Balancing Market Share & Market Transformation in Times of Change

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Residential New Construction Program Manager

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Agenda

1. Background on Vermont building environment
2. Market changes and impacts on program design
3. Outreach and marketing efforts
4. Rebuilding after Tropical Storm Irene
5. Program results and plans moving forward
6. Lessons learned
Efficiency Vermont

- Established in 2000 as the country’s first statewide Energy Efficiency Utility

- Operated through non-profit Vermont Energy Investment Corporation under appointment from the State of Vermont

- Funded through an Energy Efficiency Charge on all electric bills (approx. 1 cent/kWh)

- In 2011, efficiency led, in part, to a 2% decrease in the state’s overall annual electrical demand
Vermont ENERGY STAR® Homes

Statewide Reach

• Provide technical assistance, certification, and incentives throughout Vermont

• Partnership in Vermont Gas Systems territory

• Burlington Electric operates separately but in cooperation
Vermont ENERGY STAR Homes

- Project Enrolled
- Energy Consultant Assigned
- Tech Assistance; 2 Site Visits; Energy Rating
- Savings Claimed
- Customer Incentives
  - ENERGY STAR label
  - Home Energy Rating Cert
  - Energy Code Compliance Cert
  - Up to $1700 cash incentives
  - EPACT tax credit verification (if renewed)
Vermont Building Market

- Approximately 1,000 one to four unit building permits issued annually
- Very few large developments
- Most homes outside Vermont Gas territory heat with propane/oil boilers and wood
- Approximately 25% of participating homes have AC, but percentage is increasing
2011: New Code + New ENERGY STAR

How do we prepare the residential construction market for higher standards in both Energy Code and ENERGY STAR?

- **Stakeholder engagement:**
  - Market strategy team, key partners, builder focus groups & market research

- **What we heard:**
  - Program value lies equally across technical assistance, 3rd party energy rating, and ENERGY STAR label
  - Continue providing service free of charge – adjust incentives if necessary
  - Positive reception to a “Two Tier” approach
2011: New Code + New ENERGY STAR

Two-tier approach to “above code”:

• BASE TIER:   Energy Code Plus
• HIGHER TIER:  Vermont ENERGY STAR Homes
Program Goals

1. Promote cost-effective energy efficiency measures that result in homes that are affordable to operate, comfortable to live in, and durable over time

2. Train builders on new Code and ENERGY STAR V.3 to position them for program success

3. Work with enrollees to consider options for deeper savings during the planning stages of new projects

4. Transform the market by working with building professionals to create highly efficient new housing stock with a lower average HERS index

5. Collaborate with building and real estate partners to advance education and outreach efforts

6. Increase market share
Base Tier: Energy Code Plus

Minimum Requirements

1. Meet VT-Residential Building Energy Standards (VT-RBES = Energy Code) via HERS Compliance Path (HERS 75)

2. Achieve Energy Code prescriptive insulation levels installed to Grade II standard

3. Meet ventilation and combustion safety requirements

4. Pass Pre-Drywall Inspection (all sections of Thermal Enclosure Checklist but Section 4: Reduced Thermal Bridging)
Base Tier: Energy Code Plus

Minimum Requirements

5. Air leakage: \(<4 \text{ ACH}50\) (air changes/hour at 50 pascals)

6. All heating and cooling ducts must be located within thermal boundary of the home

7. ENERGY STAR or equivalent heating & cooling system (if installed)

8. All major installed appliances must be ENERGY STAR

9. ENERGY STAR lighting in 50% of fixtures
Higher Tier: Vermont ENERGY STAR Homes

Minimum Requirements

Meet or exceed all Energy Code Plus requirements, plus:

- Meet all ENERGY STAR V.3 requirements including:
  - Earns a Home Energy Rating (HERS) that meets or exceeds the ENERGY STAR HERS Target Index
  - Meet all ENERGY STAR checklist requirements

