

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC CONSIDERATION OF THE	)	CASE NO.
IMPLEMENTATION OF THE NET	)	2019-00256
METERING ACT	)	

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COMMENTS OF DUKE ENERGY KENTUCKY, INC.

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**I. INTRODUCTION**

Please accept these comments submitted on behalf of Duke Energy Kentucky, Inc., (Duke Energy Kentucky or Company) in response to the Kentucky Public Service Commission’s (Commission’s) request for comments from interested utilities and stakeholders in order to develop a record that the Commission can draw upon as it considers broad issues of implementation of the Net Metering Act as they apply to individual utilities.<sup>1</sup>

**II. BACKGROUND**

The Net Metering Act, which will take effect on January 1, 2020, will allow the Commission, via individual utility proceedings, to establish compensation rates for customer-generators that reflect today’s reality and promote optimal decision-making and investment by customers, investors, and utilities. Beginning in the 1980’s, states began enacting net metering laws to encourage the development of renewable generation capacity and the use of renewable energy.<sup>2</sup> At that time, renewable energy generation was extremely

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<sup>1</sup> *In the Matter of Electronic Consideration of the Implementation of the Net Metering Act*, Case No. 2019-00256, Order, p. 1 (July 30, 2019).

<sup>2</sup> Harvey L. Reiter and William Greene, *The Case for Reforming Net Metering Compensation*, 37 Energy L.J. 373, 376 (2016).

expensive and unprofitable, even when compensated at full retail rates.<sup>3</sup> Accordingly, there were very few customer-generators willing to adopt these new technologies, and the cumulative cost impact of net metering subsidies was negligible in the early days. By 2015, 43 states, including Kentucky, and the District of Columbia, had mandatory net metering rules for some or all utilities.<sup>4</sup>

Since 2004, Kentucky law has credited customer-generators at the full retail electric tariff rate for energy that they fed back to the electric grid, by “netting” the kilowatt hours (kWh) fed back to the utility against the kWh provided by the utility to the customer (traditional net metering).<sup>5</sup> Moreover, any additional kWh delivered to the utility during the month served to establish a credit bank that was calculated based upon the utility’s full retail rate. This policy created a subsidy for these customer-generators that was paid by all other customers.

While perhaps justifiable in an era where solar development was in its infancy, this subsidy is no longer necessary or sustainable. In recent years, the costs of renewable generation have dropped and the number of customer-generators has grown exponentially. Renewable generation is now familiar and widespread technology—in 2018, renewables provided 17.6% of electricity generation in the United States.<sup>6</sup> Unsurprisingly, the cumulative cost impact of subsidizing renewable generation via net metering is now far greater. Like a number of other states,<sup>7</sup> Kentucky has recognized that circumstances have

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<sup>3</sup> See *Id.* at 379.

<sup>4</sup> *The 50 States of Solar*, p. 13 (2016), available at <https://nccleantech.ncsu.edu/wp-content/uploads/2017/05/50-States-of-Solar-Q4-2015.pdf>

<sup>5</sup> See K.R.S. §§ 278.465, 278.466 (effective until Jan. 1, 2020).

<sup>6</sup> Cara Marcy, *U.S. renewable electricity generation has doubled since 2008* <https://www.eia.gov/todayinenergy/detail.php?id=38752> (Mar. 19, 2019).

<sup>7</sup> *The 50 States of Solar*, p. 8 (2019), available at

[https://nccleantech.ncsu.edu/wp-content/uploads/2019/04/Q1\\_19\\_SolarExecSummary\\_Final2.pdf](https://nccleantech.ncsu.edu/wp-content/uploads/2019/04/Q1_19_SolarExecSummary_Final2.pdf)

(“[M]any states are actively considering net metering successor tariffs.”); see also, e.g., Andy Balaskovitz,

changed since 2004 and that crediting customer-generators at the full retail rate for energy fed back to the grid is no longer a viable policy.

Traditional net metering assumes a false equivalence between a kilowatt hour of energy produced and distributed by the utility and a kilowatt hour of energy fed back to the grid by a customer-generator. It fails to recognize that the full retail tariff rate does not merely reflect the cost of the energy delivered to the customer, but also includes the costs the utility incurs to maintain transmission and distribution at adequate capacity and with the required reliability to be able to guarantee customers on-demand energy at all times of day and night. As described in more detail below, the net metering rate calculation should recognize the full cost to serve these customers. Specifically, these are the costs that a utility continues to incur to maintain sufficient system facilities to serve the net metering customer twenty-four hours a day, seven days a week, notwithstanding the fact that the customer may generate its own energy during certain irregular intervals of time.

