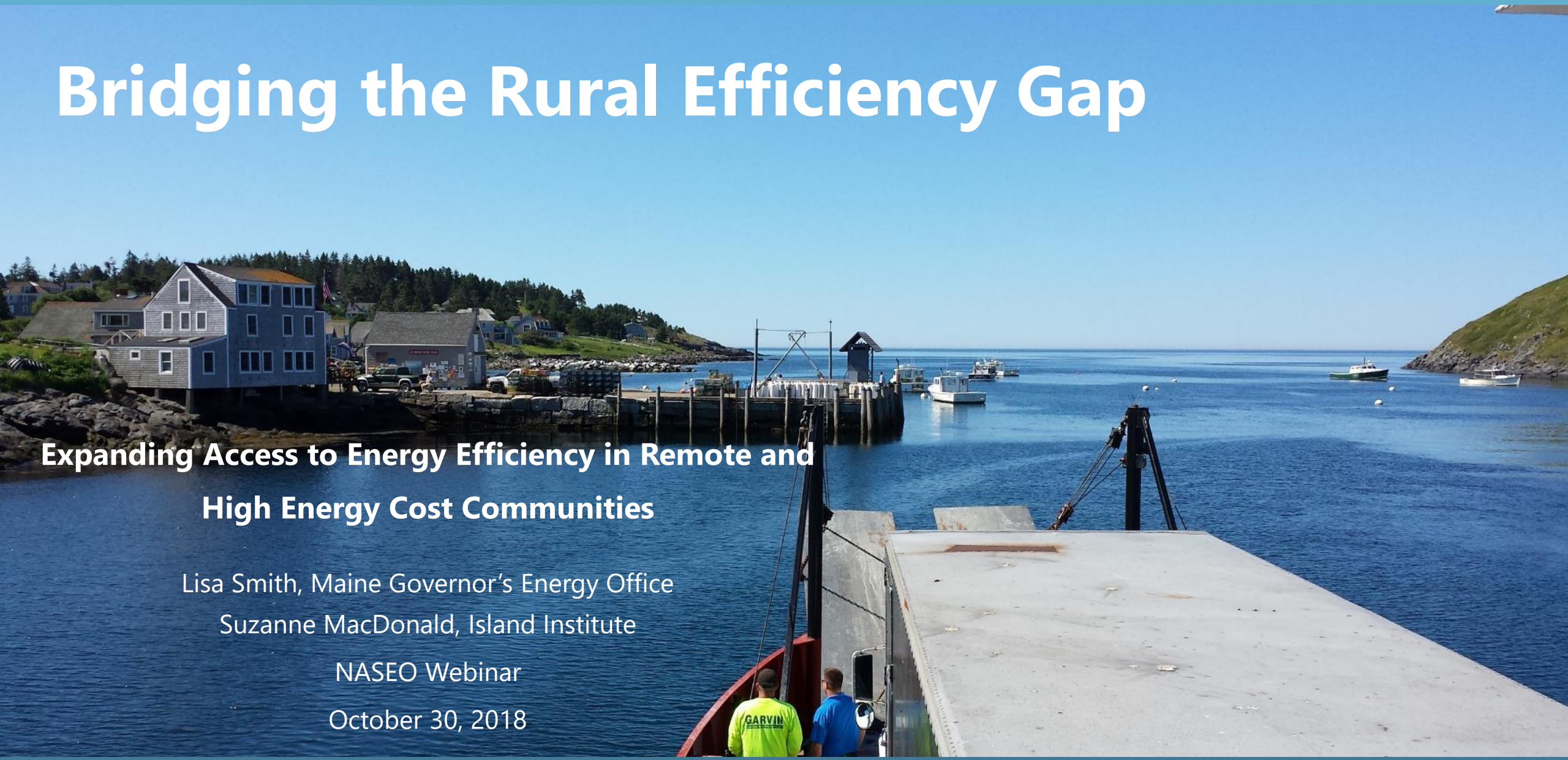
# Bridging the Rural Efficiency Gap




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

Lisa Smith, Maine Governor's Energy Office
Suzanne MacDonald, Island Institute

NASEO Webinar

October 30, 2018

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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

