>
<td>Stamford</td>
<td></td>
</tr>
<tr>
<td>Plimpton &amp; Hills</td>
<td>189 Chestnut Street</td>
<td>New Britain</td>
<td></td>
</tr>
<tr>
<td>Plimpton &amp; Hills</td>
<td>401 New State Road</td>
<td>Manchester</td>
<td></td>
</tr>
<tr>
<td>Plimpton &amp; Hills</td>
<td>210 East Canaan Road (Rt. 44), Unit A</td>
<td>East Canaan</td>
<td></td>
</tr>
<tr>
<td>Plimpton &amp; Hills</td>
<td>1415 East Main Street</td>
<td>Torrington</td>
<td></td>
</tr>
<tr>
<td>Plimpton &amp; Hills</td>
<td>24 Nod Road</td>
<td>Clinton</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participating Winnelson/Winair/Winsupply Locations</th>
<th>Name</th>
<th>Street Address</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branford Winnelson Co.</td>
<td>22 McDermott Rd</td>
<td>Branford</td>
<td></td>
</tr>
<tr>
<td>Bristol Winnelson Co.</td>
<td>95 Valley St</td>
<td>Bristol</td>
<td></td>
</tr>
<tr>
<td>Essex Winnelson Co.</td>
<td>186 Westbrook Rd</td>
<td>Essex</td>
<td></td>
</tr>
<tr>
<td>Hartford Winnelson Co.</td>
<td>287 R Homestead Ave</td>
<td>Hartford</td>
<td></td>
</tr>
<tr>
<td>Manchester Winnelson Co.</td>
<td>160 Hartford Rd</td>
<td>Manchester</td>
<td></td>
</tr>
<tr>
<td>Middletown Winnelson Co.</td>
<td>120 DeKoven Dr</td>
<td>Middletown</td>
<td></td>
</tr>
<tr>
<td>Shelton Winnelson Co.</td>
<td>740 River Rd</td>
<td>Shelton</td>
<td></td>
</tr>
<tr>
<td>Stamford Winnelson Co.</td>
<td>95 Elmcroft Rd</td>
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<tr>
<td>Thames Valley Winnelson Co.</td>
<td>975 North Rd</td>
<td>Groton</td>
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<tr>
<td>Wallingford Winnelson Co.</td>
<td>1068 N. Farms Rd Bldg 1</td>
<td>Wallingford</td>
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<tr>
<td>Willimantic Winnelson Co.</td>
<td>65 Moulton Ct</td>
<td>Willimantic</td>
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<tr>
<td>Danbury Winair Co.</td>
<td>558 Federal Rd</td>
<td>Brookfield</td>
<td></td>
</tr>
<tr>
<td>Essex Winair Co.</td>
<td>11C Bokum Rd</td>
<td>Essex</td>
<td></td>
</tr>
<tr>
<td>Portland Winair Co.</td>
<td>70 Tuttle Rd</td>
<td>Middletown</td>
<td></td>
</tr>
<tr>
<td>Shelton Winair Co.</td>
<td>740 River Rd</td>
<td>Shelton</td>
<td></td>
</tr>
<tr>
<td>West-Fair Winair Co.</td>
<td>54 Sunnyside Ave</td>
<td>Stamford</td>
<td></td>
</tr>
<tr>
<td>Danbury Winsupply Co.</td>
<td>558 Federal Rd Bldg B</td>
<td>Brookfield</td>
<td></td>
</tr>
</tbody>
</table>
Participating Equipment 4/1/2014

- Natural Gas Boilers
- Natural Gas Furnaces (Pending – 04/01/2014)
- Natural Gas Water Heaters
- Oil Furnaces (Pending – 04/01/2014)
- Propane Furnaces (Pending – 04/01/2014)
- Boiler ECM Circulator Pumps (Pending – 04/01/2014)

**NOTE:** All equipment must be ENERGY STAR® certified to qualify
How Install Contractors Participate

- Purchase qualified equipment from a participating distributor
- Tell the distributor the installation address and customer name
- Distributor will discount the equipment cost by the Energize CT rebate amount
- Installation contractor will then sell the installation to the end-use residential customer for a total price taking into account the rebate that was already applied
How Distributors Participate

1. Sign an Agreement with the utilities (Pending legal review from utility)
2. Compile a listing of all eligible equipment stocked and sold
3. Only sell eligible equipment to licensed HVAC installers, not DIY homeowners
4. Track and report all equipment sold at a discounted price including installation address, install customer name, make, model #, etc.
5. Utilities will reimburse distributor monthly for all rebated equipment purchases WITH a processing fee paid to the distributor
Upstream Program: Important Notes

- Equipment must be installed at residential locations only

- Accurate customer name and install address must be given to distributor

- Customer **WON’T** be eligible for mail-in rebate!
  This is being verified by the utility rebate fulfillment vendor
Upstream Program: Important Notes Cont.

- Installation Contractor: Discount your final install price accordingly and notify the customer that you have done so
  - **NOTE (1):** The EnergizeCT discount will be a line item on the distributor invoice to the contractor.
  - **NOTE (2):** End-users will be notified via direct mailing (eg. Postcard) from the utilities that their equipment received a discount through EnergizeCT

- Eventually the utilities will no longer offer mail in rebates

- Utilities will be completing on-site inspections to verify equipment is being installed
Upstream: Heat Pump Water Heater

- Participating distributors so far:
  - Winnelson (AO Smith brand)
  - Plimpton & Hills (AO Smith brand)

- Soon to come:
  - GE (Pending)
  - Stiebl Eltron (Pending)
  - Open for other brands
Upstream Kick Off Workshop for Distributors

March 14, 2014
Northeast Utilities
107 Selden Street, Berlin, CT 06037
8:00 AM – 12:00 PM

Breakfast will be provided

Register online at www.cl-p.com/register and click on the 14th.
Questions?

Program Contacts

CL&P / Yankee Gas
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860-665-5825
Nicholas.Jones@nu.com

UI / CNG, SCG
Jennifer Parsons
203-499-5935
Jennifer.Parsons@uinett.com
Boiler Reset Controls

Presented by Guest Speaker:
John Manning (Beckett)
Circulated Hot Water

• Hydronics
  – Heating system utilizing water as a heat transfer medium
  – Two methods employed residentially
    • Circulated hot water, most common
    • Low pressure steam

• Heating system comprised of:
  – Heat source
  – Heat exchanger
  – Heat transfer fluid
  – Emitters
Design application

• Heat loss survey performed
• Building design data collected to determine heat loss
  – Infiltration factor of envelope
    • Insulation
    • Crack/ventilation loss
• Criteria is based on established temperature data
• System is designed to maintain 70F inside at design temperature
Points to ponder

• Consider a system designed at 70\(^\circ\)\(\Delta T\)

• For this example the heat loss is 50,000BTU/hr., (based on design temp of 0\(^\circ\)F)

• What is the heat loss when it is 40\(^\circ\)F?
  
  \[ U \times \Delta T \times \text{Exposed Area} = \text{Heat Loss} \]

  \[ \frac{50,000}{70^\circ \Delta T} = 714.29 \]

  \[ 714.29 \times 40^\circ \Delta T = 28,572 \text{BTU/hr} \]

Design temperatures are reached for less than 8% of the season.