In addition to constituting a significant cost subsidy borne by other customers, traditional net metering eliminates any incentive for customer-generators to maximize energy efficiency by aligning their energy consumption with their generation. In the absence of any sort of net metering, a customer is naturally compensated at the full retail rate whenever he consumes a self-generated kilowatt hour, because he thereby avoids procuring that kilowatt hour from the utility. The generation and consumption occur “behind the meter,” so that from the utility’s perspective, the customer’s demand simply

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*Michigan to replace net metering program with avoided-cost tariff*, Energy News Network (Apr. 18, 2018), available at <https://energynews.us/2018/04/18/midwest/michigan-to-replace-net-metering-program-with-avoided-cost-tariff/>; *In re: Review of Policies Related to Customer-Owned Solar Generation and Possible Modification of the Commission’s Current Net Metering Rules*, Dkt. No. R-33929, General Order, pp. 3, 8 (Sept. 19, 2019) (adopting Staff Recommendation to replace net metering with “payment of avoided cost”).

appears reduced. By crediting the customer-generator at the same full retail rate for unconsumed energy fed back to the grid, traditional net metering erases the customer's incentive to select a type of generation that aligns more precisely with his own usage or to pursue options for energy storage.

Recognizing the deficiencies of traditional net metering in today's circumstances, Kentucky passed the Net Metering Act earlier this year to eliminate kWh-for-kWh netting and to instead permit the Commission to establish appropriate compensation rates for customer-generators feeding energy back to the grid.<sup>8</sup> As the Commission considers various approaches to setting such rates (net metering successor rates or post-net-metering rates), it should seek to ensure that any new rate both (1) appropriately accounts for the limitations of customer-generated energy and the costs of maintaining the distribution and transmission systems relied upon by the customer-generator; and (2) incentivizes customer-generators to continually pursue improved energy efficiency.

### **III. DISCUSSION**

#### **Net metering successor rates must ensure that customer-generators bear their share of the costs of generation capacity, energy transmission, and distribution.**

Unlike a kilowatt hour produced by a customer-generator, a kilowatt hour provided by the utility is reliably guaranteed to be available, as the utility is required to maintain a certain amount of capacity at a certain level of reliability that is well above the cumulative customer demand at most points in time. Thus, for example, a net metering solar customer relies on this infrastructure to consume energy on a cold winter morning when his generation output is zero. To remain in balance, the grid must always have an approximate amount of energy being generated, such that the interconnections frequency remains at

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<sup>8</sup> Senate Bill 100, An Act Related to Net Metering (Net Metering Act), effective Jan. 1, 2020.

60.00 Hz.<sup>9</sup> The utility incurs these costs and recoups them from all ratepayers as part of the retail tariff rate. A proper net metering successor rate should not allow customer-generators to avoid their fair share of the cost of the infrastructure on which they—like all customers—rely during the frequent periods when self-generation is unavailable or insufficient. Rather, the Commission should ensure that such rates place a fair amount of the cost of the transmission and distribution infrastructure—including areas where it is strongly reinforced to maintain capacity and reliability—on *every* customer (including customer-generators).

By contrast to the kilowatt hour produced by a utility, a kilowatt hour pushed back to the grid by the customer-generator is neither dispatchable to the grid’s need nor reliably available, which reduces its value considerably. Intermittent renewable generation resources, by their very nature, cannot be relied upon to guarantee a defined capacity at will. And, insofar as renewable generation occurs in certain patterns, those patterns do not always align with either customer or electric delivery system needs. Wind and solar generation tend to peak at night and mid-day respectively, times when consumer demand for electricity is far from its peak.<sup>10</sup>

Thus, for example, PJM Interconnection, L.L.C. (PJM) requires its members to secure sufficient capacity resources to meet predicted energy demand for three years in the future, to ensure that they will be prepared to meet demands in extreme weather conditions. “Capacity Power Resources” must be “capable of sustained, predictable operation that

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<sup>9</sup> Joseph H. Eto, John Undrill, *et al.*, *Frequency Control Requirements for Reliable Interconnection Frequency Response*, p. 5 (Feb. 2018) (prepared for the Office of Electric Reliability, FERC), available at <https://www.ferc.gov/industries/electric/indus-act/reliability/frequency-control-requirements/report.pdf>.