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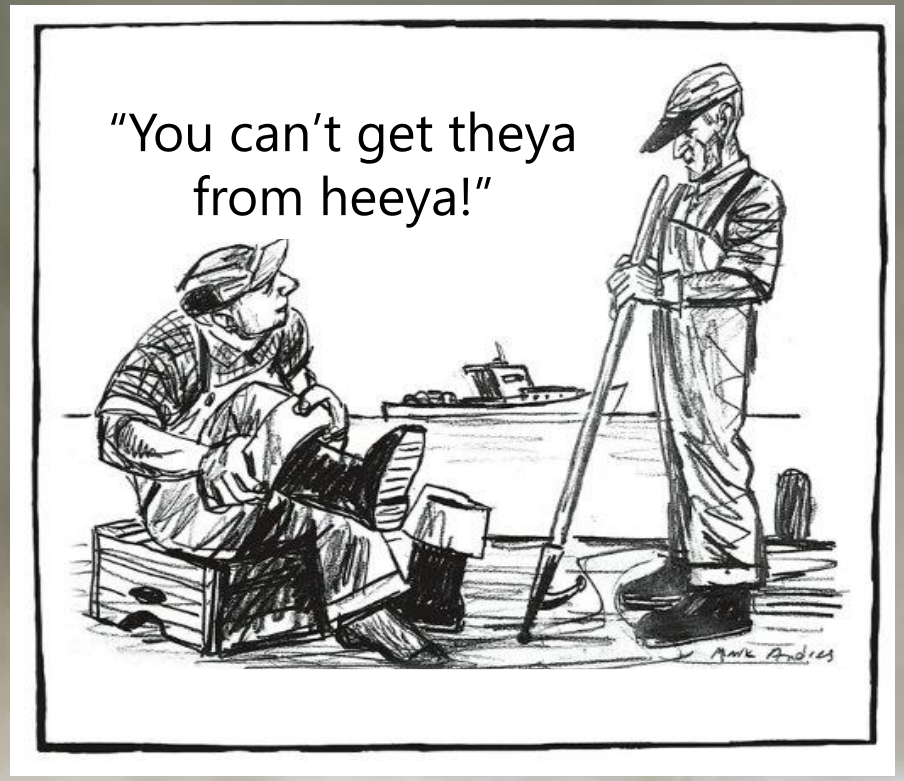
# The Rural Efficiency Gap



# Rural and Remote: Some Statistics

- **One in every five Americans lives in a rural area[1]**
- **Maine has the largest percentage (61%) of its population living in rural areas than any other state in the country[2]**
- **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*

*[1,2] - U.S. Census, American Community Survey*


# Doug's Story

# 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

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# 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**

