Bridging the Rural Efficiency Gap

Expanding Access to Energy Efficiency in Remote and High Energy Cost Communities

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Maine Governor’s Energy Office

• The mission of the Maine Governor's Energy Office (GEO) is to create effective public and private partnerships that advance Maine's energy security, economic development, and environmental health.

• Responsible for planning and coordinating state energy policy and serves as the primary energy policy advisor to the Governor.
The Rural Efficiency Gap

“You can't get theya from heeya!”
Rural and Remote: Some Statistics

• One in every five Americans lives in a rural area¹
• Maine has the largest percentage (61%) of its population living in rural areas than any other state in the country²
• Maine has the longest coastline of any state, with many remote peninsulas
• There are also 15 Maine islands with year-round communities only accessible by boat or plane
  • Year-round populations range from 50 – 1,200

• Energy is expensive, due to small customer base, local ownership, logistical delivery challenges
  • Electric rates up to $0.70/kWh (on the islands)
  • Heating oil can be more than a dollar more per gallon on the islands
  • Limited number of fuel options (non-utility) and lack of competition in rural communities

¹² – U.S. Census, American Community Survey
Island Institute

Community development organization working to sustain Maine's island and coastal communities, and exchange ideas and experiences to further the sustainability of communities in Maine and elsewhere.
About the Project

Bridging the Rural Efficiency Gap is connecting rural communities in heating oil-dependent states like Maine, Alaska, New Hampshire, and Vermont with financial assistance for home energy efficiency.

http://www.islandinstitute.org/bridging-rural-efficiency-gap

Project Leads:

Project Partners:

New Hampshire Office of Strategic Initiatives

VITAL COMMUNITIES

Efficiency MAINE

U.S. DEPARTMENT OF ENERGY

Efficiency Vermont

Maine Office of the Public Advocate

REAP

Renewable Energy Alaska Project
## Shared Challenges

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<thead>
<tr>
<th></th>
<th>Alaska</th>
<th>Maine</th>
<th>New Hampshire</th>
<th>Vermont</th>
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<tbody>
<tr>
<td>Percent Population in Rural Areas (rank)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>33.9% (14&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>61.3% (1&lt;sup&gt;st&lt;/sup&gt;)</td>
<td>39.7% (11&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>61.1% (2&lt;sup&gt;nd&lt;/sup&gt;)</td>
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<tr>
<td>Heating Oil Consumption Per Capita (rank)&lt;sup&gt;2&lt;/sup&gt;</td>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
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<tr>
<td>Percent of Homes Built Before 1940 (rank)&lt;sup&gt;3&lt;/sup&gt;</td>
<td>1% (51&lt;sup&gt;st&lt;/sup&gt;)</td>
<td>23% (8&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>21% (12&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>24% (7&lt;sup&gt;th&lt;/sup&gt;)</td>
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<tr>
<td>Energy Expenditures Per Capita (rank)&lt;sup&gt;4&lt;/sup&gt;</td>
<td>$7,487 (1&lt;sup&gt;st&lt;/sup&gt;)</td>
<td>$4,565 (5&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>$3,934 (19&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>$4,273 (9&lt;sup&gt;th&lt;/sup&gt;)</td>
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<tr>
<td>Average Energy Burden&lt;sup&gt;5&lt;/sup&gt;</td>
<td>5%</td>
<td>6%</td>
<td>5%</td>
<td>5%</td>
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Rural Housing Stock: Age

Figure 4. Percent rural residents by county (left) vs. median year built of housing (right) in Maine, New Hampshire, and Vermont

Source: Census Bureau (2010) Census and American Community Survey (2012-2016)
Rural Housing Stock: Mobile Homes

Figure 5. Relationship between percent of mobile homes and percent of rural population in Maine, New Hampshire, and Vermont counties

Source: Census Bureau, American Community Survey (2016)
Assessing the Rural Efficiency Gap
Methodology

- Interviews with 50+ stakeholders (AK, ME, NH, VT, and other rural states)
  - Administrators, implementers, customers

- Analysis of Census & EIA data, DOE’s LEAD tool

- Analysis of energy efficiency program participation data
Program Participation Impacts

Figure 6. Percent rural population (left) vs. Efficiency Maine participating households per housing unit by county (right)

Sources: Efficiency Maine Home Energy Savings Program and Affordable Heat Initiative Participating Households for Fiscal Years 2016 and 2017; Census Bureau (2010)
Barriers to EE in Rural Communities

• Geographic
  • Geographic isolation & dispersed population
  • Lack of energy efficiency contractors

• Financial
  • Upfront cost
  • Lower incomes, higher energy burdens
  • Credit access and debt aversion

• Awareness & Access
  • Lack of access to traditional marketing channels
  • Lack of awareness or skepticism of existing resources
Geographic Barriers

A barge unloads an insulation truck on Monhegan Island, Maine. Photo credit: Portland Press Herald
Financial Barriers: Lower incomes, higher energy burden

Source: U.S. Census

PERCENT OF MEDIAN HOUSEHOLD INCOME THAT GOES TO HOME HEATING AND ELECTRICITY

- 3% U.S.
- 8.8% Maine
- 16-18% Unbridged Islands

Source: Island Institute’s 2017 Waypoints
Figure 12. Energy Burden vs. Percent Rural Population by County in Alaska, Maine, New Hampshire, and Vermont  
Source: DOE Low-Income Energy Affordability Data (LEAD) Tool (2015)
Awareness & Access Barriers
Models & Strategies for Bridging the Gap
Bridging Model Highlights

• Program design – staged upgrades (ME), DIY rebate (VT), rural-specific program (AK)
• Implementation models – Community-scale energy efficiency initiatives Energy Wise(AK), Weatherization Weeks (ME), Weatherize campaigns (NH, VT)
• Policies – Geographic equity mandate (VT)
Maine Case Studies

• Weatherization Weeks
  • Flexible program design
  • Aggregated demand and collective purchasing
  • Community partnerships
  • Travel and lodging support for workforce

• Maine Climate Table
  • Convening stakeholders to share information and resources
  • Cross-sector collaboration

Project Resources

• White paper
• Video series
• Toolkit for Implementers
• What Works Solutions Library entry

http://www.islandinstitute.org/bridging-rural-efficiency-gap
Next Steps

• Continued dissemination
• New research and collaborations
• Applying the findings
  • State of Maine Comprehensive Energy Plan

https://aceee.org/topics/rural-and-small-town-communities
Contact Us

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