



American Council for an Energy-Efficient Economy

Incorporating Energy Efficiency Programs into Rural Electricity Offerings

Presented to:

QER Rural Electricity Workshop

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ACEEE

The American Council for an Energy-Efficient Economy (ACEEE)

- ACEEE is a nonprofit 501(c)(3) that acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors
- Over 55 staff based in Washington, DC & around the country
- Research & policy focus on end-use efficiency in industry, buildings, utilities, & transportation
- Complementary research in economic analysis; behavior; financing; and national, state, & local policy.
- Funding:
 - Foundation Grants (52%)
 - Contract Work & Gov. Grants (20%)
 - Conferences (20%)
 - Contributions and Other (8%)



Context for Rural Energy Efficiency

- Rural communities are more energy intensive than nation as whole—agriculture most energy intensive industrial sector; energy largest controllable cost
- Mix of investor-owned & cooperative utilities— different regulatory oversight bodies
- Many rural communities are tied to farming & ranching:
 - Many farms & ranches are both small businesses & residences—metered together
 - Many rural small businesses linked to Agriculture
 - Key agriculture electric uses: lighting, refrigeration, ventilation, & water pumping
- Majority of US manufacturing located in rural areas—most small, but many larger manufacturer are directly served with wholesale electricity

Challenges Facing Rural EE Programs

- Low customer density—increases program costs, but EE still least cost energy resource
- Higher fraction of low & moderate income residential customers; more small business
- Many agricultural processing loads can be seasonable—reduce cost effectiveness
- More limited access to natural gas—greater reliance on electricity for energy
- Many smaller utilities lack depth of resources to run complex programs
- Rural IT infrastructure limited—may limit ability to roll out new “system” measures & integrate distributed resources

Elements of Successful Rural EE Programs

- Set savings targets—measure & report savings
- Target programs to meet unique rural needs—segment customers providing tailored offerings
- Partner with players in market channels—local suppliers & trades
- Leverage unique rural infrastructure: USDA RD & extension; local banks; community organizations
- Many proven efficiency measures available: use prescriptive measures for smaller customers; custom measures for larger customers
- Unique measures available: area lighting; conservation voltage regulation (CVR)

Meeting Needs of Rural Low & Moderate Income Customers

- Rural communities have lower energy affordability
- Urban approaches don't work—lower density; higher fraction of LMI customers; more single-family & mobile homes
- Need to complement EE measures with housing repair measures—increases program costs
- Availability of measures for mobile homes is limited
- Access to capital by home owners limited—need alternative strategies: on-bill financing/repayment
- USDA Rural Housing subsidized housing not motivated to improve efficiency of stock

Energy Efficiency Complements Distributed Resources

- EE programs represent lowest-cost utility resource
- EE reduces electricity needs, reducing size & cost of DE systems
- Siting of distributed resources easier in rural areas—increased opportunities
- Transmission & distribution (T&D) costs greater for rural utilities—EE & DE can defer T&D expenses
- Remote load can be served by distributed renewables without need for connection
- Distributed renewables can increase utility reliability & power quality

Summary

- Energy efficiency least-cost energy resource for rural communities
- Rural communities are more vulnerable to energy costs—EE enhances local economy & quality of life
- EE helps improve energy affordability for LMI & small businesses
- Need unique EE programs approaches for rural communities—address unique challenges
- EE complements distributed resources

Recommendations

- Collect more information on rural electricity use & unique needs
- Develop measures that are specific to rural markets & customers including agriculture
- Explore options for energy efficiency of mobile homes
- Expand energy efficiency activities by USDA
- Study rural energy affordability & expand interagency support of rural LMI electric customer programs

Thank you!

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