Working Group on Building Energy Disclosure

Ajith Rao & Riley Allen

September 19, 2011
Scale of the Challenge

Vermont Fuel Bills for Residential and Commercial Buildings, 1997-2010 *

* Does not include natural gas; uses projections for 3rd quarter of 2010 for gross receipts tax numbers

Sources: EIA, VT Tax Department
Act 92 Goals
(Vermont Energy Efficiency and Affordability Act)

• To substantially improve the energy fitness of at least 20% of the state’s housing stock by 2017, and 25% of the state’s housing stock by 2020;
• To reduce annual fuel needs and fuel bills by an average of 25% in the housing units served;
• To reduce fossil fuel consumption across all buildings by an additional one-half percent each year, leading to a total reduction of 6% annually by 2017 and 10% annually by 2025;
• To save families and businesses a total of $1.5 billion on fuel bills over the lifetimes of the improvements installed between 2008 and 2017;
• To increase weatherization services to low-income Vermonters by expanding the number of units weatherized, or the scope of services provided, or both, as revenue becomes available in the weatherization assistance trust fund.

Source: 10 VSA § 581
Required Levels of Activity to meet Act 92 Goals
Core Recommendations from the “Affordable Heat” Report

• Develop effective outreach initiatives for driving demand for home energy retrofits by leveraging entities with direct relationships to the customers, including **town energy committees** and **fuel dealers**;

• Initiate a **time-of-sale efficiency review and disclosure** for residential and commercial buildings, coupled with technical and financial assistance for efficiency upgrades;

• Steadily increase the number of units served by the low-income **Weatherization Assistance Program** by approximately 7.5% every year to improve efficiency, fuel costs, and life safety in existing low-income housing;
Core Recommendations from the “Affordable Heat” Report

• Continue to focus on multi-family housing units through the Vermont Fuel Efficiency Partnership program;

• Continue efforts on the market-based service of outreach, financial and technical assistance for other existing housing and commercial buildings on a “whole-buildings” basis, through the State’s efficiency contractor, Efficiency Vermont, and through Vermont Gas Systems and Burlington Electric Department;
Core Recommendations from the “Affordable Heat” Report

• Establish an easy-to-access loan program for high-quality upgrades by home and building owners, with capital provided by a **consortium of banks and private lenders**, possibly supported by the state agencies with lending expertise in the buildings sector; and

• Establish responsibility for a statewide entity such as the **Department of Public Service** to coordinate whole-building efficiency services programs among diverse providers and to meet state goals.
Proposed “Seamless Path”
Required Increases in Retrofit Activity

Proposed increases in level of activity required to meet Act 92 goals

Existing residential programs need to grow to over 6000 units by 2020; low-income weatherization needs to increase to serving over 2,800 units in 2020
Projected Benefit-Cost Ratio

Projected benefit-cost ratios from proposed levels of activity

State Energy Efficiency Services:
Total Benefits and Total Costs, 2011-2028

The recommended services will return $2.26 for every public and private dollar invested in the first decade alone ($1.55 as calculated on a net present value basis)
Funding Sources Required

Comprehensive Efficiency Services*
Investment Shares
Ten-Year Totals, 2011-2020

(Figures in millions)
Private Capital: $461.7
Existing Weatherization: $94.4
Other Existing Funds: $87.9
New Funding Sources: $63.3

*Note: Excludes Natural Gas Programs

Energy solutions
for a changing world
Major Conclusions

• ARRA funds have built up significant capacity, which needs to be sustained and built upon;

• Updating of building codes, requirement for a compliance plan, and the introduction of new Energy Star rating will significantly contribute towards making new construction more efficient;

• Low-income weatherization will require a sustained funding stream;

• Other enabling mechanisms such as outreach initiatives, time-of-sale review and disclosure, etc. will be critical in leveraging market-based retrofits.
## Current US Rating and Policy Disclosure Summary

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Benchmarking (Building Type and Size)</th>
<th>Disclosure</th>
<th>To transactional counterparties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-residential</td>
<td>Multi-family</td>
<td>On public web site</td>
</tr>
<tr>
<td>Austin</td>
<td>10k SF+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>California*</td>
<td>1k SF+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>50k SF+</td>
<td>50k SF+</td>
<td>✓</td>
</tr>
<tr>
<td>New York City</td>
<td>50k SF+</td>
<td>50k SF+</td>
<td>✓</td>
</tr>
<tr>
<td>San Francisco</td>
<td>10k SF+</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Seattle</td>
<td>10k SF+</td>
<td>5+ units</td>
<td>-</td>
</tr>
<tr>
<td>Washington</td>
<td>10k SF+</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Requirements subject to change by the California Energy Commission

**Source:** Institute for Market Transformation, 2011
Job Impacts of Energy Efficiency Investments in Modeled in New England

Table ES2. Summary of New England Economic Impacts

<table>
<thead>
<tr>
<th></th>
<th>Electric</th>
<th>Natural Gas</th>
<th>Unregulated Fuels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Efficiency Program Costs ($Billions)</td>
<td>16.8</td>
<td>4.1</td>
<td>6.3</td>
</tr>
<tr>
<td>Increase in GSP ($Billions)</td>
<td>99.4</td>
<td>30.6</td>
<td>53.1</td>
</tr>
<tr>
<td>Maximum annual GSP Increase ($Billions)</td>
<td>5.6</td>
<td>1.8</td>
<td>2.9</td>
</tr>
<tr>
<td>Percent of GSP Increase Resulting from Efficiency Spending</td>
<td>12%</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Percent of GSP Increase Resulting from Energy Savings</td>
<td>88%</td>
<td>89%</td>
<td>91%</td>
</tr>
<tr>
<td>Dollars of GSP Increase per $1 of Program Spending</td>
<td>5.9</td>
<td>7.4</td>
<td>8.5</td>
</tr>
<tr>
<td>Increase in Employment (Job Years)</td>
<td>767,011</td>
<td>207,924</td>
<td>417,061</td>
</tr>
<tr>
<td>Maximum annual Employment Increase (Jobs)</td>
<td>43,193</td>
<td>12,907</td>
<td>24,036</td>
</tr>
<tr>
<td>Percent of Employment Increase from Efficiency Spending</td>
<td>16%</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td>Percent of Employment Increase from Energy Savings</td>
<td>84%</td>
<td>85%</td>
<td>88%</td>
</tr>
<tr>
<td>Job-Years per $Million of Program Spending</td>
<td>46</td>
<td>50</td>
<td>66</td>
</tr>
</tbody>
</table>

1 2008 is the dollar year basis for all figures unless otherwise indicated.

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raponline.org

Riley Allen rallen@raponline.org
Ajith Rao arao@raponline.org