UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Hybrid Resources	)	Docket No. AD20-9-000

COMMENTS OF THE INDEPENDENT MARKET MONITOR FOR PJM

Pursuant to Rule 211 of the Commission's Rules and Regulations,[1] the order issued in this proceeding January 19, 2021 ("January 19th Order"),[2] the Notice Inviting Comments issued May 26, 2021 ("May 26th Notice"), Staff's Hybrid Resources White Paper issued May 26, 2021 ("White Paper"), and the report filed by PJM Interconnection, L.L.C. ("PJM") on July 19, 2021 ("PJM Report"), Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor ("Market Monitor") for PJM,[3] submits these comments. The Market Monitor's comments address questions three and four from the Commission's notice and PJM's response to those questions.

To take full advantage of the synergies provided by hybrid technologies, to provide flexibility to the grid, and to avoid incentives for gaming, a hybrid resource should operate as a single resource in the market, with uniform metering and operational behavior for all components consistent with meeting all resource obligations.

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1 18 CFR § 385.211 (2021).

2 *See Hybrid Resources*, 174 FERC ¶ 61,034 (2021).

3 Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff ("OATT"), the PJM Operating Agreement ("OA") or the PJM Reliability Assurance Agreement ("RAA").

I. COMMENTS

A. How Hybrid Resources Currently Participate in PJM Markets (Question No. 3).

A hybrid resource should be defined as a single facility in which there are multiple resource types behind the point of interconnection that function together as a single integrated resource, not a set of individual components. A solar plant or a wind plant with a battery (or a CT with a battery) that has a single point of interconnection, a single meter (net output), and functions as a single generation unit with capabilities that are superior to a standalone solar plant, or wind plant, or battery.

A colocated battery and a solar plant with separate metering for each element and the ability to run each element independently for purposes of market participation should not be considered a hybrid unit. That configuration should be considered to be two separate resources: a battery and a solar plant. If organized as a single resource, the operational characteristics and functional economics of the resource are what is important in a resource, not the components that make up the unit. A hybrid resource set up as a single, integrated resource would be able to participate in all of PJM's current markets under the current market rules.

The advantages of a hybrid resource derive from combining complementary characteristics of components in a single resource. If the market design provides incentives for flexible and dispatchable resources rather than inflexible, limited and/or intermittent resources, there will be increased incentives to invest in hybrid resources and improve the efficient, least cost operation of the market. PJM market rules for storage resources need significant enhancement. The rules should provide clear incentives for flexibility both as to the speed and duration of response. Such rules would provide incentives for hybrid resources over standalone batteries for example.

B. How the Capacity Value of Hybrid Resources Is Determined in PJM Markets (Question No. 4).

Properly designed ELCC rules based on realistic behavior and operational assumptions should be applied to all resources, including open and closed loop hybrid resources, and thermal resources. The capacity value of mixed technology resources in the queue (single point of interconnection) should be determined either as the sum of the parts or by the primary fuel type, depending on how the resource elects to participate in the market. If the resource plans to participate as a single unit, as a hybrid resource, the ELCC evaluation should be based on the expected availability, behavior and capability of the integrated components operating and metered as a single resource. If the resource elects to participate as a set of separate independent resources with a common point of interconnection, not a hybrid resource, the ELCC evaluation should be based on the expected availability, behavior and capability of each separate component, operating and metered separately.

When seeking interconnection, resources should have the option to be set up and treated as a single integrated resource for purposes of market participation, a hybrid resource, or as a set of independent resources with a common point of interconnection, not a hybrid resource.

Hybrid resources would require metering at the total unit level for purposes of determining the unified resource's participation in the energy, regulation, reserve and capacity markets.

Non hybrid resources would require metering of each independent element. Such non hybrid resources could not have output and/injections netted for purposes of participation in the energy, regulation, reserve and capacity markets. Such netting would permit inaccurate evaluation of resource performance and potential gaming of resource performance in PJM markets.

For the same reasons, resources should not be allowed to switch between integrated operation and metering, and independent component operation and metering for purposes of market participation.

II. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to these comments as it resolves the issues raised in this proceeding.

Respectfully submitted,

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