

Rural Energy Burdens and Energy Efficiency Opportunities

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The American Council for an Energy-Efficient Economy is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors.

Our research explores economic impacts, financing options, behavior changes, program design, and utility planning, as well as US national, state, & local policy.

Our work is made possible by foundation funding, contracts, government grants, and conference revenue.

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What is **RURAL**?

Potential determinants:

- Population & density
- Proximity to urban areas
- Housing stock
- Electricity/utilities provider



Nonmetro (1,976 counties)
Metro (1,167 counties)

*

*Nonmetro counties include urban areas with populations < 50,000 and small towns

Residential Rural Energy Burdens Analysis

Preliminary Results

Snapshot of housing characteristics and energy use for rural households

Characteristics	National	South Atlantic Census Division*
Total households	18,078,000	2,611,000
Single Family	74%	73%
Manufactured Housing	15%	18%
Rental-occupied units	27%	26%
Low-income households (200% FPL)	43%	46%
Using natural gas	4%	15%
Using Propane	2%	22%
Using fuel oil	8%	5%

*The South Atlantic Census Division includes Delaware, DC, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia and West Virginia

Current Study

- What is household energy burden?
 - The proportion of total household income that goes towards home energy bills, which includes electricity, natural gas, and other heating fuels
 - *This analysis excludes transportation energy and water expenses*
- What is a rural household?
 - Households residing in rural Census tracts, based off of Rural-Urban Commuting Area (RUCA) Codes 4 through 10. This includes micropolitan areas, small towns, and rural areas.
- Data source for analysis
 - American Housing Survey, 2015.
 - All data is self-reported



Regional Study



Snapshot of Findings (National and regional selection)



	Sub-groups for analysis	National median energy burden	South Atlantic median energy burden	East South Central median energy burden
Rural/non-rural	Total non-rural	3.1%	3.4%	3.9%
	Total rural	4.4%	4.6%	5.1%
	Bottom 25 th quartile rural	7.8%	8.8%	9.4%
Income	Rural non-low-income	3.1%	3.3%	3.2%
	Rural Low-income	9.0%	9.8%	9.6%
	Bottom 25 th quartile low-income	15.0%	16.9%	14.3%
Housing type	Rural Single Family	4.1%	4.3%	4.7%
	Rural Manufactured	5.8%	6.1%	6.1%
	Bottom 25 th quartile MF	9.8%	11.4%	9.9%

How does energy efficiency fit in?

- Help reduce high energy burdens and increase energy affordability
 - DOE estimates that weatherization through WAP saves an average single family home \$283/year
- Energy efficiency also provides additional benefits for rural communities
 - **Participants:** energy bill savings, more disposable income, healthier homes, increased property value
 - **Utilities:** avoided costs of increased generation, capacity and transmission
 - **Communities:** reduced environmental pollutants, improved public health, reduced poverty and local jobs

Key Takeaways

- Rural households experience higher energy burdens than non-rural
- Rural low-income households disproportionately impacted (many burdens > 15%)
- Rural manufactured housing are especially inefficient
- Energy efficiency can be part of the solution to help alleviate high energy burdens in rural areas



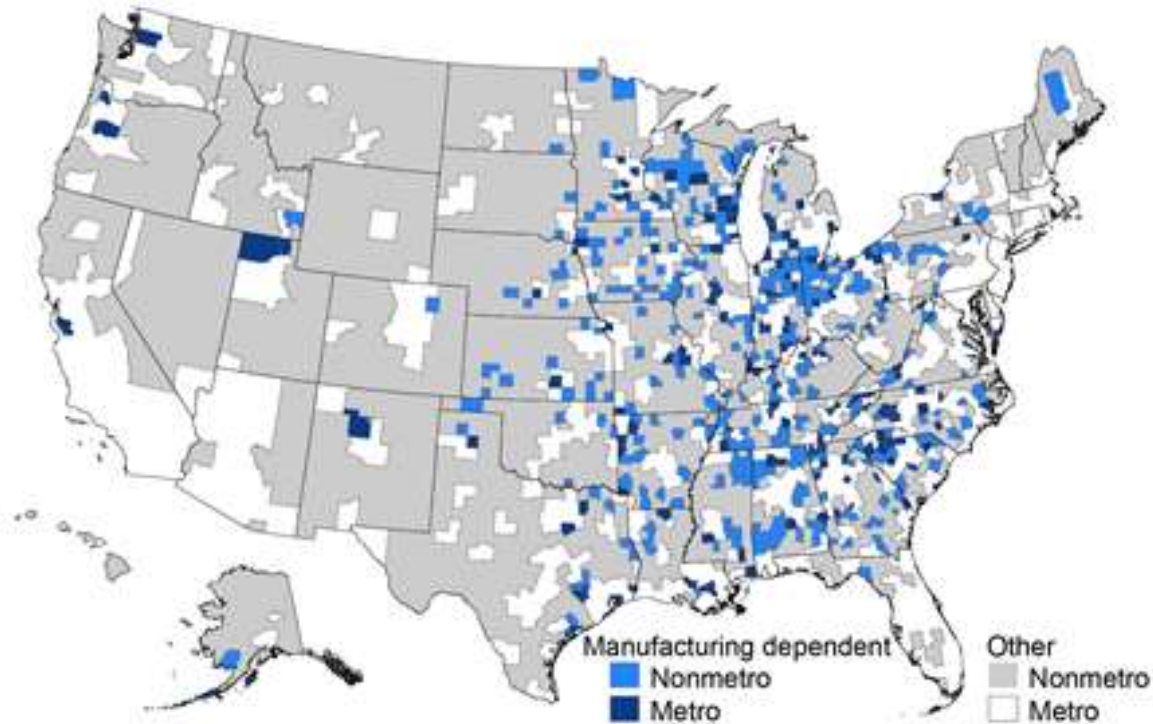
Current & Emerging Opportunities for Rural Residential Energy Efficiency

- On-bill financing
- Fuel-blind programs
- Leveraging broadband expansions
- Collaboration with G&T and distribution utilities
- Workforce development
- Renters & manufactured housing



Energy Efficiency in the Rural Economy

Rural Economy is Manufacturing Dependent



80% of counties that derive greater than 20% of economic share from manufacturing are rural.

Observations

- Rural & small-town communities & their energy use are different from metro areas
- Energy resources & uses are different
- Energy burdens tend to be higher
- EE programs are less robust
- Rural infrastructure different from metro areas, e.g. access to broadband remains a challenge
- Rural businesses tend to be more energy intensive, with ag, forestry, mining & manufacturing dominating
- Need for tailored programs to meet rural needs

Upcoming ACEEE Conference on Energy Efficiency in Rural America

October 29, 2018

Atlanta, Georgia

This one-day, multi-track conference will precede the two-day annual meeting of the Southeast Energy Efficiency Alliance (SEEA). It will explore the role of energy efficiency in rural communities, the energy burden of low-income customers, and the delivery of effective programs to rural communities.



<http://aceee.org/conferences/2018/rural>

Thank You!

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Upcoming ACEEE Conferences

Hot Water Forum	March 20-22	Portland, OR
Energy Efficiency Finance Forum	May 21-22	Tarrytown, NY
Summer Study on Energy Efficiency in Buildings	Aug 12-17	Pacific Grove CA
Behavior, Energy and Climate Change Conference	Oct 7-10	Washington, DC
Rural Energy Conference	Oct 22	Atlanta, GA

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