<sup>10</sup> Maheen Bajwa and Joseph Cavicchi, *Growing Evidence of Increased Frequency of Negative Electricity Prices in U.S. Wholesale Electricity Markets*, IAEE Energy Forum, Q4 2017, p. 37.

allows [them] to be available to provide energy” throughout the year.<sup>11</sup> Due to their unreliability, renewable resources only get a fraction of their nameplate capacity value in the PJM capacity market.<sup>12</sup> This is just one instance that demonstrates that renewable generation cannot relieve a utility of any portion of the costs it must incur to be able to meet load and reliability requirements and, correspondingly, has a considerably lower value.

Because a customer-generator does not produce energy reliably or predictably like a utility, the rates at which it is compensated for each kWh pushed back to the grid should be considerably less than retail tariff rates. A customer-generator should not receive a refund (via netting) of the costs of maintaining the entire grid infrastructure that permitted the utility to produce the consumed kWh and receive the self-generated one at a different time. At most, it would be proper to refund only the incremental value of that single additional kWh.

For regional transmission organization (RTO) members, the wholesale market determines the value of energy produced by customer-generators.

Determining the incremental value of a single additional kilowatt hour pushed back to the grid is particularly simple when the utility serving the customer belongs to an RTO. Like a number of other Kentucky utilities, Duke Energy Kentucky procures much of the energy that it delivers to its retail customers on the wholesale market, via membership in an RTO. Duke Energy Kentucky belongs to PJM, along with AEP Kentucky, East Kentucky Power Cooperative, and others. Other Kentucky utilities, such as Big Rivers

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<sup>11</sup> *Intermittent Resource Participation in RPM for 2020/21 and beyond*, p. 2 (Mar. 5, 2018), <https://www.pjm.com/-/media/committees-groups/subcommittees/irs/20180305/20180305-item-10-intermittent-resource-participation-in-rpm.ashx>

<sup>12</sup> See PJM Manual 21, Appendix B (Aug. 1, 2019), available at <https://www.pjm.com/-/media/documents/manuals/m21.ashx>.

Electric, belong to the Midcontinent Independent System Operator, Inc. (MISO), another RTO. RTO member utilities obtain energy from the wholesale market and, likewise, can sell energy to the wholesale market at the constantly fluctuating wholesale market price.

When considering the appropriate post-net-metering rate for an RTO member utility, the Commission must understand that it is the RTO's *wholesale market* that will determine how much value a utility can possibly derive from a kilowatt hour sent back to the grid by a customer-generator. If a utility is able to use the excess kilowatt hour to service another customer, then it avoids having to purchase that kilowatt hour from the wholesale market at the wholesale price. On the flip side, if a utility's customers have no use for the excess kilowatt hour, the utility can sell it back to the wholesale market at the wholesale price. But there is nothing that the utility can do with the excess kilowatt hour that would generate anywhere near the retail tariff rate.

Similarly, the value of the net metering facility capacity, if any, must reflect the market value of the energy. A net metering facility is not dispatchable and Duke Energy Kentucky cannot point to the facility as a resource to meet its Fixed Resource Requirement obligation in PJM. These factors should be considered in establishing a value for the net metering customer's facility.

An appropriate net metering successor rate will motivate customer-generators to continually work to improve the efficiency of their energy consumption.

The difference between an appropriate net metering successor rate—that accounts for the factors discussed above—and the inevitably higher full tariff rate will push customer-generators to improve the efficiency of their energy consumption by aligning their generation with their usage. Even under the new Net Metering Act, a kWh generated and consumed behind the meter will continue to allow the customer to avoid paying the

full tariff rate for that kWh. The customer's only cost for that kWh will be the cost of generation, which continues to drop lower and lower for many renewable technologies. Thus, to maximize their savings, customers will be motivated to minimize their consumption from the grid by selecting those self-generation methods and technologies that align best with their individual patterns of usage.

#### **IV. CONCLUSION**

Duke Energy Kentucky appreciates the opportunity to offer its comments regarding the Commission's future implementation of the Net Metering Act. The Company supports the Commission's intent to develop a broad record to draw upon in future proceedings and is confident that the Commission will fairly account for utilities' costs and other individual circumstances in assessing post-net-metering rates.

Respectfully submitted,



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