

The Economic Impact On Kentucky Residential Customers Of Energy “Sold” To Utilities From Net Metering Solar Customers in 2016¹

This paper explores the economic impact of net metering on non-participating residential ratepayers from excess electricity “sold” to the grid at retail rates. The analysis uses two data sets from the U.S. Energy Information Administration. They are *2016 Utility Bundled Retail Sales – Residential*², which provided the number of residential customers per utility in 2016, and *EIA_Net Metering_ Data All Utilities_2016*³, which provides the amount, in MWh, of electricity “sold” to regulated utilities by net metering solar customers.

This analysis looks at the cost to each utility for crediting net metering customers at the retail rate rather than the avoided cost rate (this difference assumed to be roughly 7 cents per kwh) for excess power supplied to the grid. The electric utilities contend that they should be allowed to credit solar customers at the avoided cost rate and that paying above this rate results in additional costs which must be paid by all other ratepayers.

The analysis shows that, for 2016, the economic impact for any non-participating customer ranged from a high of 4 cents per month, or 48 cents a year, to a low of 0.1 cents per month, or 1.3 cents per year, with an average economic impact on non-participating customers of 0.3 cents per month, or 4 cents per year.

The total amount of “additional costs” paid by all utilities in Kentucky due to net metering in 2016 was \$45,228 or \$5,653 per utility with net metering customers. Data for all regulated utilities who reported net metering information to the US EIA is provided in the accompanying table.

This analysis assumes that excess generation from net metering customers is in fact only worth the avoided cost rate, which is subject to debate. For example, at times of peak demand in the summer when solar production is also at its peak, solar generation offsets the need for utilities to use their most costly peaking generation resources.

This analysis also does not account for any other benefits that net metering provides to the utility and other ratepayers. These benefits, which have been quantified by studies performed in other states, would offset the costs identified in this analysis. Therefore, these figures reflect the upper limit of potential costs that net metering might impose on other customers.

¹ Prepared by Tom FitzGerald, Kentucky Resources Council, February 28, 2018.

² US Energy Information Administration, 2016 Utility Bundled Retail Sales - Residential.

³ US Energy Information Administration, Electric power sales, revenue, and energy efficiency Form EIA-861 detailed data files. (<https://www.eia.gov/electricity/data/eia861/>)

The Economic Impact On Residential Customers Of Energy “Sold” To Utility From Photovoltaic Customers in 2016

Assuming the utility credited for excess PV generation equal at the retail rate rather than the avoided cost (roughly 7 cents per kWh).

Utility Name (note that municipal utilities are not governed by the net metering law and thus are not included here)	RESIDENTIAL Energy Sold Back MWH in 2016	RESIDENTIAL Energy Sold Back KWH in 2016	Value Of Credits Given in 2016 @ \$0.07/kWh	# of Residential Customers	Annual Cost per Customer	Monthly Cost per Customer
Clark Energy Coop Inc - (KY)	21.700	21,700	\$ 1,519	24,477	\$ 0.062	\$ 0.0052
Cumberland Valley Electric, Inc.	0.000	-	\$ -			\$ -
Fleming-Mason Energy Coop Inc	0.000	-	\$ -			\$ -
Grayson Rural Electric Coop Corp	12.179	12,179	\$ 853	14,166	\$ 0.060	\$ 0.0050
Inter County Energy Coop Corp	0.000	-	\$ -			\$ -
Jackson Energy Coop Corp - (KY)	0.000	-	\$ -			\$ -
Jackson Purchase Energy Corporation	0.000	-	\$ -			\$ -
Kenergy Corp	0.000	-	\$ -			\$ -
Kentucky Utilities Co	121.335	121,335	\$ 8,493	426,225	\$ 0.020	\$ 0.0017
Louisville Gas & Electric Co	66.992	66,992	\$ 4,689	356,424	\$ 0.013	\$ 0.0011
Meade County Rural E C C	0.000	-	\$ -			\$ -
Nolin Rural Electric Coop Corp	253.000	253,000	\$ 17,710	32,952	\$ 0.537	\$ 0.0448
Owen Electric Coop Inc	0.000	-	\$ -			\$ -
Salt River Electric Coop Corp	88.000	88,000	\$ 6,160	46,901	\$ 0.131	\$ 0.0109
Shelby Energy Co-op, Inc	0.000	-	\$ -			\$ -
South Kentucky Rural E C C	58.046	58,046	\$ 4,063	61,106	\$ 0.066	\$ 0.0055
Taylor County Rural E C C	0.000	-	\$ -			\$ -
Duke Energy Kentucky	0.000	-	\$ -			\$ -
Kentucky Power Co	24.866	24,866	\$ 1,741	137,013	\$ 0.013	\$ 0.0011
TOTAL CREDIT AND AVERAGE COST	646.118	646,118	\$ 45,228	1,099,264	\$ 0.04	\$ 0.003