Mean winter temperature in our area is about 40\(^\circ\)F.

Therefore this system is oversized most of the year.
Hydronic Advantage

• Emitters are selected based on design load
• Output depends on entering water temperature
  – Performance is directly proportional
    • Increase entering heat transfer fluid temperature, increase output of the emitters

The heat transfer fluid temperature is selected based on output of the emitters and the load. By adjusting the HTF temp we can meet the load without wasted energy.
Reset Examples

• Consider this baseboard chart

**PETITE 7" BASEBOARD RATINGS**

<table>
<thead>
<tr>
<th>Model</th>
<th>GPM</th>
<th>120°</th>
<th>130°</th>
<th>140°</th>
<th>150°</th>
<th>160°</th>
<th>170°</th>
<th>180°</th>
<th>190°</th>
<th>200°</th>
</tr>
</thead>
<tbody>
<tr>
<td>P77A 3/4&quot;</td>
<td>4</td>
<td>225</td>
<td>285</td>
<td>350</td>
<td>410</td>
<td>480</td>
<td>540</td>
<td>600</td>
<td>670</td>
<td>730</td>
</tr>
<tr>
<td></td>
<td>1</td>
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<td>270</td>
<td>330</td>
<td>390</td>
<td>450</td>
<td>510</td>
<td>570</td>
<td>630</td>
<td>690</td>
</tr>
<tr>
<td>P75A 1/2&quot;</td>
<td>4</td>
<td>235</td>
<td>290</td>
<td>355</td>
<td>420</td>
<td>490</td>
<td>560</td>
<td>620</td>
<td>690</td>
<td>760</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>220</td>
<td>275</td>
<td>335</td>
<td>400</td>
<td>460</td>
<td>530</td>
<td>590</td>
<td>650</td>
<td>720</td>
</tr>
</tbody>
</table>

Entering water temp, (ewt), 180°
Baseboard output 600 BTU/hr/lineal Ft.
50,000BTU/hr / 600BTU/hr/ft.=84’ baseboard
Stop the math...

- The load is 28,572 BTU/hr. at 40°F outside.
- Petite is rated for 350 BTU/ft. at 140°F ewt.
- 350 BTU/ft. X 84’ = 29,400 BTU/hr.

**PETITE 7" BASEBOARD RATINGS**

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<tr>
<td></td>
<td>1</td>
<td>215</td>
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<td>330</td>
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<td>450</td>
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<td>570</td>
<td>630</td>
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<td>460</td>
<td>530</td>
<td>590</td>
<td>650</td>
<td>720</td>
</tr>
</tbody>
</table>

*Why heat the water to 180°F when we only need 140°F?*
Boiler Reset

• Two types of reset
  – Outdoor reset
  – Indoor reset
• Both control boiler operating temperatures
• Energy savings are essentially the same
• Selection is driven by system and occupant comfort
Outdoor reset

- Reset ratio is established by conducting a heat loss survey
- Reset curve is programmed into control
- Reset refers to temp. of heat transfer fluid in relationship to outdoor temperature
- Temperatures are inversely proportional

- Example-1:1 reset ratio
  - Determine ewt at design
  - Determine ewt at midpoint delta
- Select reset curve
- Control will limit boiler temperature
Reset Curve

- High Limit Setting
- Minimum Reset Temperature

OUTDOOR AIR TEMPERATURE (OAT)
Indoor reset

• Indoor reset uses an algorithm
• Algorithm operating parameter is dependent on design philosophy
• 2 design philosophies
  – Variable differential (Temperature purge)
  – Adjustable high limit

• Each will consider rate of heat transfer fluid temperature change
  – Purge has fixed high limit, varying burner start temperature
  – Adjustable high limit resets operating high limit to calculated HTF temp. requirements
Common advantages

• Both reset philosophies will result in energy savings

• System performance is enhanced by:
  – Consistent temperature
  – Reduced burner cycles

• Outdoor reset limits space temperature by design

• Indoor reset limits space temperature by thermostat setting
AquaSmart Advantage

• Advance Boiler Temperature Control
• Universal replacement
• Microprocessor control
• Wide HTF temperature settings
• Circulator program features
• Built in DHWP option
• Heat Manager standard
  – Meets DOE 2012 requirements
• Self checking sensor
• Remote mount option, up to 325’ from boiler*
• Industry standard wiring terminals
• Digital display
• Cycle history display
• Well or remote mount
• Temperature Boost

• Freeze protection
• Control can be programed to reduce flue gas condensation
• Circulator exercise
• Optional LWCO
• 30VA available from TR/B2 on 7600B
• On board vent damper molex on 7600B

*Control must remain in boiler area
Energy Savings

- Retrofit controls have a 10% energy savings
- Optional wireless outdoor reset control
- Recommend WTM/OTR when:
  - System has numerous zones
  - System is low temperature/radiant
  - Building has a large DHW demand, supplied by an indirect
Thank you!
Lunch Break
Gas Expansion in Connecticut

Presented by:
Mike Collins, Yankee Gas Services (YGS)
Expanding Access to Natural Gas In Connecticut

March 11, 2014
The Opportunity:

- Job Creation
- Economic Impact
- Residential Customer Savings
- Business Competitiveness
- Energy Independence
- Environmental Benefits
Why Natural Gas Expansion in Connecticut

Significant Savings Opportunity for Connecticut Residents and Businesses

Most Environmentally friendly fossil fuel

We have the Resources, Capability and Capacity to serve Connecticut

Safe and Domestic Energy Supply
Natural Gas Deposits in the United States
Price Outlook to 2040+
Delivered Cost of Natural Gas vs. Oil
EIA Data
March 4, 2014 Heating Oil Prices

vs.

