

Shifts to renewable energy can drive up energy poverty, study finds

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Efforts to shift away from fossil fuels and replace oil and coal with renewable energy sources can help reduce carbon emissions but do so at the expense of increased inequality, according to a new Portland State University study.

Julius McGee, assistant professor of sociology in PSU's College of Liberal Arts and Sciences, and his co-author, Patrick Greiner, an assistant professor of sociology at Vanderbilt University, found in a study of 175 nations from 1990 to 2014 that renewable energy consumption reduces carbon emissions more effectively when it occurs in a context of increasing inequality. Conversely, it reduces emissions to a lesser degree when occurring in a context of decreasing inequality.

Their findings, published recently in the journal *Energy Research & Social Science*, support previous claims by researchers who argue that renewable energy consumption may be indirectly driving energy poverty. Energy poverty is when a household has no or inadequate access to energy services such as heating, cooling, lighting, and use of appliances due to a combination of factors: low income, increasing utility rates, and inefficient buildings and appliances.

McGee said that in nations like the United States where fossil fuel energy is substituted for renewable energy as a way to reduce [carbon emissions](#), it comes at the cost of increased inequality. That's because the shift to renewable energy is done through incentives such as tax subsidies. This reduces energy costs for homeowners who can afford to

install [solar panels](#) or energy-efficient appliances, but it also serves to drive up the prices of fossil fuel energy as utility companies seek to recapture losses. That means increased utility bills for the rest of the customers, and for many low-income families, increased financial pressure, which creates energy poverty.

"People who are just making ends meet and can barely afford their energy bills will make a choice between food and their energy," McGee said. "We don't think of energy as a human right when it actually is. The things that consume the most energy in your household—heating, cooling, refrigeration—are the things you absolutely need."

Alternatively, in poorer nations, renewable sources of electricity have been used to alleviate energy poverty. In [rural areas](#) in southeast Asia and sub-Saharan Africa, a solar farm can give an agrarian community access to electricity that historically never had access to energy, McGee said.

"That's not having any impact on [carbon dioxide emissions](#) because those [rural communities](#) never used [fossil fuels](#) in the first place," he said.

The study recommends that policymakers consider implementing policy tools that are aimed at both reducing inequality and reducing emissions. McGee and Greiner said such policies would both incentivize the implementation of renewable energy resources, while also protecting the populations that are most vulnerable to energy poverty.

"We really need to think more holistically about how we address [renewable energy](#)," McGee said. "We need to be focusing on addressing concerns around housing and [energy poverty](#) before we actually think about addressing climate change within the confines of a consumer sovereignty model."

More information: Julius Alexander McGee et al, Renewable energy

injustice: The socio-environmental implications of renewable energy consumption, *Energy Research & Social Science* (2019). DOI: [10.1016/j.erss.2019.05.024](https://doi.org/10.1016/j.erss.2019.05.024)

Provided by Portland State University

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