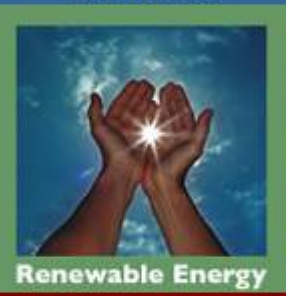

Energy Trust of Oregon

# Mapping the 2007 Residential Program

## CAC Meeting
## January 17, 2007

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# Home Energy Solutions

- **Single Family**
- **Large Multifamily *(5+ Units)***
- **Small Multifamily *(2-4 Units)***
- **Mobile Homes**

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# 2007 Program Strategy & Rationale

- Analyze residential program data for market potential and measure requirements
- Combine gas and electric incentives into a single category
- Tiered incentives – pay more for larger savings
- Align measure requirements with region
- Encourage more air & duct sealing with contractor spiffs
- Heat pump commissioning
- Add new measures – SF/MF tankless water heaters, MF lighting, and MF clothes washers
- Combine Energy Trust incentives with OR tax credit, and federal tax credit

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# SF Insulation Opportunities with HER Data

- Existing Conditions = Market Potential
- Large savings opportunities for insulation

| *R-value* | ***0*** | ***1 - 10*** | *11 - 18* | *19 +* | *Market potential percentage* |
|---|---|---|---|---|---|
| ***Ceiling*** | **260** | **336** | 855 | 1951 | *42.7%* |
| *R-value* | ***0*** | *1 - 11* | *12 - 15* | *16 +* | *Market potential percentage* |
| ***Floor*** | **1565** | 74 | 41 | 760 | *67.2%* |
| *R-value* | ***0*** | ***1 - 3*** | *4 - 11* | *12 +* | *Market potential percentage* |
| ***Wall*** | **1255** | **34** | 1371 | 604 | *39.5%* |
| *R-value* | ***0*** | ***1 - 4*** | *5 - 8* | *9 +* | *Market potential percentage* |
| ***Ducts*** | **739** | **553** | 492 | 220 | *64.5%* |

# Weatherization Incentive Groups

- Shell Insulation - attic, floor, wall
- Windows
- Duct and Boiler Pipe Insulation
- Air Sealing
- Duct Sealing

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# HVAC Incentive Groups

- Gas Equipment
- Electric Equipment
- Domestic Hot Water
- Heat Pump commissioning
- Bonuses and Spiffs

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# Single Family Weatherization

## 2006 Program

- **Insulation – Ceiling, Wall, or Floor**
  - Up to $250 per insulation type (gas)
  - Up to $300 per insulation type (electric)
- **Window Retrofit**
  - $1.25 per square foot / = < U-Value 0.32
  - $2.00 per square foot / = <U-Value 0.31
- **Duct Insulation**
  - Up to $100 (gas)
  - Up to $200 (electric)
- **Duct Sealing**
  - Up to $250 (gas)
  - Up to $300 (electric)
- **Air Sealing**
  - Up to $250 (gas)
  - Up to $300 (electric)

## 2007 Program

- **Insulation – Ceiling, Wall, or Floor**
  - Up to $200
  - Up to $300
- **Windows**
  - $2.25 per square foot
  - Min. retrofit U-Value 0.30
- **Duct Insulation**
  - Up to $100
- **Air Sealing**
  - Up to $300 per building
  - $50 contractor spiff
- **Duct Sealing**
  - Up to $300 per building
  - $25 duct leakage test
  - $50 contractor spiff

*Same incentive regardless of fuel type*

*Manufactured Home (permanently sited) insulation incentive same as single family site built*

*Note: All incentives except windows are 50% of cost, up to the $ amount shown.*

**Direct Comparison**

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# Single Family Weatherization