March 2014 Equivalent Natural Gas Cost

$1.32

$2.24

$5.91

$4.15

68% Cost Advantage

46% Cost Advantage

43% Cost Disadvantage

Yankee Gas Multi Dwelling (Rate 03-SE On Main)

Yankee Gas Heating Cust (Rate 02-SE On Main)

CT Average Propane $3.90 / Gallon

CT Average Retail Home Heating Oil

CT Average Retail Heating Oil Prices (per OPM)
Provided by Department of Energy and Environmental Protection DEEP
CT Commercial Heating Fuel Prices

*Annualized monthly costs based on system expansion on main rates
#2 average wholesale fuel source: The Journal of Commerce, Oil price daily.

February 24, 2014 Wholesale Oil Prices

vs.

March 2014 Equivalent Commercial Natural Gas Cost*

$4.00

$3.50

$3.00

$2.50

$2.00

$1.50

$1.00

$0.50

$0.00

$2.24

$1.47

$1.22

$3.75

Yankee Gas Commercial (Rate 10-SE On Main)

Yankee Gas Commercial (Rate 20-SE On Main)

Yankee Gas Commercial (Rate 30-SE On Main)

Average Wholesale Fuel- N. Haven

40% Cost Advantage

61% Cost Advantage

67% Cost Advantage

$3.75
Natural Gas Reserves
Hit ALL time High in America
Natural Gas Expansion In Connecticut

Significant Savings Opportunity for Connecticut Residents and Businesses (40 to 70% Savings)

Gas Expansion Maximizes availability to expand to a large part of Connecticut

We have the Resources, Capability and Yankee Gas is Committed to moving forward
Questions
Thank You

Yankeegas®

A Northeast Utilities Company
High Efficiency Circulator Pump Training

*Presented by Guest Speaker:*
David Urell (Urell)
E-Pump Technology – Grundfos ALPHA
# URELL Contact Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone Number</th>
<th>Email</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob Brown</td>
<td>617-600-9432</td>
<td><a href="mailto:bbrown@urell.com">bbrown@urell.com</a></td>
<td>Residential Rep</td>
</tr>
<tr>
<td>Kevin Crean</td>
<td>617-600-9423</td>
<td><a href="mailto:kcrean@urell.com">kcrean@urell.com</a></td>
<td>Commercial Rep</td>
</tr>
<tr>
<td>Geary Stacey</td>
<td>617-600-9433</td>
<td><a href="mailto:gstacey@urell.com">gstacey@urell.com</a></td>
<td>Sales Manager, Res</td>
</tr>
<tr>
<td>David Urell</td>
<td>617-600-9347</td>
<td><a href="mailto:david@urell.com">david@urell.com</a></td>
<td>Owner</td>
</tr>
</tbody>
</table>
• Potential Savings In Pump Applications
• Efficiency Opportunity Grid
• Grundfos ALPHA
• Examples of Savings
• How to Participate
Potential

- Pumps Use > 10% of Global Electricity
- In US > 20% of Electricity
- Upgrade Every Pump Worldwide to Latest Technology
  - Equivalent Savings to Power 1 Billion Households
- Savings of 40% to 90% are Achievable
Savings in CT – ECM or “E-Pump” Technology

- Energize CT Program supports ECM motor pumps
- Each ECM motor pump has the potential to save 285kwh electricity year
- Approx. average retail electric cost is $0.20 per kwh
- Energy cost savings up to $57 per circulator!
Efficiency Grid

<table>
<thead>
<tr>
<th>Hydraulic</th>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logic and Control</td>
<td>Installation and Persistence</td>
</tr>
</tbody>
</table>

Wire to Water Efficiency Eta%

Speed Control
Self Optimizing
Simple Installation
Grundfos ALPHA

• Most Efficient Circulator in U.S.
• Made in Fresno, California
• More than 5 Million Installed Globally
• 3-Year Warranty
Grundfos ALPHA – Efficiency Checklist

• Hydraulic and Electrical Efficiency
  • Optimized Hydraulics
  • Permanent Magnet Motor
    Manufacturing Since 1991
• Highest Eta% Efficiency in NA
Permanent Magnet Motor

Induction motor

When a current is running in the rotor windings (cage), it will create a magnetic field.

The current that creates this field is called the magnetising current.

But the magnetising current will also create losses.

Permanent Magnet Motor

A permanent magnet (the rotor is premagnetised) will create a magnetic field, whether the motor is running or not.

As it is a magnet, there are no losses in it.

Motor is not running

Motor is running

Motor is not running

Motor is running
Grundfos ALPHA – Efficiency Checklist

• Control and Logic – 7 Modes
  • AutoADAPT Self Optimizing
    • Single Zone Applications
    • Multi Zone Applications
  • 3 Delta P Modes
  • 3 Constant Speed Modes
• Flow and Power indicator
**AUTO ADAPT**

- **Auto Adapt** - ALPHA will control pump performance automatically allowing **Maximum Efficiency**. (Shaded Area)
- **Fixed Speed** - Sets pump to run at constant curve.
- **Constant Pressure** - Duty point moves left and right along constant pressure curve maintaining head(6-9-12 ft) irrespective of water demand.
Simplified version

Where can AUTO\textit{ADAPT} be used?

- Single Zone Applications
  Automatically Right Sizes
- Multi Zone with Valves
  Automatically Adjusts
Grundfos ALPHA – Efficiency Checklist

• Installation
  • AutoADAPT on Startup
    • No programming
  • Standard 6-1/2” Flange Space
  • Integrated/Removable Check
  • Bolt in, Power up, Walk Away
  • No Additional Steps Required
- Replaces Most Residential Circulators
- 6-1/2” Flange To Flange
- Conduit Connection
- Line Cord Option
- Cast Iron
- Stainless
<table>
<thead>
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</table>

