TRADE ALLY TRAINING

PUD Insulation Installer & Sales Training

October 7, 2014
Training Agenda

- Introduction
- Program Overview
- Paperwork
- Quality Control
- Specifications
- PUD Resources and Contacts
Program Overview
Why PUD invests in Energy Efficiency

- State law mandates targets
- PUD Goal – 1st resource of choice
- Helps customers lower their bills

Energy Efficiency
Residential Sector Efficiency Potential

- Electric Homes, 51%
- Natural Gas Homes, 38%
- Other Fuel Homes, 11%
Annual Residential Potential by End Use

- Cooling
- Envelope New
- Appliances
- Consumer Electronics
- Water Heat
- Envelope Retro
- HP / DHP
- Lighting

MWh

- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
Program Overview
2013 - Completed Projects

- Glass: 459 projects
- Ceilings: 187 projects
- Floor: 202 projects
- Walls: 44 projects
- Ducts: 559 projects
- HP-Air: 401 projects
- HP-Geo: 5 projects
- DHP: 578 projects
Your Role

- **Influence and educate customers** about energy efficiency, PUD programs and their benefits

- **Bid jobs:**
  - Use PUD bid forms
  - Review customer owned balances
  - Explain *when insulation is required*

- **Install measures** as authorized and according to specifications

- Handle **customer service** and maintenance issues
Understanding Eligibility

- Must have an active PUD account
  - (Snohomish County or Camano Island)
- Permanently Installed Electric Heat in Existing Structures
- Weatherization Work may be Required
- Obtain Jurisdictional Required Permits
- No work in non-living areas of the home, even if heated
- Not a remodel program
# Single Family Incentives

<table>
<thead>
<tr>
<th>Eligible Measure</th>
<th>Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attic, Floor, and Wall Insulation</td>
<td>$0.50 per SQ FT</td>
</tr>
<tr>
<td>Duct Sealing &amp; Insulation</td>
<td>$5.00 Per Lineal Foot up to $450</td>
</tr>
<tr>
<td>Duct Sealing &amp; Insulation Manufactured homes</td>
<td>$200 Single wide MH $400 Double wide MH</td>
</tr>
</tbody>
</table>

*Note: Programs and incentives subject to change. Always check [www.snopud.com/weatherization](http://www.snopud.com/weatherization) for current offerings.*
Multi-Family Program Requirements
On hold accepting applications for 2015

- 3 or more attached units up to 3 stories
- Must be electrically heated (covers common areas & units)
- Specific Multi-Family application
- Individual bids required for each building
## Multi-Family Incentives

On hold accepting applications for 2015

<table>
<thead>
<tr>
<th>Measure</th>
<th>Maximum Incentive/Rebate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attic Insulation</td>
<td>$.65 / sq ft</td>
</tr>
<tr>
<td>Wall Insulation</td>
<td>$.50 / sq ft</td>
</tr>
<tr>
<td>Floor Insulation</td>
<td>$.75 / sq ft</td>
</tr>
</tbody>
</table>

*Note: Programs and incentives subject to change. Always check [www.snopud.com/weatherization](http://www.snopud.com/weatherization) for current offerings.*
Paperwork
www.snopud.com/weatherization

For Homeowners

- Program guidelines
- Incentive amounts
- Financing links
- Testimonials, podcasts, educational materials
- Easy access to necessary forms
How to Participate

Forms & Process Info for Homeowners
- Participation Application & Agreement
- DHP Rebate Application
- Links to Contractor Lists
Submitting Complete Application

- Signed & Dated
  - Customer Bid Sheets
  - Sign and date second page
- Should be submitted by homeowner
- INCLUDE ALL DOCUMENTS TO PREVENT DELAYS

INCLUDE ALL DOCUMENTS TO PREVENT DELAYS

LEARN ~ CONNECT ~ SAVE
Uniform Bid Sheets

- Bids are good for a **minimum** of 60 days
- Bid sheets are available:
  - Online
  - Editable PDF’s
- Contractor & customer must sign/date bid sheet
  - When submitting electronically **DON’T FORGET** to check electronic submittal box
Submitting Paperwork

✈️ **Email**
✈️ [CE@snopud.com](mailto:CE@snopud.com)
   • **BE SURE TO CHECK ELECTRONIC SIGNATURE BOX**

✈️ **Fax**
✈️ 425-267-6762

✈️ **Mail**
✈️ Community Energy MS E2 PO Box 1107 Everett WA 98206

✈️ **When submitting via email or fax **DO NOT MAIL.**
Only submit via one method to avoid duplicate efforts.**
Application Status