## 2007 Program

- **Insulation – Ceiling**
  - 50% of cost, Up to $200 Incentive; pre level = < R-19
  - 50% of cost, Up to $300 Incentive; pre level = < R-11
- **Insulation – Wall**
  - 50% of Cost, Up to $300 Incentive; pre level = < R-4
- **Insulation – Floor**
  - 50% of cost, Up to $200 Incentive; pre level = < R-11
  - 50% of cost, Up to $300 Incentive; pre level = R-0

*Shell insulation incentives based on pre-existing R-levels*

**Insulation Detail**

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# Single Family HVAC - Gas

## 2006 Program

- **Gas Furnace**
  - $150 for =>90% AFUE
- **Boiler**
  - $200 for =>90%+ AFUE
- **Water Heater**
  - $25 for EF .62 or higher

## 2007 Program

- **Gas Furnace**
  - $150 for 90%-94% AFUE
  - $175 for = >95% AFUE
- **Boiler**
  - $200 for => 88% AFUE
- **Water Heater**
  - $25 for EF .62 or better
  - $200 for Tankless WH – EF .80 or higher

## Unchanged Incentives

- **DV Unit Heater**
  - $100 for =>80% AFUE
- **Gas Furnace**
  - $150 for =>90% AFUE

*Manufactured Home (permanently sited) HVAC incentive same as single family site built*

**Direct Comparison**

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# Single Family HVAC - Electric

## 2006 Program

- **Heat Pump (upgrade)**
  - $200 for HSPF 8.2 SEER 14 EER 11.5
- **Heat Pump (replacing electric furnace)**
  - $400 for HSPF 8.2 SEER 14 EER 11.5
- **Water Heater**
  - $25 for EF .85 -.93 (depends on tank size)

## 2007 Program

- **Heat Pump (upgrade)**
  - $150 for HSPF 8.2 SEER 14 EER 11.5
    - $250 when commissioned
  - $200 for Heat Pump HSPF 8.5 EER 12
    - $300 when commissioned
- **Heat Pump (replacing electric furnace)**
  - $300 for HSPF 8.2 SEER 14 EER 11.5
    - $400 when commissioned
  - $400 for Heat Pump HSPF 8.5 EER 12
    - $500 when commissioned

## Proposed Changes

- No Electric Water Heater Incentive
- $100 incentive for commissioning new heat pump
- $200 for Heat Pump HSPF 8.5 EER 12 (upgrade)
- $300 for Heat Pump HSPF 8.5 EER 12 (replacing electric furnace)

*Manufactured Home (permanently sited) HVAC incentive same as single family site built*

**Direct Comparison**

EnergyTrust of Oregon, Inc.

# Large Multifamily Weatherization - Electric

## 2006 Program

**Insulation – Attic**
- $.25 per square foot; pre level = < R-19

- **Insulation – Wall**
  - $.30 per square foot; pre level = <R - 0
- **Insulation – Floor**
  - $.45 per square foot; pre level = < R-11
- **Exterior Doors**
  - $30 per door; pre level = < R-2, R-5 retrofit

**Windows**

*Retrofit Requirement: Single Glazing*
- $2.50 per square foot / = < U-Value - 0.35
- $3.00 per square foot / = < U-Value - 0.32
- *Retrofit Requirement: Double Glazing*
- $1.75 per square foot / = <U-Value 0.35
- $2.25 per square foot / = < U-Value 0.32

## 2007 Program

- **Insulation – Attic**
  - $.20 per square foot; pre level = < R-18
  - $.25 per square foot; pre level = < R-11
- **Insulation – Wall**
  - Same as 2006
- **Insulation – Floor**
  - $.45 per square foot; pre level = < R-11
- **Exterior Doors**
  - $25 per door; pre level = < R-2, R-5 retrofit
- **Windows**
  - *Retrofit Requirement: Single Glazing*
  - $2.50 per square foot / = < U-Value - 0.32
  - $3.00 per square foot / = < U-Value - 0.30
  - *Retrofit Requirement: Double Glazing*
  - $1.60 per square foot / = < U-Value - 0.32

## Unchanged Incentives

- **Insulation – Wall**
  - $.30 per square foot; pre level = <R - 0
- **Insulation – Floor**
  - $.45 per square foot; pre level = < R-11

**Direct Comparison**

EnergyTrust of Oregon, Inc.

