

Renewable energy reduces the highest electric rates in the nation

March 14 2019, by Kelley Christensen

Coal is the primary fuel source for Midwest electric utilities. Michigan Technological University researchers found that increasing renewable and distributed generation energy sources can save Michigan electric consumers money.

As [renewable energy technologies](#) and access to distributed generation like residential solar panels improve, consumer costs for electricity decrease. Making electricity for yourself with solar has become more affordable than traditional electricity fuel sources like coal.

However, as three Michigan Tech researchers contend in a new study, while utility fuel mixes are slowly shifting away from fossil fuels toward [renewable sources](#), Michigan utilities, and U.S. utilities broadly, continue a relationship with fossil fuels that is detrimental to their customers.

The paper, "Policies to Overcome Barriers for Renewable Energy Distributed Generation: A Case Study of Utility Structure and Regulatory Regimes in Michigan," was published in the [energy](#) policy special issue of the journal *Energies*.

"Michigan utilities are beginning to recognize the benefits of solar (and other renewables)," said Emily Prehoda, lead author of the paper and doctoral candidate in environmental and energy policy at Michigan Tech. "Some utilities are even shifting their portfolios to include large-scale solar and wind generation. However, utilities fear competition from, and actively hinder proliferation of, distributed generation systems by

clinging to the traditional utility model."

In the paper, Prehoda and co-authors Joshua M. Pearce, Richard Witte Endowed Professor of Materials Science and Engineering, and Chelsea Schelly, associate professor of sociology, note that in the U.S., "70 percent of coal plants run at a higher cost than new [renewable energy](#) and by 2030 all of them will."

The researchers provide a breakdown of savings per kilowatt hour by county that Michigan residents could achieve if they produce their own electricity with solar photovoltaic panels.

The most significant impacts of distributed generation with solar are in the Upper Peninsula, where residential customers could see savings of approximately 7 cents per [kilowatt hour](#). Assuming the average residential consumer uses 600 kilowatt hours of electricity monthly, this is a savings of \$42 per utility bill. Downstate, the average savings per utility bill under the researchers' model is approximately \$30 monthly.

However, not all Michigan consumers can take advantage of the opportunity to self-generate, as some utilities are blocking additional net-metered distributed generation in their areas.

"Refusing to allow Michigan customers to have the opportunity to install cheaper and reliable electricity sources deprives the electrical grid of many benefits," Prehoda said. One such benefit is creating a more decentralized electric grid less vulnerable to attack.

According to the Michigan Public Service Commission's (MPSC) [2017 annual report](#) (the most recent available), Michigan's use of coal as its primary electricity fuel source has decreased (from 73.18 percent in 2009 to 37.41 percent in 2016), and that void has been filled mainly by natural gas, energy waste reduction and renewable energy (which

increased from 4 percent in 2009 to 9.67 percent in 2016). In Michigan, 84 percent of residents receive electricity from for-profit corporations like UPPCO and Consumers Energy.

In early 2019, Consumers Energy, which provides electricity to many Lower Peninsula communities, [was approved for a rate increase](#) that equates to a \$1.62 increase per month for customers.

In late 2018, UPPCO requested a \$10 million annual rate increase, which equates to a \$6.50 per month increase for a residential customer consuming approximately 500 kilowatt hours of energy monthly; in February 2019, Michigan's Attorney General Dana Nessel filed in opposition to the increase with the MPSC and has suggested to the MPSC, a rate increase of no more than \$3.5 million.

While in the past MPSC has lowered the amount of requested rate increases, the commission has not denied a rate increase.

Yet, as this study demonstrates, if utilities allow customers to generate their own power in addition to the power they consume from the grid, residential customers would see a substantial decrease in their electric rate by making their own solar [electricity](#).

More information: Emily Prehoda et al. Policies to Overcome Barriers for Renewable Energy Distributed Generation: A Case Study of Utility Structure and Regulatory Regimes in Michigan, *Energies* (2019). [DOI: 10.3390/en12040674](https://doi.org/10.3390/en12040674)

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