Overarching Principles for the EESE Finance Committee to Consider

Dick Henry
Executive Director
The Jordan Institute
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Agenda – Possible Areas for Consideration

• The Problem
• Priorities
• Metrics
• Funding
• Integration
• Education
• Conclusion
The Problem

New Hampshire Heats with:
66% Oil
21% Natural Gas
87% Fossil Fuel


2005 NH Non-Transportation Energy Use % by Sector & Fuel Type

- Commercial: 34%
  - Electric: 63%
  - Oil: 24%
  - Natural Gas: 13%
  - Renewables: 1%

- Industrial: 23%
  - Electric: 44%
  - Oil: 30%
  - Natural Gas: 13%
  - Renewables: 13%

- Residential: 43%
  - Electric: 50%
  - Oil: 39%
  - Natural Gas: 8%
  - Renewables: 3%
Priorities

• Secure All Cost Effective Conservation, Energy Efficiency, and Renewables.
  – Can’t buy long term energy contracts but you can do DSM & some renewables @ set price

• Do Conservation and Energy Efficiency First
  – Then provide funds for Renewables

• Prioritize Projects by GHG Reductions CO2e,
Priorities - continued

• Use Public Dollars to leverage Private Dollars
• Increase Skill base of Work Force commensurate with jobs and their availability
• Address Distribution Constraints as part of EE make this legal in New Hampshire
Metrics

• Use Home Energy Rating System (HERS) for residential

• Develop Commercial equivalent CERS?

• Create priority implementation lists for each building type
  – Counter vendor hype

• Need more aggressive goal than Energy Star,
  – 2030 Challenge
  – Passive House
  – Affordable Comfort Institute 1,000 home goal
Metrics - continued

• Create Clear Performance Objectives that are measurable
  – To participate you must agree to allow continued measurement of Installed Measures

• Third party measurement before and after
  – Peer review, blower door, infrared, HERS

• Highlight both successes and failures

• Metric screens should identify
  – Carbon reductions, Cost savings, and Jobs
Metrics – continued

• Define “Cost Effective” based on:
  – Annual Energy Inflator
  – Greenhouse Gas reduction (cost of CO2e/ton)
  – Job Creation

• List Cost effective measures by sector – C,I,R
  – Conservation
  – Energy Efficiency
  – Renewables

• Create ubiquitous Fuel Comparison Calculators with Cost, Carbon, and Jobs
### Sample Calculator

This shows Energy Prices as of March 9, 2009

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Fuel Unit</th>
<th>Fuel Unit Cost</th>
<th>Efficiency of Heating Unit</th>
<th>Price per Million BTU</th>
<th>Units</th>
<th>Btus per Unit</th>
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</thead>
<tbody>
<tr>
<td>Fuel Oil (No.2)*</td>
<td>$</td>
<td>2.18</td>
<td>Gallon</td>
<td>80%</td>
<td>Btu/gal</td>
<td>138,800</td>
</tr>
<tr>
<td>Natural Gas* 1st Tier</td>
<td>$</td>
<td>1.40</td>
<td>Therm</td>
<td>95%</td>
<td>Btu/gal</td>
<td>103,000</td>
</tr>
<tr>
<td>Natural Gas* 2nd Tier</td>
<td>$</td>
<td>1.27</td>
<td>Therm</td>
<td>95%</td>
<td>Btu/gal</td>
<td>103,000</td>
</tr>
<tr>
<td>Propane*</td>
<td>$</td>
<td>2.75</td>
<td>Gallon</td>
<td>95%</td>
<td>Btu/gal</td>
<td>91,200</td>
</tr>
<tr>
<td>Electricity*</td>
<td>$</td>
<td>0.16</td>
<td>kWh</td>
<td>99%</td>
<td>Btu/Kwh</td>
<td>3,413</td>
</tr>
<tr>
<td>Wood Pellets</td>
<td>$225.00</td>
<td></td>
<td>Ton</td>
<td>90%</td>
<td>Btu/ton</td>
<td>16,000,000</td>
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<tr>
<td>Wood Chips</td>
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<td>59.00</td>
<td>Ton</td>
<td>80%</td>
<td>Btu/ton</td>
<td>8,528,000</td>
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<tr>
<td>Kerosene*</td>
<td>$</td>
<td>2.87</td>
<td>Gallon</td>
<td>80%</td>
<td>Btu/ton</td>
<td>135,000</td>
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<tr>
<td>Geothermal</td>
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<td>0.16</td>
<td>kWh</td>
<td>250%</td>
<td>Btu/Kwh</td>
<td>3,413</td>
</tr>
</tbody>
</table>
Funding

• Sliding scale of support commensurate with degree of savings
• Line up Jobs & Money to create more private demand beyond just public funding i.e. move on to middle class homes
• Harness Equity Markets and remove Barriers
  – Use Public Dollars to Buy down risk for “conventional bank” loans
• Reward Integration
Integration

• Avoid Duplication of Programs, Talent, and Money

• Do not penalize Utilities
  – Need to be partners in integration

• Protect Vendors from failure of “right sized” elements – through bonding.
  – Keep it small
Education

• Create ubiquitous Fuel Comparison Calculators with Cost, Carbon, and Jobs

• Eliminate the “priesthood” of vendors
  – Windows & Controls are not the only answer nor are they the first answer.

• Develop Training Vertically – reach
  – Architects
  – Engineers
  – Builders
  – Developers
  – Owners etc.
Conclusion - Develop Screens

• These ideas once we settle on them can be developed into Screens for each Sector and for each building type.

• These screens can be periodically updated as we learn from experience.