# Large Multifamily Weatherization - Gas

## 2006 Program

- **Insulation – Attic**
  - $.25 per square foot; pre level = < R-19
- **Insulation – Wall**
  - $.30 per square foot; pre level = R-0
- **Insulation – Floor**
  - $.45 per square foot; pre level = < R-11
- **Exterior Doors**
  - $25 per door; pre level = < R-2, R-5 retrofit
- **Window Retrofit**
  - $1.75 per square foot / = < U-Value 0.35
  - $2.25 per square foot / = < U-Value 0.32)

## 2007 Program

- **Insulation – Attic**
  - $.20 per square foot; pre level = < R-18
  - $.25 per square foot; pre level = < R-11
- **Insulation – Wall**
  - Same as 2006
- **Insulation – Floor**
  - $.45 per square foot; pre level = < R-11
- **Exterior Doors**
  - $25 per door; pre level = < R-2, R-5 retrofit
- **Windows Retrofit**
  - *Single or Double Glazing*
  - $1.75 per square foot / = < U-Value - 0.32
  - $2.25 per square foot / = < U-Value - 0.30

## Unchanged Incentives

**Insulation – Wall**

- $.30 per square foot; pre level = R-0

- **Insulation – Floor**
  - $.45 per square foot; pre level = < R-11

**Direct Comparison**

EnergyTrust of Oregon, Inc.

# Large Multifamily HVAC

## 2006 Program

- **Heat Pump (upgrade)**
  - $200 for HSPF 8.1 SEER 13 EER 11
- **Heat Pump (replacing electric furnace)**
  - $400 for HSPF 8.1 SEER 13 EER 11
  - Custom incentives available

  **Gas Furnaces**
  - $150 for =>90% AFUE
  - Custom incentives available
- **Boiler Pipe Insulation**
  - $.50 per linear foot / R-8 commercial grade insulation only
- **Boiler Tune Up and Vent Damper**
  - $150 per boiler / automatic vent damper

## 2007 Program

- **Heat Pumps**
  - $150 for HSPF 8.2 SEER 14 EER 11.5
  - $200 for Heat Pump HSPF 8.5 EER 12
  - Custom incentives available
- **Heat Pump (replacing electric furnace)**
  - $300 for HSPF 8.2 SEER 14 EER 11.5
  - $400 for Heat Pump HSPF 8.5 EER 12
  - Custom incentives available
- **Gas Furnaces**
  - $150 for 90%-94% AFUE
  - Custom incentives available
- **Boiler Pipe Insulation**
  - Same as 2006
- **Water Heater**
  - $25 / min EF .62 (gas)
  - $25 / min EF .85 / .91 / .93 (electric)
  - Replacing 1995 or older unit
  - $200 for Tankless Gas WH – EF .80 or higher

## Unchanged Incentives

- **Gas Furnaces**
  - $150 for => 90% AFUE

**Direct Comparison**

EnergyTrust of Oregon, Inc.

# Large Multifamily Lighting and Clothes Washers

## 2007 Program

**Commercial Clothes Washer - Electric DHW**
- $225 per washer
- Front Loading- MEF 2.0 or higher

- **Commercial Clothes Washer - Gas DHW**
  - $180 per washer
  - Front Loading- MEF 2.0 or higher