**FIRST** check with your customer to see if they submitted their application with your bid.

Then, to check if an application has been received and/or authorized:

- **Jay Snyder**
  - 425-783-1721
  - jasnyder@snopud.com

- **Aaron Stewart**
  - 425-783-1726
  - apstewart@snopud.com

- **Ed Walstad**
  - 425-783-8158
  - edwalstad@snopud.com

For applications that have been assigned to an inspector contact the designated inspector:

- CE@SnoPUD.com
The Energy Services Authorization (ESA) is your approval to start work
The Energy Services Authorization

- When work is complete, remember to **sign and date** the Contractor box.
- Then return signed ESA form to the PUD at CE@snopud.com
Quality Control
Warranty Requirements

- 2-year minimum all inclusive labor and materials required (101.040)
- Leave warranty information with homeowner
# Inspection Schedule

<table>
<thead>
<tr>
<th>Eligible Measure</th>
<th>Inspection Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attic Insulation</td>
<td>Bid Verification, In-Progress &amp; Post</td>
</tr>
<tr>
<td>Floor Insulation</td>
<td>Bid Verification, In-Progress* &amp; Post</td>
</tr>
<tr>
<td>Wall Insulation</td>
<td>Bid Verification, In-Progress &amp; Post</td>
</tr>
<tr>
<td>Duct Sealing &amp; Insulation</td>
<td>Bid Verification, In-Progress &amp; Post</td>
</tr>
<tr>
<td>Windows</td>
<td>Bid Verification &amp; Post</td>
</tr>
</tbody>
</table>

*when applicable
# Inspections: MD’s & Remedials

## Minor Deficiencies
- Not paid until fixed
- Not Health/Safety related
- Limited work needed

## Remedials
- Health & Safety related
- Excessive amount of MD’s

Must be completed within 30 days.
Penalty: Suspension
Performance Monitoring

Requirements

- **Pass Rate**: 80% over past 6 months
- **Jobs**: Complete within 3 months (or request Extension)
- **Minors/ Remedials**: Complete within 30 days
- **Insurance & License Renewals**: Submit before expiry
- **Written Complaints**: Not to exceed 1 in any 12 month period

*See Residential Installer Monitoring, Suspension & Delisting Procedures for full details.*
Performance Monitoring

**Automatic 30-day Suspension**
- Job not completed within 3 months (without filing for extension)
- Minor/remedial not completed within 30 days
- Insurance/License expiry

**During Suspension**
- New bids will not be accepted
- ESA’s will not be issued
- Name will be removed from customer-facing lists

*See Residential Installer Monitoring, Suspension & Delisting Procedures for full details.*
Performance Monitoring

**Delisting**
- Multiple Suspensions
- Extended sub-80% pass rate
- Less than 4 jobs in past 12 months
- 2 written customer complaints in past 12 months
- Program violations or unlawful activities

**After Delisting**
- Two to five years before reinstatement

*See Residential Installer Monitoring, Suspension & Delisting Procedures for full details.*
Insulation Specifications
Insulation Removal

- Cost of removal of non-functional insulation shall not be included as part of the job cost
  - Except in the case of duct sealing

- Insulation that is removed before inspector assesses its condition will not be eligible for the PUD program.

- District field staff has sole discretion in determining functionality of existing insulation
Attention to Detail
Attic Insulation

R0/R19 to R49/38
Existing Batt in Attic (1/3\textsuperscript{rd} Rule)
Attic Insulation

Recessed Light Rules {IC & NON IC} (101.250, .260)
Attic Insulation

Sealing Penetrations

(101.253)
Attic Insulation

- Metal Flues (101.275)
- Masonry Chimneys (101.277)
Attic Insulation

- Sealing Ceiling Ducts  
  (101.280)

- Water Pipe Insulation  
  (101.312)
Attic Insulation

Knob & Tube Wiring (101.285)
Attic Insulation

Attic Access
(101.295, .300, .305, .310)
Attic Insulation

- Exhaust Fans {Bath} (101.271, .272, .315)
- Kitchen Exhaust (101.320)
- Dryer Exhaust (101.325)
Types of Vents
Roof/Gable

Venting \{1/300, 1/150\}
(101.335, .340)
Gable Vents

Old and/or damaged vent would need to be re-screened
Types of Venting

ROUND

RECTANGLE
Gable Vents
RESTRICTED AIR FLOW
Soffit Vents
Soffit Vents
Perforated Soffit Vent
Blocked Eave Vents
## Venting Calculations

To determine the net free ventilating area of a vent, divide the gross ventilating area by the area factor below.