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***Project Leads:***

Governor's Energy Office

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***Project Partners:***

**New Hampshire Office of Strategic Initiatives**

VITAL COMMUNITIES

efficiency MAINE

ALASKA ENERGY AUTHORITY

U.S. DEPARTMENT OF ENERGY

Efficiency Vermont

**Maine Office of the Public Advocate**

REAP
Renewable Energy Alaska Project

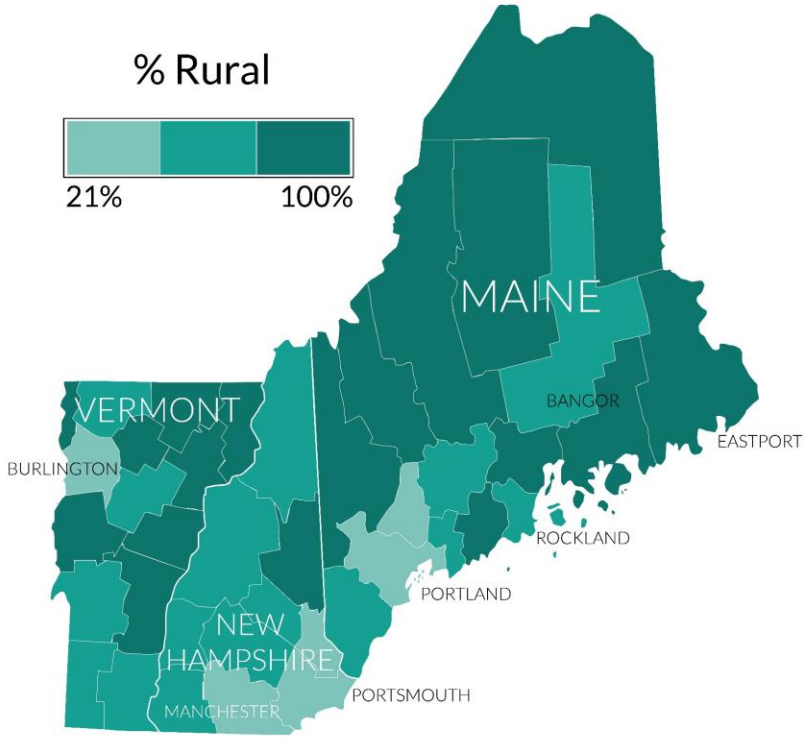
# Shared Challenges

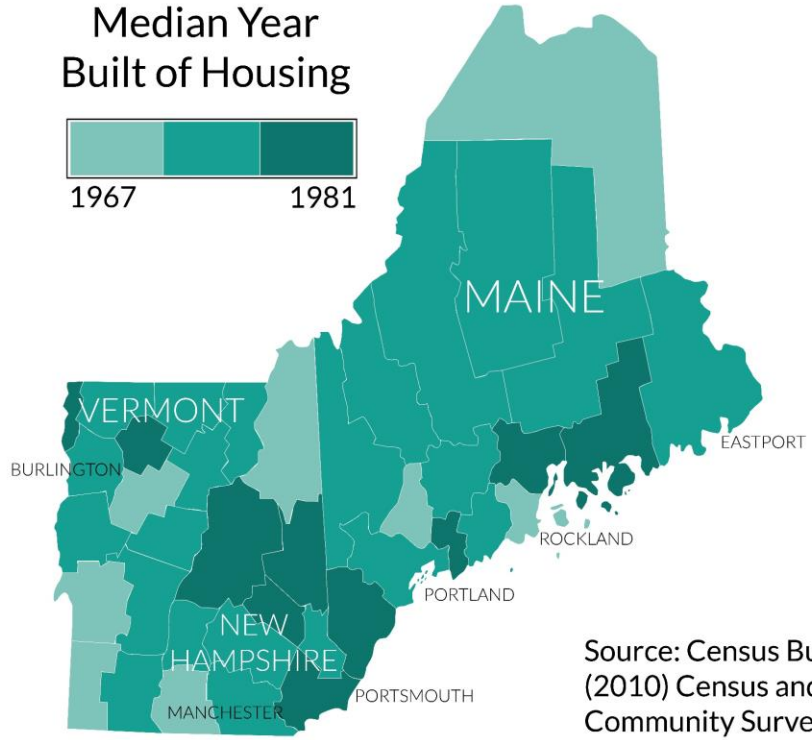
| | Alaska | Maine | New Hampshire | Vermont |
|---|---|---|---|---|
| Percent Population in Rural Areas (rank)[1] | 33.9% (14th) | 61.3% (1st) | 39.7% (11th) | 61.1% (2nd) |
| Heating Oil Consumption Per Capita (rank)[2] | 7th | 1st | 5th | 2nd |
| Percent of Homes Built Before 1940 (rank)[3] | 1% (51st) | 23% (8th) | 21% (12th) | 24% (7th) |
| Energy Expenditures Per Capita (rank)[4] | $7,487 (1st) | $4,565 (5th) | $3,934 (19th) | $4,273 (9th) |
| Average Energy Burden[5] | 5% | 6% | 5% | 5% |

# 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)*




Source: Census Bureau (2010) Census and American Community Survey (2012-2016)

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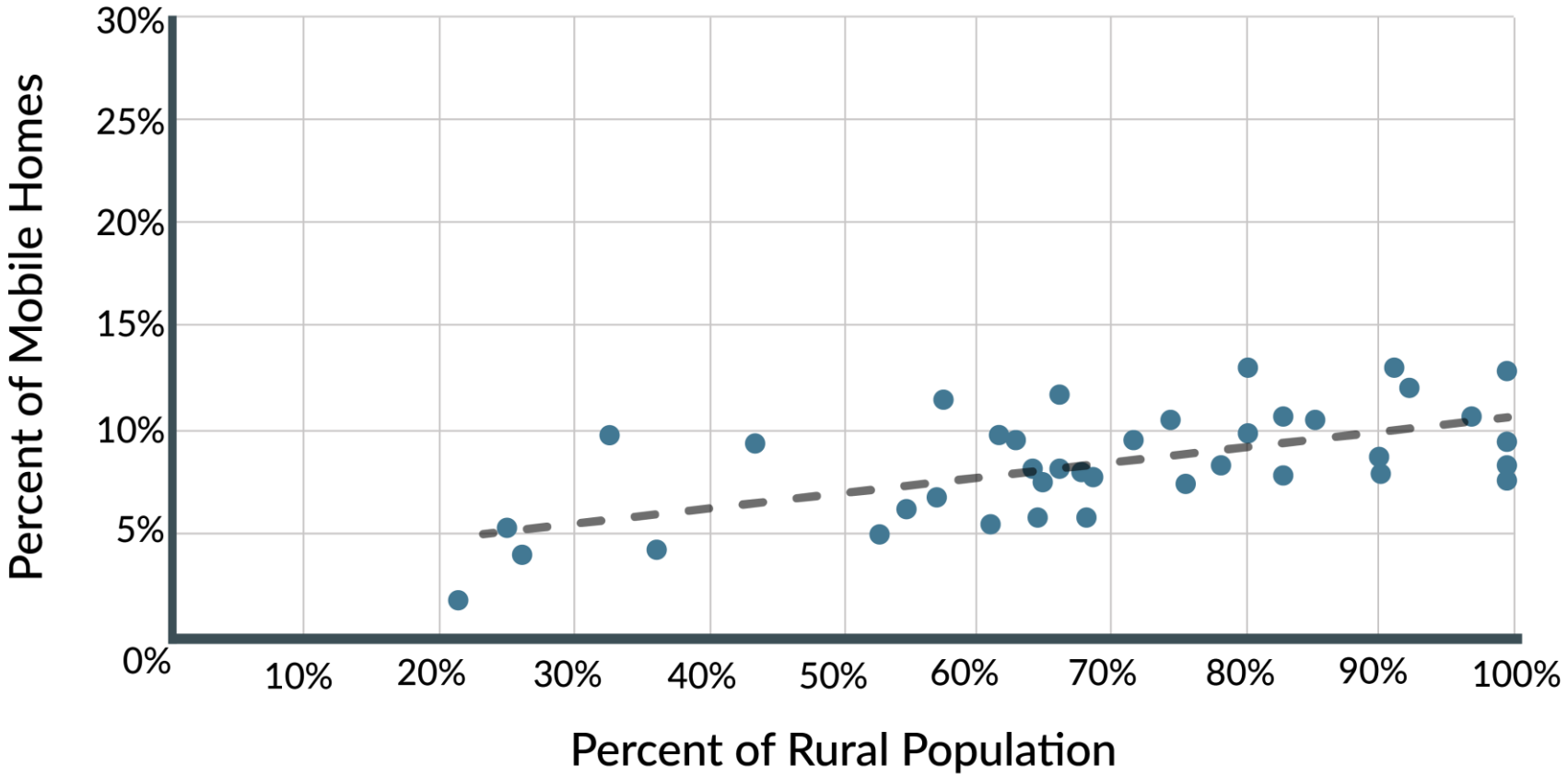
# Rural Housing Stock: Mobile Homes