**In Unit Clothes Washer - Electric DHW**
- $100 per washer
- Front Loading- MEF 2.0 or higher

- **High Efficiency Common Area Lighting**
  - Custom Incentive

**Proposed 2007 Modifications**

# Small Multifamily (2-4 Units)

## 2006 Program

- **Insulation – Ceiling, Wall, or Floor**
  - $.20 per square foot
  - Up to $400 per insulation type, per building.
- **Windows**
  - $2.00 per square foot / = < U-Value 0.31
  - $1.25 per square foot / = < U-Value 0.32
- **Air Sealing**
  - Up to $300 per electrically heated building
  - Up to $250 per gas heated building
- **Duct Sealing**
  - Up to $300 per electrically heated building
  - Up to $250 per gas heated building

## 2007 Program

- **Insulation – Ceiling or Floor**
  - $.25 / square foot, up to $400
  - $.20 / square foot, up to $300
- **Insulation – Wall**
  - $.20 per square foot, up to $400
- **Windows**
  - $2.25 per square foot / = < U-Value 0.30
- **Air Sealing**
  - Up to $300 per building
- **Duct Sealing**
  - Up to $300 per building

*Incentive based on pre-existing insulation levels*

*Same incentive regardless of fuel*

## Unchanged Incentives

- **Duct Insulation**
  - Up to $100 per unit or per HVAC system.
- **Windows**
  - Max incentive $7,500 per building.


- **Duct Insulation**
  - Up to $100 per unit or per HVAC system.
- **Windows**
  - Max incentive $7,500 per building.


**Direct Comparison**

EnergyTrust of Oregon, Inc.

# Small Multifamily (2-4 Units)

## 2007 Program

- **Insulation – Ceiling or Floor**
  - –$.25 / square foot, up to $400; pre level = < R-11
  - –$.20 / square foot, up to $300; pre level = < R-19
- **Windows**
  - –$2.25 per square foot / = < U-Value 0.30
- **Air Sealing**
  - –Up to $300 per building
- **Duct Sealing**
  - –Up to $300 per building

**Proposed 2007 Modifications**



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# Small Multifamily (2-4 Units)

## 2007 Program

- **Duct Insulation**
  - Up to $100 per unit or per HVAC system
- **Windows**
  - Max. incentive $7,500 per building
- **Multi-Measure Bonus**
  - Up to $50 per building for 3 or more measures installed in each unit
- **HVAC Incentives**
  - Single family homes program rules apply

**Unchanged Elements**

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# Mobile Homes

## 2006 Program

- **Insulation – Floor**
  - Up to $250 per insulation type (gas)
  - Up to $300 per insulation type (electric)
- **Duct Sealing**
  - Free to customer (see below)
- **Air Sealing**
  - Free to customer (see below)

## 2007 Program

- **Insulation – Floor**
  - 50% of cost, Up to $200 Incentive; pre level = < R-19
  - 50% of cost, Up to $300 Incentive; pre level = < R-11
- **Water Heater**
  - $25 for EF .62 or better
  - $200 for Tankless WH – EF .80 or higher

## Unchanged Incentives

- **Duct Sealing and Air Sealing**
  - Free to customer
  - $50 to contractor for duct leakage test
  - Up to $300 to contractor for each sealing measure.
  - Min 50 CFM leakage reduction per measure.
  - CFLs - Up to 5 free
- **HVAC – Gas and Electric**
  - Gas Furnace – $150 for =>90% AFUE
  - Heat Pump – $200 for HSPF 8.2 SEER 14 EER 11.5

**Direct Comparison**

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# Bonuses and Spiffs

## 2006 Program

- **SF Multiple Measure Bonus**
  - $50 for 2 measures
  - $100 for 3 measures
- **Small Multifamily Multiple Measure Bonus**
  - $50 per building
  - 3 measures per unit, in all units

## 2007 Program

- **SF Multiple Measure Bonus**
  - $100 for 3 measures
- **Contractor Spiffs**
  - $50 for Duct Sealing
  - $50 for Air Sealing

## Unchanged Bonuses

–Duct Leakage Test and Water Heater not eligible for any bonus

–Small Multifamily Multiple Measure Bonus is $50 per building

–3 measures per unit, in all units

**Direct Comparison**

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