<table>
<thead>
<tr>
<th>Covering</th>
<th>Area Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>¾ inch hardware cloth</td>
<td>1.0</td>
</tr>
<tr>
<td>Woodram louvers</td>
<td>2.0</td>
</tr>
<tr>
<td>#6 mesh screen</td>
<td>2.25</td>
</tr>
<tr>
<td>Woodram louvers</td>
<td>2.0</td>
</tr>
<tr>
<td>Rain louver only</td>
<td>2.0</td>
</tr>
</tbody>
</table>

### Continuous Soffit Vent (per linear foot)

<table>
<thead>
<tr>
<th>Size (mesh)</th>
<th>Area Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2” 1/8” mesh</td>
<td>.08</td>
</tr>
<tr>
<td>3” 1/8” mesh</td>
<td>.13</td>
</tr>
<tr>
<td>4” 1/8” mesh</td>
<td>.17</td>
</tr>
</tbody>
</table>

### Continuous Ridge Vent

8 linear feet = 1 square foot

### Manufactured Eave Vents

<table>
<thead>
<tr>
<th>Size (in.)</th>
<th>Area Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>24” x 5” x 5”</td>
<td>.37</td>
</tr>
<tr>
<td>16” x 5” x 5”</td>
<td>.23</td>
</tr>
</tbody>
</table>

### Gable Vents with louvers

<table>
<thead>
<tr>
<th>Size (in.)</th>
<th>Area Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>8” x 8”</td>
<td>.20</td>
</tr>
<tr>
<td>8” x 12”</td>
<td>.30</td>
</tr>
<tr>
<td>12” x 12”</td>
<td>.44</td>
</tr>
</tbody>
</table>

### Roof Jacts (8 mesh)

<table>
<thead>
<tr>
<th>Type</th>
<th>Area Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF-41</td>
<td>.22</td>
</tr>
<tr>
<td>AF-50</td>
<td>.28</td>
</tr>
</tbody>
</table>

### Full Screen Crawlspace Vents

<table>
<thead>
<tr>
<th>Size (in.)</th>
<th>Area Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>16” x 8”</td>
<td>.65</td>
</tr>
</tbody>
</table>

### Plastic Pre-made Floor Vents

<table>
<thead>
<tr>
<th>Size (in.)</th>
<th>Area Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>16” x 6”</td>
<td>.42</td>
</tr>
</tbody>
</table>
Attic Insulation

Baffling (101.345, .350)

- No face stapling
- No bending on bottom
- Bottom edge over top plate
- Extend above final depth
- Keep vent clear of insulation
Attic Insulation

Coverage Chart & Bag (101.385, .390)

Knob and Tube Survey Report

Home Owner: ____________________________ Audit #: __________

Service Address: ____________________________________________

City, State, Zip: ____________________________ PAO/CLA #: __________

1. Condition of conductor(s) adequate? Yes ☐ No ☐ If no, explain required corrections: __________

2. Any improper connections? Yes ☐ No ☐ If yes, explain required corrections: __________

3. Circuits presently overloaded? Yes ☐ No ☐ If yes, explain required corrections: __________

All Circuits in areas to be insulated must be protected with the appropriate size breakers or S-type fuses. Identify below the panel location of circuits in the area(s) to be weatherized, the method used, the amperage, and wire size:

<table>
<thead>
<tr>
<th>Circuit #</th>
<th>Breaker or S-Type Fuse?</th>
<th>Amps.</th>
<th>Wire Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Areas Approved For Insulating (Initials ONLY. Check marks are unacceptable)

Walls _______ Ceilings _______ Floors _______ All Areas _______

Licensed electrical contracting firm: ______________________________________________________

Firm’s Address: ____________________________ Phone: ____________________________

License #: ____________________________ Bonding Co.: ____________________________

Learn ~ Connect ~ Save
Under Floor Insulation

- R0/11 to R30 or fill cavity (101.500, .510)
- Decay/Water Leaks (101.515, .520)
- Venting 1/150 Wet, 1/300 Dry (101.525, .527)
- 6 Mil Black Ground Cover (101.530)
- Unheated Basement (101.535)
# Under Floor Insulation

