Study finds community choice energy aggregation programs have reduced costs, increased sustainability

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Credit: NASA

Researchers from the University of Massachusetts Amherst have found that nearly 80% of Community Choice Energy aggregation (CCE)

programs instituted by municipalities in Massachusetts offer reduced electrical costs compared to utility basic service rates, while 60% of standard CCE packages rated "green," with a higher percentage of renewable energy certificates than required by the commonwealth.

The findings are detailed in a new report released by the UMass Amherst Sustainable Policy Lab, which examined the various opportunities and challenges associated with the implementation of CCE aggregation programs across the Bay State using data collected between 2019 and 2022.

CCE programs are energy procurement programs that allow local governments to aggregate the electricity loads of residents, businesses, and municipal facilities to procure their energy supply at competitive market prices. Massachusetts is one of only eight states across the country to have enacted CCE legislation, with such programs adopted by 157 of Massachusetts' 351 municipalities as of November 2021.

Results of the study show that 79% of municipalities achieved savings compared to utilities' monthly basic service rates, with an average amount of savings corresponding to 0.88 cents per kWh, or about $93 per household, per year.

"The savings for these municipalities amount to about $70 million per year, in total," says Marta Vicarelli, assistant professor of economics and public policy at UMass Amherst and principal investigator of the study, which assessed municipal officials' responses to interviews, focus groups and an online survey. "Additionally, 35% of municipalities achieved savings above 1 cent per kWh—about $106 per household, per year—and the maximum amount of savings corresponded to 2.55 cents per kWh, or about $271 per household, per year."

Vicarelli's team also found that 30% of standard CCE packages not only

exceed the Massachusetts renewable energy requirement, but also contain 100% of renewable energy certificates, while 89% of municipalities with contracts exceeding state renewable energy level requirements achieved savings corresponding to about $33,500,000 per year in total.

"This is one of the most interesting and uplifting results," says Vicarelli. "It suggests that a fair and equitable access to energy is not compromised by the transition to sustainable / renewable energy, which is urgently needed to mitigate climate change."

In the survey, municipalities systematically reported obtaining additional benefits beyond their primary goal. "For instance," Vicarelli says, "among municipalities with 'higher renewable energy levels' as their primary goal, the top three benefits reported include higher renewable energy levels (83%), reduced rates (78%) and price stability (65%)."

In addition to outlining benefits, the report also details some of the challenges that municipalities faced instituting CCE programs, the most frequently reported of which being delays associated with approval from the Department of Public Utilities (DPU); some municipalities had to wait more than one year for the DPU approval, the researchers found. Smaller municipalities—particularly in rural areas—were more likely to have experienced difficulties associated with information acquisition toward the creation of CCE programs and understanding or interpreting state regulations associated with CCEs.

"To our knowledge, this is the first study assessing in detail the performance of a CCE program in the United States by both analyzing market data as well as the self-reported experience of municipalities," Vicarelli says. "Our results suggest that community energy aggregation programs contribute to making the energy market more equitable by reducing costs for consumers and by providing higher price stability and

customer's protection. Moreover, with solar and wind energy prices declining over time, and fossil fuel prices becoming more and more volatile, CCE programs are emerging as promising cost-effective instruments to support the transition to sustainable energy and climate mitigation efforts.

"Last, but not least," she says, "by expanding local renewable energy markets, CCE programs contribute to local economic development."

More information: Community Choice Electricity Programs: A Survey of Massachusetts Municipalities: www.umass.edu/spp/research-act … setts-municipalities

Provided by University of Massachusetts Amherst