**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

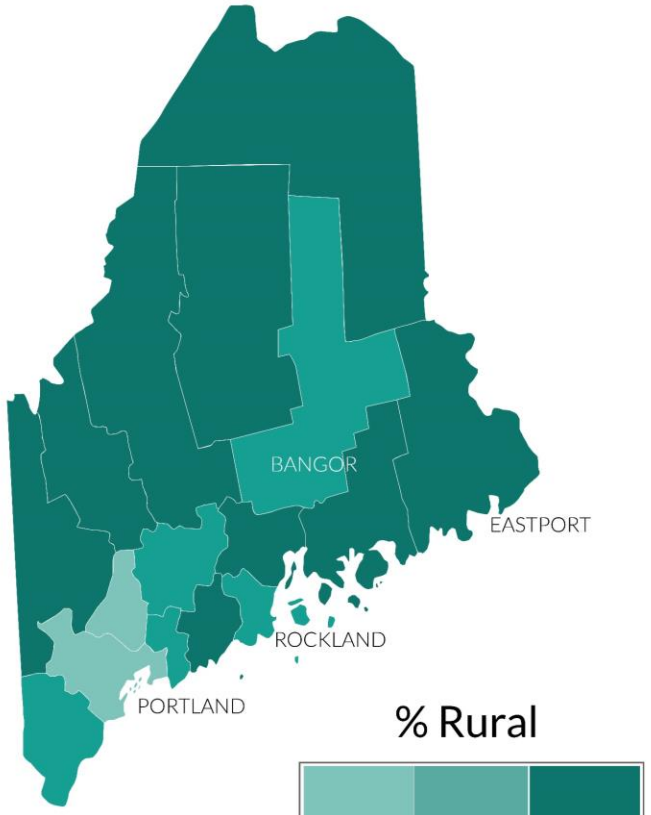
# Methodology

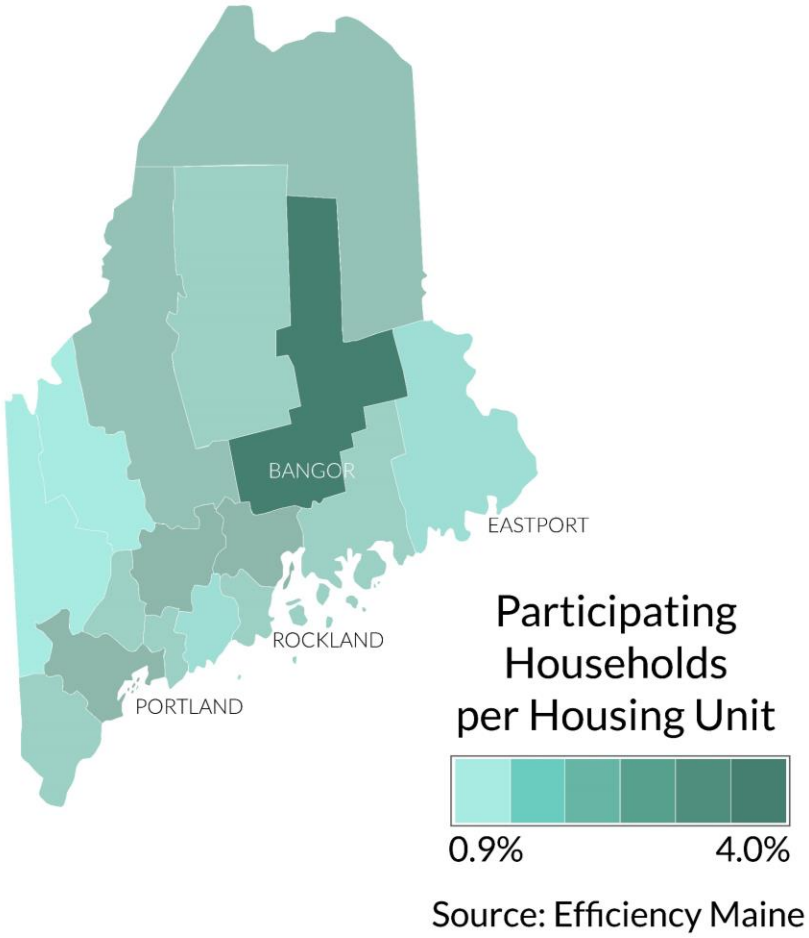
- Interviews with 50+ stakeholders (AK, ME, NH, VT, and other rural states)
  - Administrators, implementers, customers
- Analysis of Census & EIA data, DOE's LEAD tool
- Analysis of energy efficiency program participation data

