

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)	

SUPPLEMENTAL COMMENTS OF DUKE ENERGY KENTUCKY, INC.

Please accept these supplemental comments submitted on behalf of Duke Energy Kentucky, Inc., (Duke Energy Kentucky or the Company) in response to questions asked by the Commission at the November 13, 2019, hearing regarding whether and to what extent the Company relies on solar resources to meet its capacity requirements as a member of PJM Interconnection, L.L.C. (PJM).

To provide the Commission with additional information regarding the existing and potential role of solar with regards to Duke Energy Kentucky's capacity obligations in PJM, Duke Energy Kentucky will discuss two categories of solar resources: (1) rooftop or distribution-connected solar (the Company has three distribution-connected solar facilities with total nameplate capacity of approximately 6.8 MW) and (2) transmission-connected solar. Although the Company currently does not utilize any solar facilities as direct capacity resources in the Company's service area in PJM, the Company believes it will be helpful to explain the possible benefits and risks of utilizing such facilities to meet PJM capacity requirements.

1. Rooftop and distribution-connected solar.

Currently, rooftop and distribution-connected solar do not count directly towards *fulfilling* the Company's capacity obligations in PJM, but they do indirectly reduce the magnitude of the Company's obligation itself. PJM calculates the Company's capacity load obligation based on weather-normalized peak load conditions from the PJM five coincident peak dates and hours during the summer immediately preceding the start of the Planning Year. Because of the location of rooftop or distribution connected solar, they offset the load behind the meter at the times of PJM's coincident peak since the current PJM peak load typically occurs during afternoon hours during summertime periods. Thus, insofar as they cause the Company's capacity obligation to be calculated based on a reduced load, they indirectly reduce the magnitude of the Company's obligation.

However, changes to PJM's methodology could change the effects that rooftop and distribution-connected solar facilities have on PJM's calculation of the capacity obligation. Issues around the use of these (and other distributed energy resources) are currently under discussion in the PJM Distributed Energy Resource Subcommittee, which was established in late 2017 to resolve issues and procedures associated with planning related to distributed energy resources (among other things).¹

2. Transmission-connected solar.

While PJM rules permit members to count transmission-connected facilities towards their capacity requirement, there are significant risks associated with doing so. PJM rules allow counting solar at a class average of 42% to 60% of nameplate capacity²

¹ See generally <https://www.pjm.com/committees-and-groups/subcommittees/ders.aspx>.

² See PJM Interconnection LLC, *Class Average Capacity Factors Wind and Solar Resources*, available at <https://www.pjm.com/-/media/planning/res-adeq/class-average-wind-capacity-factors.ashx?la=en> (accessed November 25, 2019).

or historical average hourly output of summer and peak hours.³ But, in practice, even this discounted capacity is never truly guaranteed to be available. PJM's capacity market recognizes this, and therefore categorically exempts intermittent resources, such as solar, from the must-offer requirement that generally applies to other generation types.⁴

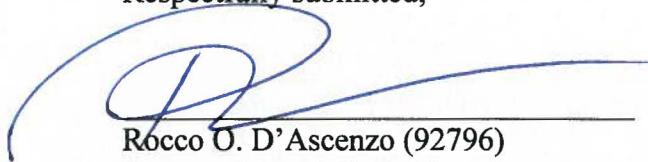
The Company simply cannot rely on the theoretical "capacity" calculated under the above two methods. Consider just one of many possible examples: during summer peak-hour periods, solar consistently has an average expected energy output that is measurably greater than its average expected energy output during winter peak-hour periods. If the Company used solar facilities to meet a portion of its capacity obligation using the second method given above, and then PJM called a Performance Assessment Interval during *winter* peak conditions, the Company would face considerable risk of under-performance and corresponding financial penalties. The Company does not consider such risk exposure acceptable.

Currently, Duke Energy Kentucky does not rely on any transmission-connected solar to meet its PJM capacity requirements. As circumstances evolve, Duke Energy Kentucky will continue to consider whether and how it might be prudent to utilize solar in meeting its PJM capacity obligations.

³ See PJM Manual 18, Section 5.4.1 (July 25, 2019), available at <https://www.pjm.com/-/media/documents/manuals/m18.ashx>.

⁴ PJM OATT, Attachment DD, Section 6.6A.

Respectfully submitted,



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