<table>
<thead>
<tr>
<th>EXISTING INSULATION</th>
<th>MAXIMUM</th>
<th>MINIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0 (due to need for complete removal)</td>
<td>Insulate to maximum feasible R-value (Fill the joist cavity)</td>
<td>R11</td>
</tr>
<tr>
<td>R0 to R11</td>
<td>Insulate to maximum feasible R-value (Fill the joist cavity)</td>
<td>R19</td>
</tr>
<tr>
<td>R11 to R19</td>
<td>Insulate to maximum feasible R-value (Fill the joist cavity)</td>
<td>R30</td>
</tr>
</tbody>
</table>
Under Floor Insulation

Floor Support (101.550, .551 & Matrix)
Improper Floor Support
# Floor Support Matrix

<table>
<thead>
<tr>
<th>FLOOR SUPPORT MATRIX</th>
<th>FLOOR TYPE</th>
<th>SUPPORT MATERIAL</th>
<th>MATERIAL REQUIREMENT</th>
<th>MAXIMUM SPACING</th>
<th>ACCEPTABLE PATTERN</th>
<th>MINIMUM FASTENER TYPE</th>
<th>MINIMUM FASTENER DEPTH INTO JOIST/BEAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JOISTS UP TO 32&quot;</td>
<td>LATH</td>
<td>1/4&quot; X 1.5&quot;</td>
<td>20&quot; O.C.</td>
<td>Across floor joists</td>
<td>Corrosion resistant nail/staple 1/4&quot; crown 18 AWG</td>
<td>5/8&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWINE</td>
<td>150 lbs. polyester, polypropylene, or nylon</td>
<td>12&quot; O.C.</td>
<td>Shoelace/ Zig Zag</td>
<td>Corrosion resistant staple 3/8&quot; crown 18 AWG</td>
<td>5/8&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WIRE</td>
<td>Corrosion Resistant 20 AWG. Wire</td>
<td>18&quot; O.C.</td>
<td>Shoelace/ Zig Zag</td>
<td>Corrosion resistant staple 3/8&quot; crown 18 AWG</td>
<td>5/8&quot;</td>
</tr>
<tr>
<td>POST &amp; BEAM OVER 32&quot;</td>
<td>LATH</td>
<td>3/8&quot; X 1.5&quot;</td>
<td>20&quot; O.C.</td>
<td>Across floor beams up to 48&quot;, over 48&quot; needs center support</td>
<td>Corrosion resistant staple 3/8&quot; crown 18 AWG</td>
<td>5/8&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWINE</td>
<td>150 lbs. polyester, polypropylene, or nylon</td>
<td>12&quot; O.C.</td>
<td>Shoelace with center support</td>
<td>Corrosion resistant staple 3/8&quot; crown 18 AWG</td>
<td>5/8&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WIRE</td>
<td>Corrosion Resistant 20 AWG. Wire</td>
<td>18&quot; O.C.</td>
<td>Shoelace with center support</td>
<td>Corrosion resistant staple 3/8&quot; crown 18 AWG</td>
<td>5/8&quot;</td>
<td></td>
</tr>
</tbody>
</table>
Routine Human Contact
Under Floor Insulation

- Clothes Dryer Exhaust (101.540)
  - Over 6’ rigid hard metal pipe
- Kitchen Range Exhaust (101.543)
Exterior Crawlspace Access Doors

Crawlspace Access Doors (101.560, .565, .570)

BAD

GOOD
Interior Access Door
Floor Venting
Crawl Access Vent
Floor Venting
Floor Vents
Floor Venting

Incomplete Below Grade Venting
Floor Venting
COMPLETE BELOW GRADE VENTING
Floor Venting
COMPLETE BELOW GRADE VENTING
Floor Venting

COMPLETE BELOW GRADE VENTING
Floor Venting
Under Floor Insulation

- Water Pipe Insulation (101.575)
- Enclosed Floor Insulation (101.595)
- Floors & Human Contact (101.597, .598)
Unfinished Walls

- R-11 minimum (101.815)
- Support and/or cover (101.830)
Waterpipes/Heaters/Chimneys
Walls- Blown In

- Siding Type {Wood, Shake, Vinyl/Aluminum} (101.915)
- Two Holes per Cavity (101.930, .940)
- Cavities with Existing Insulation (101.935)
- Space Heater/Water Pipe Cavities (101.943, .944)
- Knob & Tube Wiring (101.945)
Walls- Blown In

- Plug & Spackle (101.950)
- No drilling through shake
Blown Walls
Walls- Blown In

✦ Coverage Chart (101.970)
  ✦ One copy must be left with the homeowner and another copy shall be sent to UTILITY with request for final inspection. *(Knob & Tube Report if Applicable)*
  ✦ Coverage Chart must contain the following information:
    • Address of Residence
    • Date of Installation
    • Name & Address of Installing Contractor
    • Bag count, R-Value & Type of Insulation Installed
    • Area (sq.ft.) of walls insulated
HVAC Ducts

