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Kentucky Public Service Commission
P.O. Box 615
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Frankfort, Kentucky 40602

Public Service Commission:

Please consider the following comment in Case No. 2019-00256.

Sincerely,

Nick Nash

I. PSC has a duty to ensure the net-metering rate accurately reflects the cost utilities avoid when solar energy is added to the grid

The PSC is required to set the net metering rate “using the ratemaking processes under [KRS § 278] during a proceeding initiated by a retail electric supplier or generation and transmission cooperative on behalf of one (1) or more retail electric suppliers.”¹ KRS § 278 contains no specific ratemaking process for determining a fair net metering rate. The only guidance can be found in the general utility statute, KRS § 278.030, which states that utilities must furnish adequate, efficient, and reasonable service. To discharge its duty under KRS § 278.040, the PSC must ensure the net metering rate is adequate, efficient, and reasonable.²

The most fair and reasonable rate would compensate solar consumer-generators at a price that accurately reflects the actual cost utilities avoid when solar consumer-generator contribute electricity to the grid. Neither the retail electricity rate nor the wholesale electricity rate accurately reflects that avoided cost. The exact avoided cost may impossible to determine, but the following factors can bring the price closer to the actual avoided cost.

II. Avoided Costs

Residential solar panel systems add electricity at peak demand times when generation is more expensive than the average wholesale rate. They also avoid line losses and prevent the need for future generation capacity and grid upgrades.

¹ KRS § 278.466 (Effective Jan. 1, 2020).

² See *Kentucky Pub. Serv. Comm'n v. Com. ex rel. Conway*, 324 S.W.3d 373, 377 (Ky. 2010) (“the PSC must ensure that utility rates are fair, just, and reasonable to discharge its duty under KRS 278.040 to ensure that utilities comply with state law.”)

a. Generation Costs

Solar consumer-generators should be compensated for the utilities' avoided generation cost not at the wholesale electricity price but at a price that reflects utilities' average marginal cost of producing electricity during the times that solar panels operate.

Utilities' cost of generation varies based on demand. At low-demand times, the marginal cost of generation is lower, because utilities use their lower-cost generators first. At higher demand times, the marginal cost of generation is higher, because utilities must use their higher-cost generators to meet demand. Solar panels produce electricity during peak electricity demand times. This reduces the need for utilities to use their less cost-efficient generators. Therefore, the utilities' average wholesale cost of producing one kWh of electricity does not accurately reflect the electricity generation that solar panels displace. To better represent the actual cost utilities avoid when solar consumer-generators add electricity to the grid, the PSC should consider utilities' average marginal cost of producing electricity during the times that solar panels operate. Solar consumer generators should be reimbursed accordingly.

b. Line losses

Solar consumer-generators should also be compensated for avoided line losses. If the owner of the installation does not use all of his generation, the excess enters the grid and is used by one of his neighbors. Nearly zero energy is lost between the solar installation and the end-user because of the proximity of the end-user to the energy source. By comparison, the EIA estimates that Kentucky utilities lost 5.13% of utility-generated electricity through transmission and distribution in 2017.³ To come closer to

³ *Kentucky Electricity Profile 2015*, U.S. Energy Info. Admin. (Oct. 14, 2019) <https://www.eia.gov/state/?sid=KY>.

an efficient net metering rate, solar consumer-generators should be reimbursed for the line loss costs that utilities avoid as a result of solar panel electricity production.

c. Future generation and grid upgrades

Net metering customers should also be compensated for avoided costs of future generation and grid upgrades. Residential solar systems add generation capacity to the grid and do not require extra transmission and distribution lines. Solar consumer-generators therefore reduce the need for future investments in extra generation capacity and additional distribution and transmission lines. The PSC should conduct an avoided cost analysis to determine the future upgrade savings that solar consumer-generators create and consumer-generators should be reimbursed accordingly.

III. Kentucky should prepare for a renewable energy future

Coal is becoming more expensive to extract, while innovations in battery storage and solar power are rendering renewable energy less expensive every year. Soon, extracting fossil fuels will be more expensive than harvesting renewable energy at the utility scale. In order to ensure Kentucky does not fall behind in the switch to renewables, the state should encourage companies and individuals to continue investing in renewable energy.