Thank You
E-Pump Technology – Grundfos ALPHA

THANK YOU
Energy Efficiency Financing Overview
## EE Financing Overview

http://www.energizect.com/residents/solutions/financing

<table>
<thead>
<tr>
<th>Program</th>
<th>Administrator</th>
<th>Lending Partner</th>
<th>Interest Rate</th>
<th>Maximum Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Energy Efficiency Financing Program</td>
<td>Comprehensive Projects</td>
<td>CL&amp;P, UI, CNG, SCG &amp; YGS</td>
<td>CHIF</td>
<td>2.99%</td>
</tr>
<tr>
<td>Residential Energy Efficiency Financing Program</td>
<td>Single Measure</td>
<td>CL&amp;P, UI, CNG, SCG &amp; YGS</td>
<td>CHIF</td>
<td>0%</td>
</tr>
<tr>
<td>EnergizeCT Heating Loan</td>
<td>Heating System</td>
<td>CL&amp;P, UI, CNG, SCG &amp; YGS</td>
<td>AFC First</td>
<td>2.99%</td>
</tr>
<tr>
<td>Smart E Loans</td>
<td>Statewide</td>
<td>CEFIA, CL&amp;P, UI, CNG, SCG &amp; YGS</td>
<td>9 Participating Lenders &amp; CHIF*</td>
<td>4.49% - 6.99%**</td>
</tr>
<tr>
<td>Energy Conservation Loan Program</td>
<td>Income limitations</td>
<td>CHIF</td>
<td>CHIF</td>
<td>0% - 6%***</td>
</tr>
<tr>
<td>Cozy Home Loans</td>
<td>Fairfield, Litchfield and New Haven Counties only</td>
<td>Housing Development Fund</td>
<td>AFC First</td>
<td>5.99%</td>
</tr>
<tr>
<td>CT Solar Loan</td>
<td></td>
<td>CEFIA</td>
<td>Sungage Financial</td>
<td></td>
</tr>
<tr>
<td>CT Solar Lease</td>
<td></td>
<td>CEFIA</td>
<td>AFC First</td>
<td></td>
</tr>
</tbody>
</table>

*9 Participating Lenders are CorePlus Federal Credit Union, Eastern Savings Bank, Ion Bank, Liberty Bank, Nutmeg Federal Credit Union, Patriot National Bank, Quinnipiac Bank and Trust, Thomaston Savings Bank and Union Savings Bank

**Interest rate is determined by # of years of repayment and lender

***Interest rate is determined on income
EnergizeCT Heating Loan
New for 2014

Presented by:
Greg Burns (AFC-First)
Contractor Update
Unsecured, True Fixed Rate™
On-Bill Financing for
ENERGY STAR Heating Upgrades
Low Rate, Low Monthly Payment On-Bill Financing to Help Connecticut Contractors Drive Sales of Energy Efficiency Home Heating Systems

- Boilers - Natural Gas or Propane or Oil
- Furnaces - Natural Gas, Propane or Oil
- Split System Heat Pumps
- Single Packaged Unit Heat Pumps
- Ductless Heat Pumps
What is the Energize CT Heating Loan Program?

- Residential customers of Connecticut Light & Power (CL&P) or The United Illuminating Company (UI) may be eligible for a low-interest loan to purchase and install an energy efficient heating system.
What is the Energize CT Heating Loan Program?

- 2.99% APR financing for residential heating equipment upgrades or conversions
- Loans up to $15,000
- Installments on the loan will be billed conveniently on the customer’s monthly electric bill
- Low monthly payments on loan terms from 3 to 10 years which will result in a monthly payment equal to or less than the projected monthly energy savings
- Up to 90% of the heating system equipment and installation may be financed depending on projected energy savings – the greater the savings, the lower the down payment
Who is Eligible?

- Residential rate customers of participating utilities
- Must own the property
- Applicants must be current for the last 6 consecutive months of their electric utility bills (no late charges) - there are no other credit qualifications
- The loan is repaid through the customer’s electric bill. If the property is sold, the unpaid loan may be paid off in full or transferred to the new owner
What Improvements Qualify?

ENERGY STAR®-Rated Products:

- Natural Gas or Propane Boilers - AFUE ≥85
- Natural Gas or Propane Furnaces - AFUE ≥95
- Oil Boilers - AFUE ≥ 85
- Oil Furnaces - AFUE ≥ 85
- Air Source Heat Pumps
  - SEER ≥14.5, EER ≥ 12, HSPF ≥ 8.2 for split systems
  - SEER ≥14, EER ≥ 11, HSPF ≥ 8.0 for single packaged systems
- Ductless Heat Pumps
  - SEER ≥14.5, EER ≥12, HSPF ≥ 8.2
Marketing Tools for Contractors

- Simple Mobile and Web-Based tool to allow contractors to instantly quote customers monthly payment and down payment based on projected energy savings of proposed heating system

- Integrated custom loan on-line application with instant conditional approval (based on program guidelines and verification of utility bill payment history)

- Co-branded contractors marketing material

- No loans fees, charges or discounts to contractor!
Marketing Tools for Contractors

Low Rate Financing for Energy Efficient Heating Systems
If you are a residential customer of Connecticut Light & Power (CL&P) or The United Illuminating Company (UIC), you may be eligible for a low-interest loan to purchase and install an energy efficient heating system.

- 2.99% APR financing for residential heating equipment upgrades or conversions
- Loans up to $15,000
- Installments on your loan will be billed conveniently on your monthly electric bill
- Low monthly payments on loan terms from 3 to 10 years which will result in a monthly payment equal to or less than your projected monthly energy savings
- Up to 90% of the heating system equipment and installation may be financed depending on projected energy savings—the greater the savings, the lower the down payment

Who is Eligible?
- Residential rate customers of participating utilities
- Must own the property
- Applicants must certify that the loan is necessary to maintain the property
- Cannot have other credit qualifications
- The loan is repaid through the customer’s electric bill. If the property is sold before the loan is paid off, the remaining loan amount may be paid off in full or transferred to the new owner

Who Can Perform the Work?
- This APR First Energy CT heating loan approved contractor can perform the work.

Getting a Loan
Step 1: Get an Estimate
Contact an APR First Approved Energy CT Heating Loan Contractor to get an estimate for qualifying improvements. Visit energizeCT.com/heatingloan or call 855-383-5090 to find an approved contractor in your area.

Step 2: Fast Approval
Mobile and Web-based tools allow your contractor to instantly qualify your monthly payment and down payment based on projected energy savings of the proposed heating system. Instant conditional approvals based on program guidelines and verification of electric utility bill payment history. You may apply online or by phone.

Step 3: Installation and Payment to Contractor
Your contractor will need a copy of your resided energy personal and Contractor Submission Sheet identifying final loan and qualifying improvements. You sign the simple one-page lease rate we provide to you. We pay the contractor upon receipt of a signed Completion Certificate and verbal confirmation from you, the customer, that the work has been done to your satisfaction.

What Will the Loan Cover?
The remaining cost (after down payment) for the purchase and installation of a new qualifying heating system (includes water heating as part of a combined heating system).

Can I Receive a Rebate on My Heating System Too?
Yes, you can apply to receive a rebate, if available, on qualifying energy-efficient furnaces and boilers through your utility. Incentives for qualifying equipment can be found at EnergizeCT.com or by calling 860-547-3631.