- R-8 Minimum Requirement (101.990)
- Duct Sealing (101.994)
HVAC Ducts
CROSS OVER DUCT
HVAC Ducts

- Repairing Ducts (101.995)
- Ducts in Human Contact (101.1000)
- Duct Support {twine/strapping} (101.1005, .1140)
  - Flex Supported every 4’ with 1 ½” strap
- R-4 Flex Ducts {replace} (101.1010)
  - Final Minimum R-Value R-8
PUD Resources & Contact Information
www.snopud.com/TradeAllies

>>Information for Weatherization & Heating contractors

- Bookmark or save to your “favorites”
- Get the latest program documents & reference materials here:
  - Logo guidelines
  - Bid Forms
  - Contractor Agreement
  - Monitoring Procedures
  - Financing Options
  - This PPT
  - Training PPTs
  - Orientation PPT
  - Newsletters
  - Bulletins
Conservation {take action & save}:

Trade Allies: Weatherization & Heating

Thank you for your interest in becoming a PUD Registered Contractor. Information about our conservation programs and the forms you need to complete to become a PUD Registered Contractor are available here. To get started, you must complete, initial each page, sign, and return the Energy Efficiency Contractor Agreement (see documents below). Contractors submitting a completed Energy Efficiency Contractor Agreement will automatically be placed on our contact list for the next orientation meeting. Orientations are held twice a year in the spring and fall.

For more information, please click on the link below for "New Weatherization/Heat Pump Contractors."

Weatherization & Heating Documents

- New Weatherization/Heat Pump Contractors
- Energy Conservation Participation Application & Agreement* (2180)
- Energy Efficiency Contractor Agreement
- Installer Performance Monitoring
- Balance Point & Heat Loss Forms
- Heat Pump Start Up Checklist* (2037)
- Heat Pump Bid Form* (2192)
- Installation Bid Form* (2197)
- Window Installation Bid Form* (2166)
- W-9 IRS Form
- Weatherization Specifications

Related Documents

- PUD Logo Guidelines for Trade Allies
- Trade Ally Newsletter February 2014
- Trade Ally Newsletter Issue 2, August 2013
- Trade Ally Newsletter Issue 1, July 2013

Weatherization & Heating

- Bulletin Update - 6/7/15
- Program changes effective 6/1/15
- New Trade Ally Orientation October 2013
- Heat Pump Installer & Sales Training October 2013
- Insulation Installer & Sales Training October 2013
- Window Installer & Sales Training October 2013

Program Details

- View details of this program
- View financing options for customers

Jump To...
Marketing Support

What you can do

- Use the Registered Contractor logo
- Leverage program promotions & tools
  - Online, Bill Inserts, Advertising, Website, Events
  - EnergyAdvisor online audit, calculators
- Regularly check your online directory listing
  - description, contact info
- Make sure we have the right contact info for you
  - “Generic” email recommended
Registered Contractor Logo

- All use must be **pre-approved**
- Logo must be **unaltered**
- [www.snopud.com/tradeallies](http://www.snopud.com/tradeallies) for specifications & guidelines
- For use on print materials and website
- **Cannot be used in context of**

  “We are the...
  - #1 PUD Installer
  - best PUD Installer
  - most experienced PUD installer...”

Cathy Anderson
425-783-1798
cjanderson@snopud.com
Contact Info

Program Managers

- Kevin Watier 425-783-1714 kjwatier@snopud.com
- Cathy Anderson 425-783-1798 cjanderson@snopud.com

Inspectors

- Jay Snyder 425-783-1721 cell 425-239-1053 jasnyder@snopud.com
- Aaron Stewart 425-783-1726 cell 425-315-6185 apstewart@snopud.com
- Ed Walstad 425-783-8158 cell 425-231-2797 edwalstad@snopud.com
Contact Info

👩‍💼 PRIMARY Email
    CE@snopud.com

👩‍💼 Office Support Staff
    - Carolyn Beebe
    - Kim Wilcox
    - Andrea Duffy

👩‍💼 Fax
    425-267-6762

📞 Energy Hotline  425-783-1700
    Hotline Specialist Mordecai Cooke

-debug-

👩‍💼 Mailing Address:
    Residential Programs
    PO BOX 1107 MS E2
    Everett, WA 98206-1107
Thank You...

for helping PUD customers...