Green goes mainstream! Does the evidence support it?

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Washington, DC

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ACEEE Finance Forum
Green Goes Mainstream for New Homes
Overview

- Market Indicators: New Construction
- Market Indicators: Remodeling Activity
- Surveys: Consumer Preference for Efficient Features
Market Indicators: Energy Efficient New Construction
Energy Star becomes a standard feature in new homes

- 21% of new homes ENERGY STAR certified in 2012
- 101,004 ENERGY STAR certified homes built in 2012
- 1.4 Million ENERGY STAR certified homes built to date

(Source: EPA)
75% of builders adopt green construction techniques

Energy Efficiency **Booming** as Construction Market Recovers
Market Indicators: Energy Efficient Home Improvement
Energy Efficient remodeling growing rapidly

65% of Remodelers Involved in “Green” Projects

Consumer spending on systems upgrades and maintenance (e.g. HVAC, windows) increased 6% during the 2007-2011 downturn, jumping to a 40% share.

### Total Homeowner Improvement Projects: 2011

<table>
<thead>
<tr>
<th>Project</th>
<th>(000s)</th>
<th>% Projects</th>
<th>% Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC</td>
<td>3,665</td>
<td>17%</td>
<td>3%</td>
</tr>
<tr>
<td>Water heater</td>
<td>3,489</td>
<td>16%</td>
<td>3%</td>
</tr>
<tr>
<td>Windows or doors</td>
<td>4,335</td>
<td>20%</td>
<td>4%</td>
</tr>
<tr>
<td>Insulation</td>
<td>2,032</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21,341</td>
<td>100%</td>
<td>19%</td>
</tr>
<tr>
<td>U.S. Households</td>
<td>114,761</td>
<td>--</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Number of projects do not add to total because respondents may report projects in more than one category.**
Survey Research: What Homebuyers Really Want
Energy efficiency tops “most wanted” features list on 2013 NAHB Survey

- 3 of 11 “most wanted” features dealt with energy efficiency
- 89% would rather buy an energy-efficient home than one without those features that costs 2-3% less.
- Buyers want to know about projected energy costs:

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefer to purchase from a builder who provides energy rating</td>
<td>34%</td>
<td>37%</td>
</tr>
<tr>
<td>Projected utility costs would influence purchase</td>
<td>34%</td>
<td>39%</td>
</tr>
<tr>
<td>Knowing the projected utility costs is very important</td>
<td>40%</td>
<td>37%</td>
</tr>
</tbody>
</table>

Builders, Remodelers Say Customers will pay 3-5% premium

Additional Amount Customers Are Willing to Pay for Green (According to Firms Doing New Construction)


Additional Amount Customers Are Willing to Pay for Green (According to Firms Doing Remodeling)


Green credentials carry weight with consumers

If you were to buy a new house today, would it matter to you that it had a **GREEN RATING, CREDENTIAL, OR DESIGNATION** (such as LEED or National Green Building Standard rating)?

- **YES**: 79.8%
- **NO**: 20.2%

Source: Green Builder® Media (2013) Consumer Green Preferences Survey
The Value Proposition of Green

If you were selling your house, do you think highlighting the ENERGY-EFFICIENCY features of your house would help it sell faster?

- NO: 15%
- YES: 85%

Source: Green Builder® Media (2013) Consumer Green Preferences Survey
If you were given **$5,000 TO IMPROVE YOUR HOME** any way you wanted, how would you spend it?