Questions? Call 855-383-5090
EnergizeCT.com/HeatingLoan EnergizeCT.com/Heatingloan

energize
CONNECTICUT
CT

Special Financing for Residential Energy-Efficient Heating System Upgrades
Electric • Natural Gas Oil • Propane

EnergizeCT.com/HeatingLoan

Connecticut Light & Power A Northeast Utilities Company
The United Illuminating Company

AFCFIRST Since 1947

CNG
Yankeeggs
SAVE MONEY, ENERGY, AND IMPROVE YOUR FAMILY’S COMFORT WITH AN ENERGY-EFFICIENT HEATING SYSTEM.

Special Financing for Residential Energy-Efficient Heating System Upgrades

Low Rate Loans for Energy-Efficient Heating Systems

If you are a residential customer of Connecticut Light & Power (CL&P) or The United Illuminating Company (UI), you may be eligible for a low-interest loan to purchase and install an energy efficient heating system.

Please note: Applications are being accepted for CL&P customers. Applications for UI customers will be accepted shortly. If you are a UI customer, please call 855-803-3090 and provide your name and contact information and we will inform you as soon as we can accept your application.

Financing By

AFC First Financial Corporation is a national leader in residential energy-efficiency and renewable lending programs through its EnergyLoan® program, in partnership with states, utilities, manufacturers and...
Consumer “Find a Contractor”

Find a Contractor

Enter your Zip Code below to find an Approved Contractor near you.

Your Zip Code

Distance

5 Miles

Search by Location

These contractors are authorized to perform work under the Energize CT Heating Loan Program. If you are thinking about using a Contractor who is not listed, have them contact us about becoming an Approved Contractor.

Please note that many Contractors specialize in only a limited number of services. Please contact them directly to learn more about the specific services they provide.

Click here if you would like information on becoming an Approved Contractor
Custom Loan Application Link for Each Contractor from Your Website
Mobile and Web-based Contractor Tool to Instantly Calculate Monthly Payment and Required Down-Payment

- [http://secure2.afcfirst.com/ctobf](http://secure2.afcfirst.com/ctobf)

- Monthly payment and down payment required (minimum 10%) will be based on the projected energy savings of the proposed heating system. Annual energy savings will be calculated in accordance with the Connecticut Program Savings Document (CPSD) 9th Edition for 2014 Program Year dated 11/08/2013 for the list of qualified measures.
Simple Drop Down Inputs on Current and Proposed System

<table>
<thead>
<tr>
<th>Please Tell Us About Your Property &amp; Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Zip-code</td>
</tr>
<tr>
<td>06040</td>
</tr>
<tr>
<td>What Year Was Your Property Built?</td>
</tr>
<tr>
<td>1950</td>
</tr>
<tr>
<td>What is the Heated Square Footage of Your Property?</td>
</tr>
<tr>
<td>1500 - 1999 sq/ft</td>
</tr>
<tr>
<td>What is Your Current Primary Fuel Used to Heat Your Property?</td>
</tr>
<tr>
<td>Fuel Oil (No. 2)</td>
</tr>
<tr>
<td>What is Your Total Estimated Project Cost?</td>
</tr>
<tr>
<td>$6000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Your Current Heating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Your Current Heating System?</td>
</tr>
<tr>
<td>Furnace</td>
</tr>
<tr>
<td>What is the AFUE?</td>
</tr>
<tr>
<td>85 AFUE</td>
</tr>
<tr>
<td>Do You Have Air Conditioning?</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Your Proposed Heating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Your Proposed Heating System?</td>
</tr>
<tr>
<td>Furnace</td>
</tr>
<tr>
<td>What is Your Proposed Heating Fuel?</td>
</tr>
<tr>
<td>Fuel Oil (No. 2)</td>
</tr>
<tr>
<td>What is the AFUE?</td>
</tr>
<tr>
<td>95 AFUE</td>
</tr>
</tbody>
</table>
Instant Results to Validate Improvement, Show Monthly Payment and Required Down Payment

Your EnergizeCT Heating Loan Summary

Financing is available under the EnergizeCT Heating Loan Program.

**Confirmation Code:** ECT545WEMZFP
Please save your confirmation code. Your Energy Lending Specialist, who is processing your loan, will ask for your confirmation code to verify the qualifying loan term, monthly payment and required down payment for your proposed heating system.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Cost</td>
<td>$6000.00</td>
</tr>
<tr>
<td>Monthly Fuel Savings</td>
<td>$78.14</td>
</tr>
<tr>
<td>Maximum Loan Term</td>
<td>108 Months</td>
</tr>
<tr>
<td>Loan Amount</td>
<td>$5400.00</td>
</tr>
<tr>
<td>Down Payment</td>
<td>$600.00</td>
</tr>
<tr>
<td>Monthly Payment</td>
<td>$57.09</td>
</tr>
</tbody>
</table>
## Sample Results

- A Great Option for Many – But Not For Everyone or Every Case
- Some Projects May Not Qualify or Require a Very Large Down Payment

<table>
<thead>
<tr>
<th></th>
<th>Good</th>
<th>Good</th>
<th>Marginal</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>House Age</strong></td>
<td>1950</td>
<td>1950</td>
<td>1970</td>
<td>1990</td>
</tr>
<tr>
<td><strong>Square Footage</strong></td>
<td>1750</td>
<td>2250</td>
<td>4000</td>
<td>2500</td>
</tr>
<tr>
<td><strong>Current System</strong></td>
<td>65% Oil Furnace</td>
<td>65% Oil Furnace</td>
<td>70% Gas Boiler</td>
<td>70% Gas Furnace</td>
</tr>
<tr>
<td><strong>Proposed System</strong></td>
<td>95% Gas Furnace</td>
<td>95% Oil Furnace</td>
<td>95% Gas Boiler</td>
<td>Heat Pump 17 SEER 8.2 HSPF</td>
</tr>
<tr>
<td><strong>Project Cost</strong></td>
<td>$6,000</td>
<td>$6,000</td>
<td>$8,000</td>
<td>$8,000</td>
</tr>
<tr>
<td><strong>Projected Monthly Fuel Savings</strong></td>
<td>247.46</td>
<td>100.47</td>
<td>49.31</td>
<td>5.28</td>
</tr>
<tr>
<td><strong>Loan Term</strong></td>
<td>60</td>
<td>84</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td><strong>Monthly Payment</strong></td>
<td>97.01</td>
<td>71.33</td>
<td>49.31</td>
<td>5.28</td>
</tr>
<tr>
<td><strong>Required Down Payment</strong></td>
<td>600</td>
<td>600</td>
<td>2890.77</td>
<td>7452.80</td>
</tr>
</tbody>
</table>
Simple Consumer & Contractor-Friendly Loan Process

- **Customer Gets Estimate**
  - Customer contacts an AFC First Approved Energize CT Heating Loan Contractor to get an estimate for qualifying improvements.