# 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)*

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# 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*

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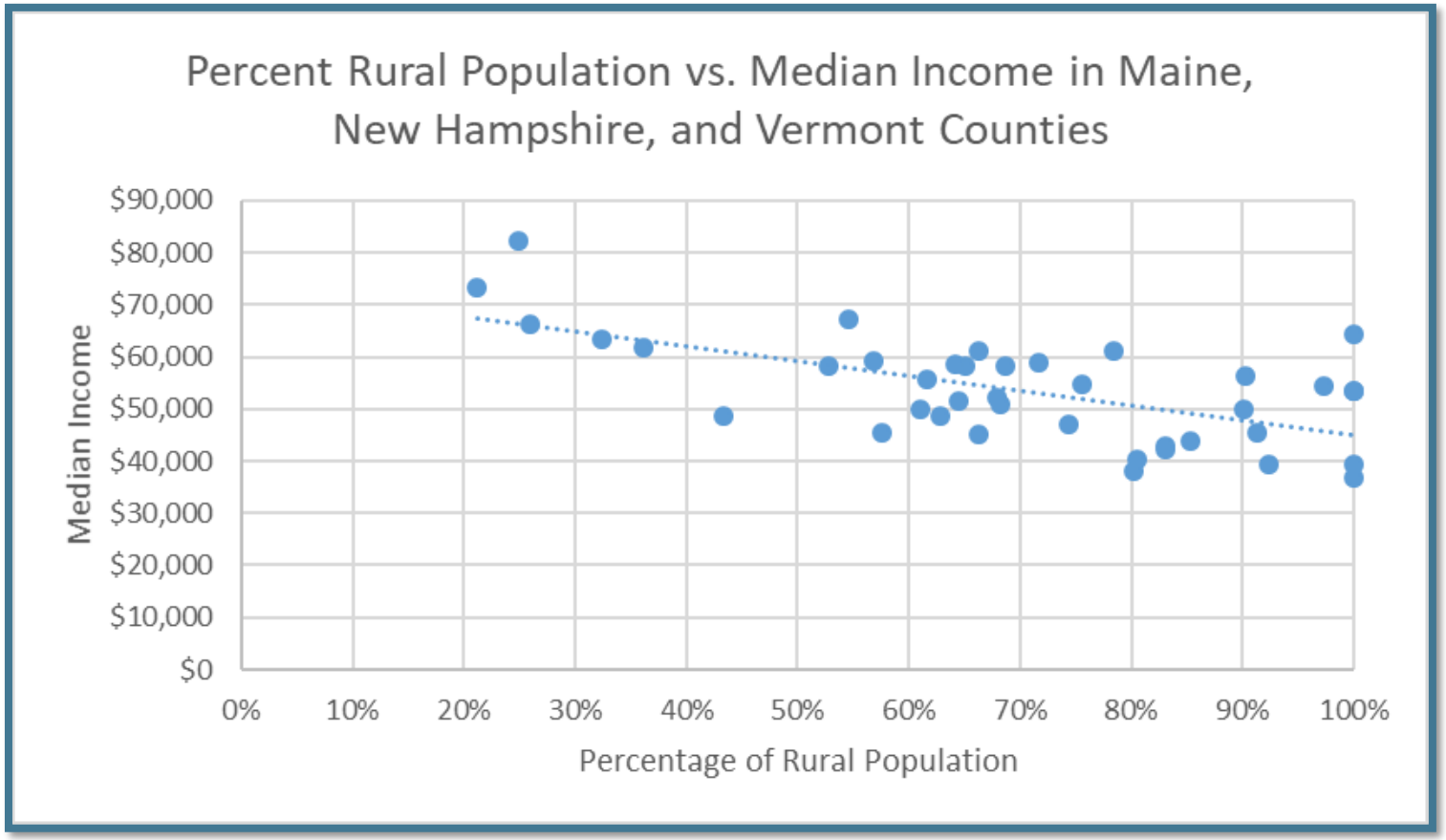
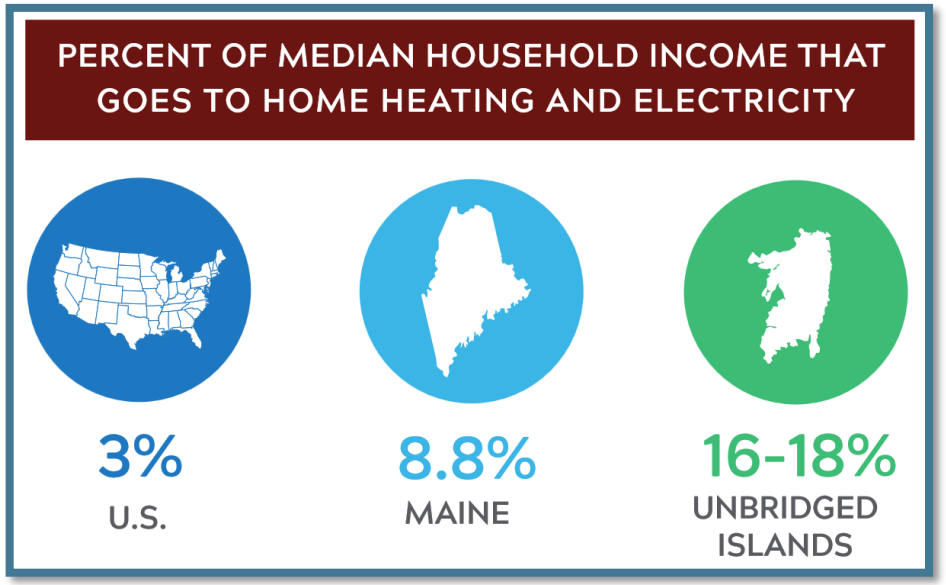
# Financial Barriers: Lower incomes, higher energy burden




