Public Support for Community Microgrids: Valuation Evidence from Arizona, Colorado, New Mexico, and Utah

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Electric customers are willing to pay for microgrid installations depending on the level of benefits.

Motivation
- First research into whether electric customers value microgrid installations to increase reliability and resiliency in the Southwest.
- Four-corners is a unique study site with wide range of reliability and policy objectives by jurisdiction.
- Microgrids do not benefit customers equally, so it is valuable to see how support differs between different levels of benefits.
- Electric providers, regulators, and stakeholders should know the public demand and willingness to pay for these systems.

Methods
- Survey of the four-corners: N = 4,782
- Logit analysis to predict participation
- Estimate the median willingness-to-pay for four corners
- See how these differ by state

Level of Benefits
- **Split sample**: 2,397 in indirect benefits group, and 2,385 in direct benefits group
- **Direct group**: "...would directly benefit your community by providing electricity to the community and support for critical infrastructure during stress events."
- **Indirect group**: "...would be installed in a nearby community, but in times of grid stress, this microgrid could reduce the probability of outages to your community.

Main Results (Full Sample/Four Corners)
- **Program Support**
  - No – 39.98%
  - Yes – 42.38%
  - Not Sure – 17.67%
  - People are more likely to support if benefits are direct

- **Direct Benefits Group**
  - Median Monthly WTP = $0.58 per electric rate payer
  - Total Program WTP = $13.92 per electric rate payer (24-month surcharge)

- **Indirect Benefits Group**
  - Median Monthly WTP = $1.06 per electric rate payer
  - Total Program WTP = $25.44 per electric rate payer (24-month surcharge)

State Specific Analysis
- **State Differences**
  - Utah is WTP the most – substantially higher than the other states, and New Mexico is WTP the least
  - States are substantially different in renewable portfolio standards, average electricity cost per month, energy mix, an reliability
  - Arizona and Colorado are WTP the least and results are similar to main conclusions (most reliable electric grids, 2nd and 11th respectively)

Key Takeaways / Conclusions
- The public are more likely to support microgrids if they directly benefit their local community (critical infrastructure and reduced power outage potential).
- The median WTP is higher for microgrids providing direct benefits. This suggests that decision-makers might want to stagger surcharge increases based on location.
- Socioeconomic, institutional, and ideological characteristics of respondents greatly affect their willingness to vote for the installation.
- Results differ by state due to heterogeneity among respondent and state characteristics.
- Strong majority would emerge if the microgrid was guaranteed to use entirely renewable generation on site.

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Figure 1: Survey Responses by County