- **Easy Customer Application**
  - Mobile and Web-Based tool allows contractors to instantly quote customers monthly payment and down payment based on projected energy savings of proposed heating system or applications accepted by phone.

- **Fast Approval**
  - Instant conditional approval (based on program guidelines and verification of utility bill payment history – Online or by phone).

- **Contractor Provides Job Info**
  - Contractor sends us a copy of their estimate/proposal and Contractor Submission Sheet identifying final price and qualifying improvements.

- **Customer Signs Note**
  - Customer signs the simple one page loan note we will provide to them (or to the contractor for delivery to the customer).

- **We Pay the Contractor**
  - We pay the Contractor same day upon receipt of Completion Certificate and verbal customer confirmation that the work has been done to their satisfaction.
• Bob Groegler  
Business Development Manager  
rgroegler@afcfirst.com  
(610) 393-3341

• Greg Burns  
Business Development Manager  
gburns@afcfirst.com  
(207) 451-5012

• Tessa Shin  
Director of Programs  
tshin@afcfirst.com  
ext 2692

• Peter Krajsa  
Chairman and CEO  
pkrajsa@afcfirst.com  
ext 2685

• John Hayes  
President and COO  
jhayes@afcfirst.com  
ext 2683

• Laura Nelson  
Executive Vice President and CFO  
lnelson@afcfirst.com  
ext 2696

• Ken Yeager  
VP - National Accounts  
kyeager@afcfirst.com  
(443) 739-6939

• Ben Rainford  
VP of Production  
brainford@afcfirst.com  
ext 2732

• Pat Stumpp  
VP, Senior Credit Officer  
pstumpp@afcfirst.com  
ext 2691

(888) 232-3477  
ctenergyloan.com (coming soon)  
afcfirst.com
Home Energy Solutions (HES)
Residential Financing
Eligible Measures/HES Assessment Process

- **Home Energy Solutions Program (HES)**
  CL&P Customers no longer required to participate in HES or HPwES for all loans (still required for certain loans/interest rates)

- **$1,000-$3,000 and $3,000-$25,000 loan options** with maximum loan term of 3 years/12 years

- **Work financed shall apply to qualifying measures**
  Non-listed work directly related and necessary to the installation of the qualifying measures (or related to health and safety issues) may be financed along with the qualifying measure at the applicable interest rate (up to 20% of total)

- **Measures with unproven or questionable savings--NOT allowed** (including but not limited to fuel oil catalyst products, radiant barriers, and power correction devices)
Customers may apply over the phone:

Local: 860-233-5165
Or toll-free in CT: (855) 671-3946

Customers may apply by fax:

860-233-3920

And customers may apply by mail:

CHIF
121 Tremont St.
Hartford, CT 06105
ATTN: HES Application
HES Loan Application and Underwriting Process

Customers may apply online ([www.chif.org](http://www.chif.org))

<table>
<thead>
<tr>
<th>Loan Program</th>
<th>Loan Amount</th>
<th>Interest Rate</th>
<th>Term</th>
<th>Repayment</th>
<th>Utility Customers Eligible</th>
<th>HES or HPwES Required?</th>
<th>Eligible Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Energy Efficiency Payment Plan</td>
<td>$1,000 - $3,000</td>
<td>0.00% (0% APR)</td>
<td>36 months</td>
<td>On-bill (electricity account)</td>
<td>CL&amp;P and UI</td>
<td>Yes</td>
<td>Type 1 measures</td>
</tr>
<tr>
<td>2. Comprehensive Energy Efficiency Project Loan</td>
<td>$3,000 - $25,000</td>
<td>2.99% (2.99% APR)</td>
<td>Up to 120 months</td>
<td>On-bill (electricity account) or through CHIF (CL&amp;P only)</td>
<td>CL&amp;P and UI</td>
<td>Yes</td>
<td>Must include at least one Type 1 measure and one other Type 1 or Type 2 measure*</td>
</tr>
<tr>
<td>3. All Other Projects</td>
<td>$3,000 - $25,000</td>
<td>4.49% (4.49% APR)</td>
<td>60 months</td>
<td>On-bill (electricity account) or through CHIF</td>
<td>CL&amp;P</td>
<td>No</td>
<td>Any program-eligible measure</td>
</tr>
</tbody>
</table>
HES Loan Application and Underwriting Process (cont.)

- **$3,000 to $25,000** loan, up to 12-year term, fully amortizing, prepayment allowed with no fee, on-bill repayment available
  - Unsecured, 640 FICO minimum, 50% back-end ratio, VOE (no back-end ratio limit for applicants with FICO above 680)
  - Interest rate based on measure and/or term ("Comprehensive Energy Efficiency Project Loan" vs. "All Other Projects")
  - **"Comprehensive"** requires HES/HPwES and at least two measures, at least one of which must be "Type 1" – **2.99%, 10-year term**
  - **"All Other Projects"** (CL&P customers only) financed at 4.49% (5 year term); 4.99% (7 year term); 5.99% (10 year term); or 6.99% (12 year term)
$1,000 to $3,000 “Energy Efficiency Payment Plan”,
- 0% interest, fully amortizing, up to three-year term (offered thru 6/30/14)
- “Type 1” measures only
HES Loan Application and Underwriting Process (cont.)

- **Important items to remember:**
  - HES assessment/HPwES needed for some loans (always recommended)
  - Measures must be eligible for financing (please call or email with any questions)
  - Measures can be bundled for lowest rate
  - Contractor not involved in financing but receives email updates on application status
    - Preapproval, approval, receipt of closing docs
  - Work should not be started until project/loan approved
HES Loan Closing and Payment Process

- Once approved for financing, CHIF will send customer closing documents to sign and return to CHIF
  - Commitment letter, Truth-in-Lending (TIL) disclosure, Note
  - Borrower also receives work completion certification form

- Simultaneously, contractor will be sent:
  - Notice of application status
  - Completion certification with lien waivers

- Inspection documents must be completed (if necessary)
  - QA/QC – will not hold up closing
HES Loan Closing and Payment Process (cont.)