*Source: U.S. Census*




*Source: Island Institute's 2017 Waypoints*

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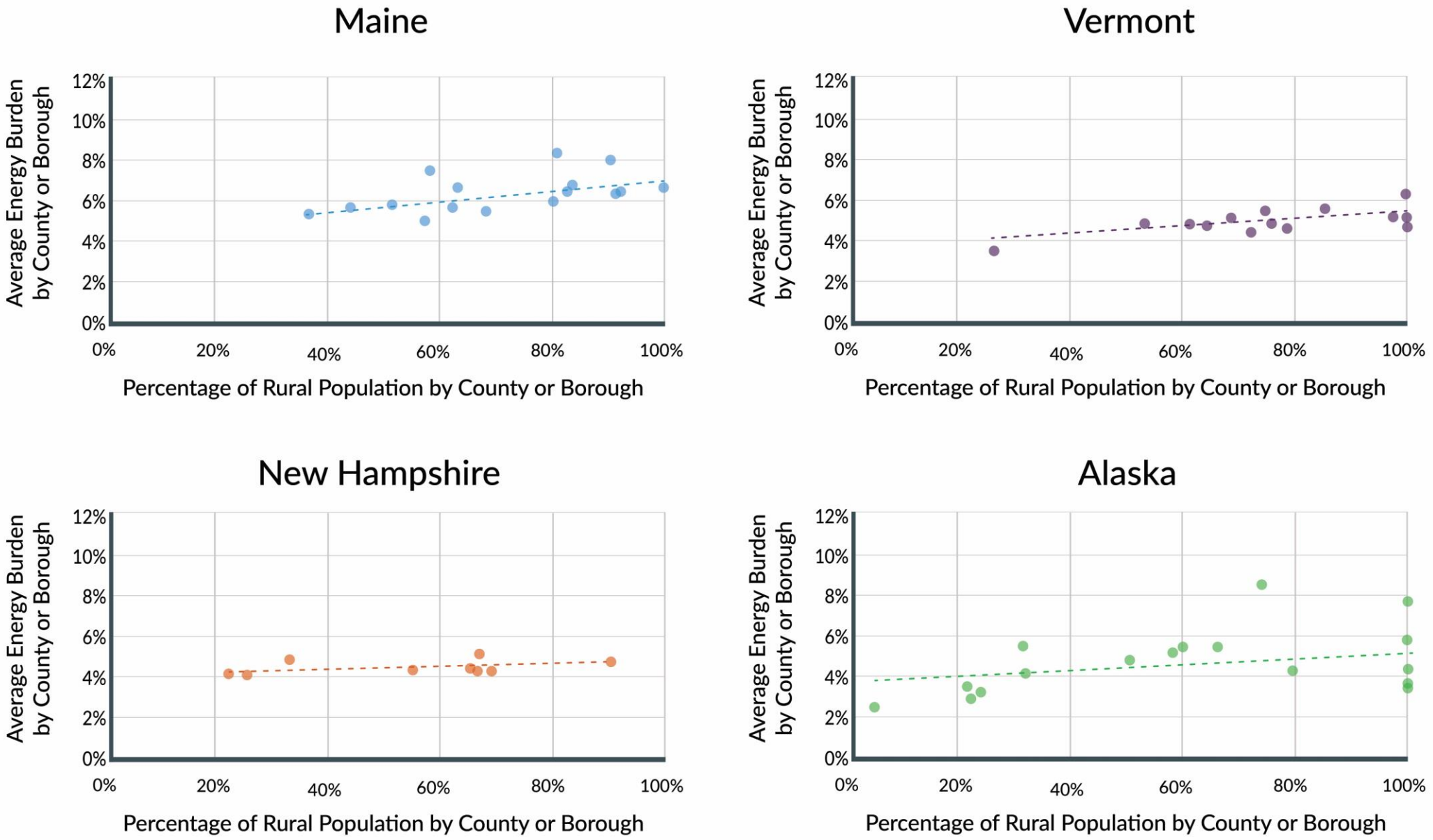
**Figure 12. Energy Burden vs. Percent Rural Population by County in Alaska, Maine, New Hampshire, and Vermont** *Source: DOE Low-Income Energy Affordability Data (LEAD) Tool (2015)*



