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On Energy Research and Policy

ABSTRACT

"The Electric Gini: Income Redistribution through Energy Prices"

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Most electric utilities in the United States charge two-part tariffs to residential customers: volumetric prices that are typically in excess of the utility's marginal cost of providing electricity and fixed charges used to collect additional revenue to cover total costs. And many utilities charge residential customers increasing block prices, higher prices to ratepayers that use more electricity. One obvious reason is equity. We first show that in theory, price setters concerned about inequality will charge lower-than-efficient fixed monthly fees and higher-than-efficient per-kWh prices, and will target higher users with even higher prices. Then we use a new dataset of more than 1300 utilities across the US to show that these theoretical predictions are borne out in practice. Utilities whose ratepayers have more unequal incomes have more redistributive electricity pricing schemes, charging less to low users and more to high users. Utilities with more ratepayers who vote Democratic, with higher costs, and with higher fractions of commercial or industrial customers have more redistributive residential pricing. To quantify these comparisons, we develop a new measure of the redistributive extent of utility pricing that we call the "electric Gini." Utilities with higher electric Ginis (more redistributive pricing) shift costs from households that use relatively little electricity to households that use more. But because electricity use is only loosely correlated with household incomes, that redistribution does not meaningfully shift costs from households with low incomes to those with high incomes.