- Work must be completed within **60 days** of closing
- Loan funding is conditional upon CHIF receiving signed completion certifications from customer and contractor with contractor lien waivers
  - CHIF will call customer to verify
- Funds are sent directly to the contractor
  - ACH (electronic deposit – preferred) or check
- Borrower’s first payment is due 30 days following the date the funds are disbursed
  - UI: On-bill financing
  - CL&P: Option of On-bill payment or paying through CHIF
### Eligible Improvements

<table>
<thead>
<tr>
<th>Type 1 Improvements</th>
<th>Type 2 Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Efficiency Insulation</td>
<td>ENERGY STAR® Central Air and Heat Pump Systems</td>
</tr>
<tr>
<td>ENERGY STAR® Ductless Heat Pumps</td>
<td>ENERGY STAR® Air to Air Heat Pump</td>
</tr>
<tr>
<td>ENERGY STAR® Electric Heat Pump Water Heaters</td>
<td>ENERGY STAR® Natural Gas Furnaces and Boilers</td>
</tr>
<tr>
<td>ENERGY STAR® Tankless Natural Gas Hot Water Heaters</td>
<td>Windows - ENERGY STAR® replacement windows (replacement of single pane windows only)</td>
</tr>
<tr>
<td>Indirect/Combination Water Heaters attached to an ENERGY STAR® boiler</td>
<td>Geothermal Systems</td>
</tr>
<tr>
<td>ENERGY STAR® Natural Gas Condensing Storage Hot Water Tank</td>
<td>Oil/Propane Heating Equipment</td>
</tr>
<tr>
<td></td>
<td>ENERGY STAR® Natural Gas Storage Hot Water Tank</td>
</tr>
</tbody>
</table>
Qualifying Measures – “Type 1”

- **High Efficiency Ceiling and Wall Insulation**
  - Ceilings that have less than R-30 insulation must install a minimum of R-19. Final R-value of the ceiling must be equal to or greater than R-38
  - Walls that have no insulation or an R-value of 4 or less must install a minimum of R-13 Insulation
  - Basement ceilings, below grade walls, or insulation installed within interior walls do not qualify (advanced air sealing can be rolled into loan if necessary to increase the efficiency of the underlying measure)

- **ENERGY STAR® Ductless Heat Pumps**
  - AHRI rated and meet or exceed: 14.5 SEER, 12 EER, 8.2 HSPF
  - Must meet the EnergizeCT Ductless Heat Pump rebate criteria.
Qualifying Measures – “Type 1” (cont.)

- **ENERGY STAR® Electric Heat Pump Water Heaters**
  - Energy Factor (EF) of 2.0 or greater
  - Replacement of an operating hot water heater

- **ENERGY STAR® Natural Gas Hot Water Heaters**
  - Tankless Natural Gas Water Heater .82 EF or greater with Electronic Ignition
  - High Efficiency Indirect Water Heater attached to a natural gas ENERGY STAR® qualified boiler (90% AFUE or greater)
  - High Efficiency Natural Gas Combo Space-Heating and Water Heating (90% AFUE or greater)
  - ENERGY STAR® Natural Gas Condensing Storage Tank – 95% Thermal Efficiency or greater
Qualifying Measures – “Type 2”

- **ENERGY STAR® Central Air System**
  - 14.5 SEER, 12 EER (split system); 14 SEER, 11 EER (single packaged system)
  - HVAC checklist required if part of a “Comprehensive EE Project Loan”

- **ENERGY STAR® Air to Air Heat Pump**
  - Must replace an operating heating system
  - 14.5 SEER, 12 EER, 8.2 HSPF for split system; 14 SEER, 11 EER, 8.0 HSPF for single packaged systems
  - HVAC checklist required if part of a “Comprehensive EE Project Loan”
ENERGY STAR® Natural Gas Furnaces and Boilers
- Furnace: AHRI rated 95% AFUE with Air Handler Performance Level EAE of 2% or lower
- Boiler: 90% AFUE or greater with temperature reset or purge

ENERGY STAR® Oil or Propane Furnaces and Boilers
- Oil Furnaces: 86% AFUE with Air Handler Performance EAE of 2% or lower
- Propane Furnaces: 95% AFUE with Air Handler Performance EAE of 2% or lower
- Oil Boilers: 86% AFUE with temperature reset or purge control
- Propane Boilers: 90% AFUE with temperature reset or purge control
Qualifying Measures – “Type 2” (cont.)

- **ENERGY STAR® Windows for Natural Gas or Electric Heat**
  - U-factor < or = .30 and replace single-pane (no storm) windows
  - Applies to existing window(s) that are part of the primary building envelope only

- **Geothermal Systems**
  - GLHP Closed Loop Water to Air 17.1 EER, 3.6 COP or
  - DX 16.0 EER, 3.6 COP or Water to Water 16.1 EER, 3.1 COP
  - A Geothermal Prequalification Application must be submitted/approved with the electric utility
  - HVAC checklist required

- **ENERGY STAR® Natural Gas Hot Water Heater**
  - ENERGY STAR® Natural Gas Storage Tank – 0.67 Energy Factor or greater
Thank you

Please check our website for updates

Connecticut Housing Investment Fund, Inc.
121 Tremont St.
Hartford, CT 06105
860-233-5165
www.chif.org
ajudd@chif.org
Agenda

- Introduction to CEFIA
- Introduction to Homeowner Financing Options
  - Smart-E Loan
  - Cozy Home Loan
- Working Capital Program
About CEFIA
Strategic Vision and Mission

Help ensure Connecticut’s energy security and community prosperity by realizing its environmental and economic opportunities through clean energy finance and investments.

Support the Governor’s and legislature’s energy strategy to achieve cleaner, cheaper and more reliable sources of energy while creating jobs and supporting local economic development.
About CEFIA
Strategic Goals

Attract and deploy capital to finance the clean energy goals for Connecticut

Help Connecticut become the most energy efficient state in the nation

Help scale-up the deployment of renewable energy in the state

Provide support for the infrastructure needed to lead the clean energy economy
About CEFIA
Strategic Goals (cont’d)

Develop and implement strategies that bring down the cost of clean energy in order to make it more accessible and affordable to consumers.

Reduce reliance on grants, rebates and other subsidies and move towards innovative low-cost financing of clean energy deployment.
CEFIA has developed financing options available to homeowners through program contractors to help make energy upgrades more affordable, including leasing and loan options with little to no out-of-pocket costs.