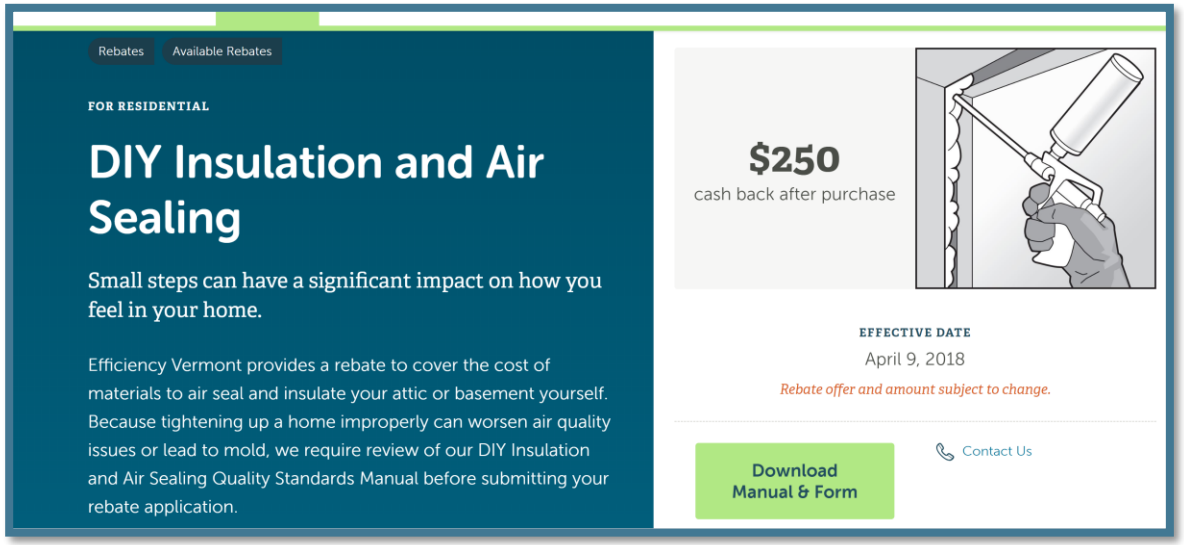
# Awareness & Access Barriers

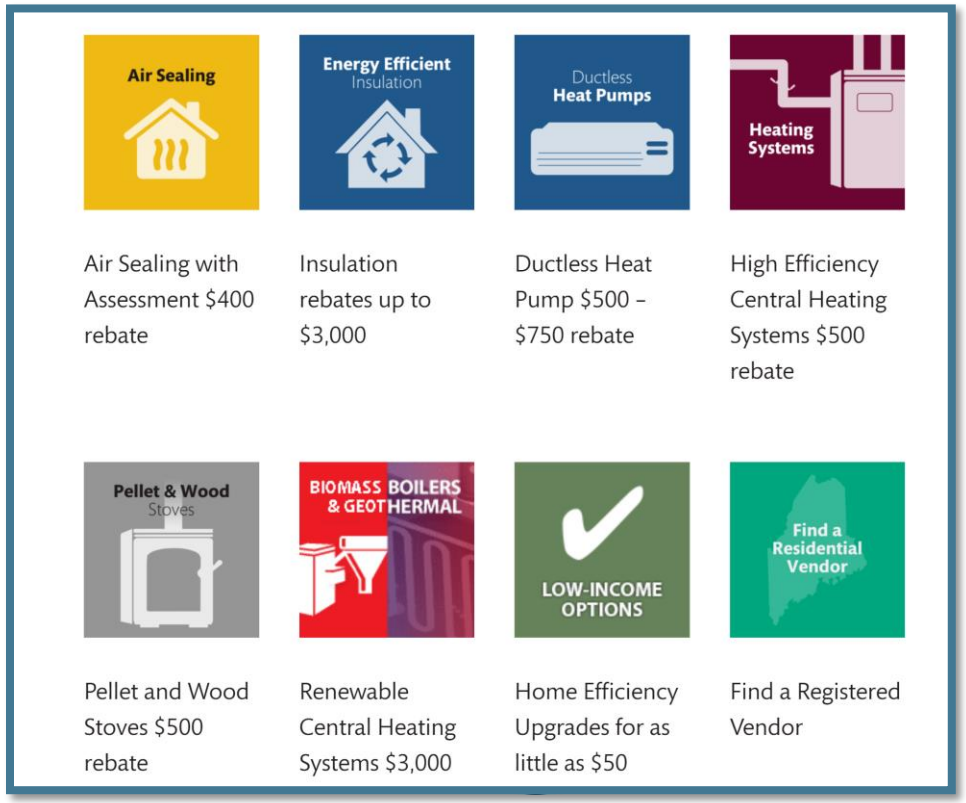
# Models & Strategies for Bridging the Gap