*(Rank your top three choices. Put in order of importance with 1 being the most important.)*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update the kitchen</td>
<td>52.4%</td>
<td>19.0%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Update a bathroom</td>
<td>35.4%</td>
<td>36.6%</td>
<td>28.0%</td>
</tr>
<tr>
<td>Insulate or air seal the house to reduce energy bills</td>
<td>37.9%</td>
<td>33.2%</td>
<td>28.9%</td>
</tr>
<tr>
<td>Add hardscaping (new deck, pavers, patio, etc.)</td>
<td>26.9%</td>
<td>28.6%</td>
<td>44.5%</td>
</tr>
<tr>
<td>Apply toward a solar array to offset utility costs</td>
<td>32.0%</td>
<td>42.6%</td>
<td>25.4%</td>
</tr>
<tr>
<td>Install a solar thermal system for water heating</td>
<td>23.8%</td>
<td>40.3%</td>
<td>35.9%</td>
</tr>
<tr>
<td>Install a backup generator for power outages</td>
<td>30.3%</td>
<td>33.7%</td>
<td>36.0%</td>
</tr>
<tr>
<td>Add a rainwater catchment system to reduce reliance on public water</td>
<td>24.1%</td>
<td>40.0%</td>
<td>35.9%</td>
</tr>
<tr>
<td>Upgrade old windows or doors to reduce energy bills</td>
<td>37.5%</td>
<td>28.8%</td>
<td>33.7%</td>
</tr>
<tr>
<td>Apply toward a new roof</td>
<td>33.1%</td>
<td>30.7%</td>
<td>36.2%</td>
</tr>
<tr>
<td>Apply toward a new HVAC to reduce energy bills</td>
<td>27.2%</td>
<td>31.6%</td>
<td>41.3%</td>
</tr>
</tbody>
</table>

Source: Green Builder® Media (2013) Consumer Green Preferences Survey
Financial Performance of Energy Efficient Homes
The Value of Green labels in the California Housing Market

Green labeled homes sell at higher prices. A green label adds an average 9% price premium to sale price against other comparable homes.

A study of price premiums for Energy Star Homes

- Sample: 300 ENERGY STAR and 150 conventional homes in Ft Collins, CO
- Single family, detached in new subdivisions (built 1999-2005)
- Control for home size, location, and property qualities
- ENERGY STAR homes originally sold for $8.66 more per square foot than non-ENERGY STAR homes.

A study of price premiums for Dual-pane Windows

- Sample: 3,704 single-family residential sale transactions from 2008–2010 in Clovis, California (San Joaquin Valley)
- Control for home size, location, and property qualities
- Dual-pane windows contribute **2.99% to overall property value**
- With each increasing year of property age, the presence of dual-pane windows increases the sales price by 0.21%.

Home Energy Efficiency and Mortgage Risks

- Is residential energy efficiency associated with lower mortgage default and prepayment risk?

- National sample of 71,000 mortgage loans
  - 29,994 Energy Star
  - 46,118 Control Group

- 32% lower default risk on ENERGY STAR homes, controlling for other loan determinants. The more efficient the house, the lower the default risk.
Default rates were very low, ranging from 0–3%.

Table A4: Risk Management Approaches of Surveyed Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Basis for Application Approval</th>
<th>Secured or Unsecured?</th>
<th>Project Approval Tied to Energy Savings?</th>
<th>Application Approval Rate</th>
<th>Default Rate</th>
<th>Number of Loans Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMUD</td>
<td>Credit rating, good standing with utility, debt to income ratio</td>
<td>Both</td>
<td>No</td>
<td>65–70%</td>
<td>0.04–4%</td>
<td>44,000 (Oct 1990–Mar 2011)</td>
</tr>
<tr>
<td>SoCal Home</td>
<td>Credit rating, debt to income (Fannie Mae guidelines)</td>
<td>Unsecured</td>
<td>No</td>
<td>65–70%</td>
<td>NA</td>
<td>20,600 (1995–2011)</td>
</tr>
<tr>
<td>Sempra</td>
<td>Active utility account and &gt;2 years in good standing</td>
<td>Unsecured</td>
<td>No—but the length of the loan term is</td>
<td>NA</td>
<td>0.5%</td>
<td>186 (2006–Mar 2011)</td>
</tr>
<tr>
<td>CT Home</td>
<td>Credit rating</td>
<td>Unsecured</td>
<td>No</td>
<td>61%</td>
<td>NA</td>
<td>1,117 (2009–Mar 2011)</td>
</tr>
<tr>
<td>CL&amp;P CI</td>
<td>Credit rating and at least 3 years in business</td>
<td>Secured</td>
<td>NA</td>
<td>43%</td>
<td>NA</td>
<td>6 (2010)</td>
</tr>
<tr>
<td>CT SB</td>
<td>Utility bill must be in good standing for at least 6 months</td>
<td>Unsecured</td>
<td>NA</td>
<td>96%</td>
<td>&lt;1%</td>
<td>9,400 (2010); 3,000 approximate avg 1,000/year (2003–2011)</td>
</tr>
</tbody>
</table>
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