<table>
<thead>
<tr>
<th></th>
<th>CT Solar Lease</th>
<th>CT Solar Loan</th>
<th>Smart-E Loan</th>
<th>Cozy Home Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approx. Amount Available</strong></td>
<td>$50M</td>
<td>$5M</td>
<td>$28M</td>
<td>$2.5M</td>
</tr>
<tr>
<td><strong>Eligible Technologies</strong></td>
<td>Solar PV, Solar Hot Water</td>
<td>Solar PV</td>
<td>Efficiency, HVAC, All renewables (PV, SHW, Geothermal, Biomass, etc)</td>
<td>Efficiency, HVAC, All renewables (PV, SHW, Geothermal, Biomass, etc)</td>
</tr>
<tr>
<td><strong>Ownership</strong></td>
<td>No (option to purchase)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Down Payment?</strong></td>
<td>Not required if installed cost is less than $4.50/W</td>
<td>Minimum of 5% of net installed cost</td>
<td>Not required</td>
<td>Not required</td>
</tr>
<tr>
<td><strong>Interest Rate</strong></td>
<td>N/A (20 years)</td>
<td>6.49% (15 years)</td>
<td>4.49% (5-yr), 4.99% (7-yr), 5.99% (10-yr), 6.99% (12-yr)</td>
<td>5.99% (10 years)</td>
</tr>
</tbody>
</table>
Grow Your Business
With CEFIA Residential Financing Products

▪ Financing available for your customers
  – Loan and lease products
  – Low interest, no money down options
  – Most products have no dealer fees
  – Support HVAC, fuel conversions, energy efficiency, renewables and more
  – *Contractor progress payments!*

▪ Marketing support:
  – Web listing, logos, training, collateral, campaigns

▪ Find out more at [www.ctcleanenergy.com/contractors](http://www.ctcleanenergy.com/contractors)
Smart-E Loans

Introduction to Smart-E Loans
What are Smart-E Loans?

- Residential **loan** product for CT homeowners
- **Low-interest** financing with **flexible terms**
- **Easy** application through **local lenders**
- 40+ energy improvements
- $25k maximum
  - 20% of borrowed amount for related measure
Smart-E Loans Introduction
Quick, Easy, Affordable

- Unsecured personal loan below market rate
- No dealer fees

<table>
<thead>
<tr>
<th>Term</th>
<th>5-years</th>
<th>7-year</th>
<th>10-year</th>
<th>12-year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not-to-Exceed Rate</td>
<td>4.49%</td>
<td>4.99%</td>
<td>5.99%</td>
<td>6.99%</td>
</tr>
</tbody>
</table>

- No down payment required
- Flexible terms with fixed monthly payments
- No pre-payment penalty
Participating Lenders

www.energizect.com/smarte
Marketing the Smart-E Loan

- Series of 5 great videos!
  - General Smart-E
    (http://youtu.be/whte1PSdne0)
  - Make the Switch to Natural Gas
    (http://youtu.be/uoGTdsanURE)
  - HVAC
    (http://youtu.be/PH3hDVj8Zw8)
  - Go Solar
    (http://youtu.be/DZDPMo1Yo8s)
  - Comfort
    (http://youtu.be/JLFX7bg7It4)
Marketing Smart-E

- Print ad templates
- Retractable banners or posters
- Co-branded e-blasts
- Facebook posts
- Two–pagers featuring different technologies and stories
- Business cards with URLs and QR codes
Smart-E Marketing Promotion

▪ **Limited Time Introductory Offer to Smart-E!**

▪ In partnership with CEFIA, lenders are offering customers:

  – **No Interest** on Smart-E Loans for **Six Months**
  – Until **March 31, 2014**
Cozy Home Loans

Introduction to Cozy Home Loans
Cozy Home Loan Introduction

Who is HDF?

- Housing Development Fund
  - Nonprofit organization that finances the development of affordable housing in southwestern CT since 1989

Helped **8,400** families establish **good credit** and **manage down-payments**.

Enabled over **1,600** people to **buy** their **first home**.

Financed over **1,000** quality **rental units**.

Free counseling for homebuyers and distressed owners

Down payment and closing cost assistance

Lending to multifamily developers
Cozy Home Loan Introduction

What is Cozy Home?

- Residential **loan** product for CT homeowners in Litchfield, Fairfield, and New Haven Counties
- **Low-interest** financing
- CT residents with **low to moderate** incomes
- 40+ energy improvements
  - 10 year term, 5.99% interest rate
  - $3,000 up to $25,000 or
  - Up to $50,000 for multifamily homes (2-4 units)
- 25% of total borrowed can be put towards health and safety issues (asbestos, lead, mold remediation)
Cozy Home Loan Introduction

Income Limits

- Litchfield, Fairfield, and New Haven Counties
- 80% of Area Median Income (AMI)

**NEW HAVEN COUNTY**

<table>
<thead>
<tr>
<th>Family</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>$46,400</td>
<td>$52,933</td>
<td>$59,600</td>
<td>$66,133</td>
<td>$71,467</td>
<td>$76,800</td>
<td>$82,133</td>
<td>$87,333</td>
</tr>
</tbody>
</table>

- Milford-Ansonia-Seymour HMFA
  Ansonia, Beacon Falls, Derby, Milford, Oxford, Seymour

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<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>$51,200</td>
<td>$58,533</td>
<td>$65,867</td>
<td>$73,067</td>
<td>$78,933</td>
<td>$84,800</td>
<td>$90,667</td>
<td>$96,533</td>
</tr>
</tbody>
</table>

- Waterbury HMFA
  Middlebury, Naugatuck, Prospect, Southbury, Waterbury, Wolcott

<table>
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<tr>
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</tr>
</tbody>
</table>

- Easy application process through AFC First
Becoming Eligible

- Join me on Fridays at 9AM for an online training
- Email me at Madeline.Priest@ctcleanenergy.com
Working Capital for CEFIA-Eligible Contractors
Working Capital

- What is working capital?
  - Line of credit secured by ongoing cash flow / project finance / accounts receivable (e.g., your customers)

- CEFIA’s Working Capital program
  - Partnering with banks – Webster Bank is the first
  - Borrow up to 50% of residential project costs for CEFIA financed projects

- Interest rate = Webster Bank Prime Rate + 2%, floating (today = 5.25%)

- Webster Bank will confirm project with CEFIA
Application Requirements

- To apply, submit the following:
  1. Webster Bank Business Banking Application
  2. CEFIA financial product being used (Smart-E, CT Solar Lease, CT Solar Loan, Cozy Home loan) and CEFIA-approved contractor certificate
  3. Project address (if requesting funds with 1st application)
  4. Project amount (if requesting funds with 1st application)
  5. (Most recent business tax return*)
  6. (Most recent business balance sheet)

* Total project amounts >$50k will require 2 years of tax returns

Only for first working capital application
Getting Started

To learn more or discuss working capital for your business, contact Frank Mac Hugh, V.P. of Business Banking at:

Business: (860) 692-1607
Mobile: (860) 480-6433
Fmachugh@websterbank.com
CEFIA Contact

- **Madeline Priest**, Project Assistant, Residential Programs
  Ph: 860-257-2891
  madeline.priest@ctcleanenergy.com
Questions / Comments