*Photo credit: Matthew Baron*

# Bridging Model Highlights

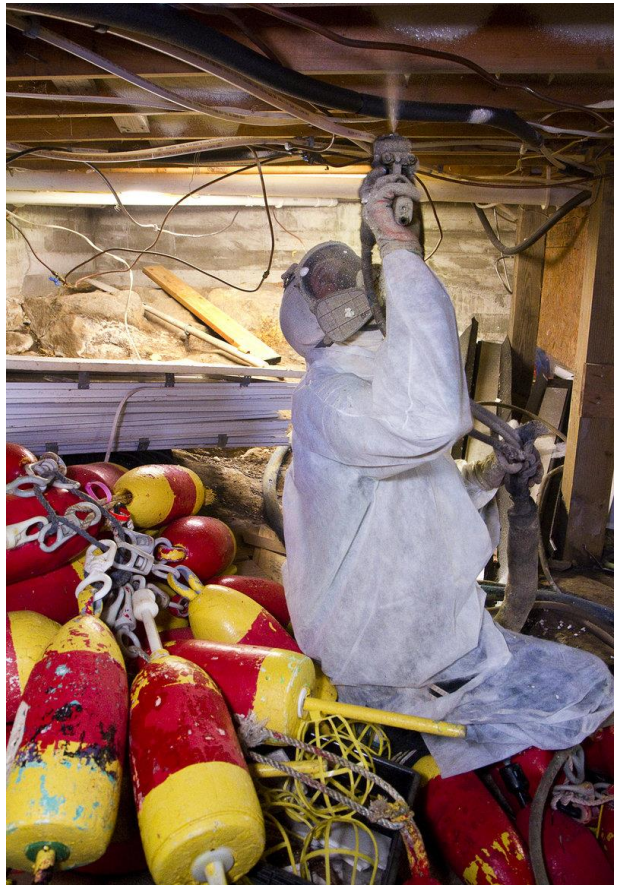
- Program design – staged upgrades (ME), DIY rebate (VT), rural-specific program (AK)
- Implementation models – Community-scale energy efficiency initiatives Energy Wise(AK), Weatherization Weeks (ME), Weatherize campaigns (NH, VT)
- Policies – Geographic equity mandate (VT)



# 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



Spray foam insulation installed in a lobsterman's basement on Monhegan Island, Maine. Photo credit: Portland Press Herald.

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# Project Resources

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

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

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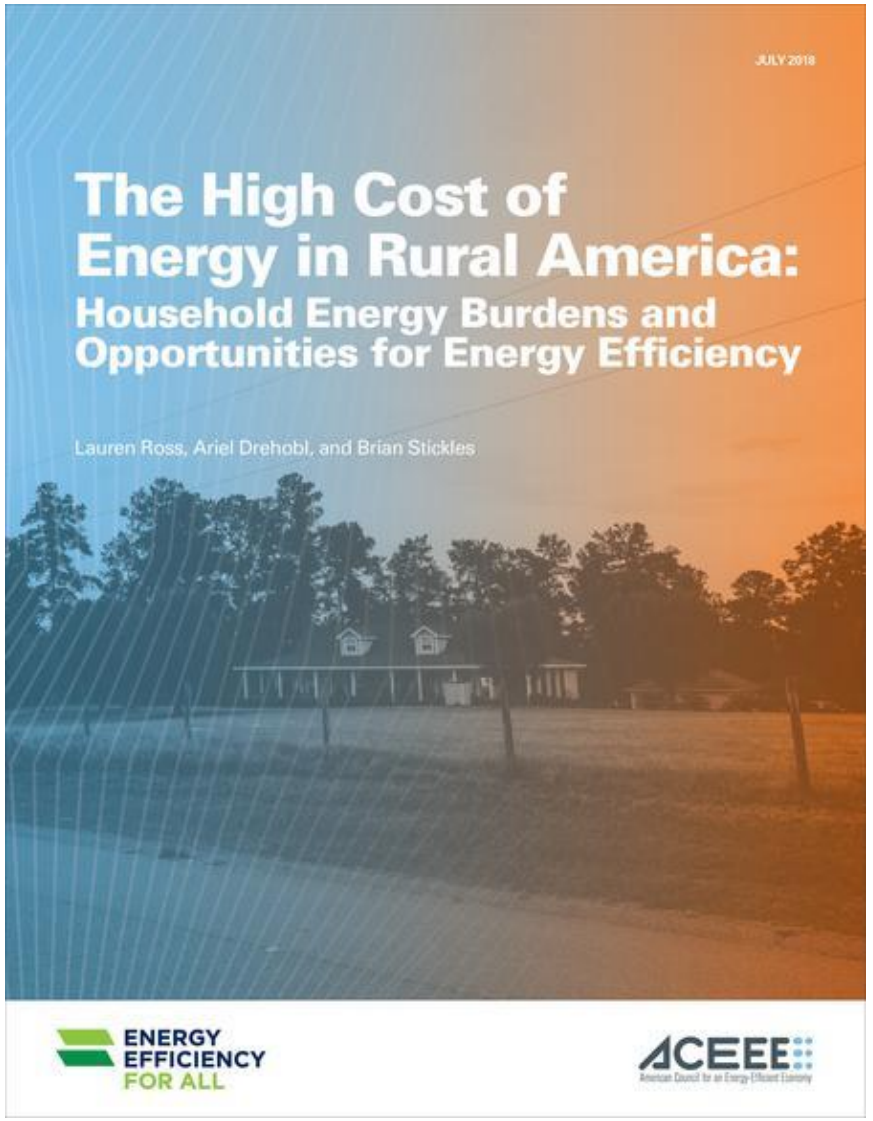
# Next Steps

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




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

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