- Air leakage: \(\leq 3\) ACH50 (air changes/hour at 50 pascals);

- ENERGY STAR lighting in 80% of fixtures
## Customer Incentives

<table>
<thead>
<tr>
<th>Energy Code Plus</th>
<th>Energy rating and technical assistance</th>
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<tbody>
<tr>
<td></td>
<td>Home Energy Rating Certificate</td>
</tr>
<tr>
<td></td>
<td>Energy Code compliance documentation</td>
</tr>
<tr>
<td></td>
<td>EPACT Tax Credit documentation</td>
</tr>
<tr>
<td></td>
<td>When applicable (not currently available)</td>
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<tr>
<td>$200 Higher Tier Appliance Bonus</td>
<td>For installation of at least two CEE Tier 2/3 appliances</td>
</tr>
<tr>
<td>LED and Pool Pump Incentives</td>
<td>Via existing Efficient Products program</td>
</tr>
<tr>
<td>$200 Wastewater Heat Recovery</td>
<td>Vermont Gas territory only</td>
</tr>
<tr>
<td>$500 HRV/ERV incentive, $300</td>
<td>Washington Electric Coop territory only</td>
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<tr>
<td>Participation Incentive</td>
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<table>
<thead>
<tr>
<th>Vermont ENERGY STAR Homes</th>
<th>All of Energy Code Plus, and…</th>
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<tbody>
<tr>
<td></td>
<td>ENERGY STAR label</td>
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<tr>
<td></td>
<td>HERS Index incentive, up to $1,500</td>
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<td></td>
<td>($75 per point below 60 for homes &lt; 3,000 sq ft; below 55 for homes &gt; 3,000 sq ft.)</td>
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Outreach and Marketing Efforts

• Sponsored seven ENERGY STAR V. 3 Trainings plus presentations at Home Builders & Remodelers Association events

• Program Updates through Efficiency Vermont “Builder News” newsletter and other area building publications
Outreach and Marketing Efforts

ACCA QA Overview Sessions

Utilize ENERGY STAR logo for homes entering HBRA “Better Homes Awards” event
Outreach and Marketing Efforts

Educating appraisers and realtors through Vermont Green Home Alliance
Tropical Storm Irene Rebuild

Photo credit: Rutland Herald
Tropical Storm Irene Rebuild

Rt 4, Killington, VT

Photo credit: Burlington Free Press
Tropical Storm Irene Rebuild

Flooded home in Waterbury, VT

Photo credit: Burlington Free Press
Tropical Storm Irene Rebuild
Key Program Statistics

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<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
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<tbody>
<tr>
<td>Number of Builder Partners</td>
<td>277</td>
<td>319</td>
<td>355</td>
<td>371</td>
</tr>
<tr>
<td>% ENERGY STAR Market Share</td>
<td>32</td>
<td>36</td>
<td>29</td>
<td>31</td>
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<tr>
<td>Avg. HERS Index</td>
<td>60</td>
<td>58</td>
<td>58</td>
<td>56</td>
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Trends in 2012

- Many homes with ducted systems tending to go Energy Code Plus (this may change with increase in credentialed HVAC Contractors)

- Enrollments
  - ENERGY STAR 78%
  - Code Plus 22%

- Avg. HERS Index through March: 53
Moving Forward

• Under the Plan, Do, Check, Act philosophy—surveying energy raters, builders, and new homeowners about current program structure

• VT State Energy Plan calling for net zero energy residential new construction by 2030

• Looking into “Low Load Home” tier at or near Passive House level of efficiency
  First Habitat for Humanity Passive House
  Charlotte, VT

• Engage community energy committees on how to promote above code construction in their towns
Lessons Learned

• Builder buy-in is critical in program design

• Design programs such that switching between tiers is achievable

• Find the balance point for pushing market transformation while maintaining market share and savings potential

• Trainings for builders and energy raters are key to program success

• Builders can make a great sales team for your program
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