

## Distributed Resources Battery Storage in PJM Markets Problem Statement and Opportunity

### Problem Statement

Currently, there is no clear path to market for distributed battery storage systems in the PJM markets.

Distributed resources, such as battery storage, that would like to participate in PJM markets have two entry options: i) Interconnect as a Generation Resource under the normal PJM queue process with associated Wholesale Market Participation Agreement (WMPA) or Interconnection Service Agreement (ISA) or, ii) Demand Response Resource with associated registration and certification process.

When designated as a Generation Resource, and installed on an End Customer's premise, the battery must be installed in front of the retail Electric Distribution Company (EDC) meter in place with the End Customer.

When designated as a Demand Response Resource, the battery must be installed behind the retail EDC meter in place with the End Customer.

It is cost-prohibitive and time consuming for distributed resources to go through the PJM queue process and be designated as a Generation Resource for two specific reasons.

- i. A second utility service line may be required to be installed at the end user facility dedicated just for the distributed resource.
- ii. Costly measurement and verification processes are introduced if the distributed resource intends to provide any service to the end user facility other than PJM market services. In this case PJM requires a mixed wholesale and retail tariff to may be be applied to the distributed resource where power charged by the distributed resource is charged at full retail value and power discharged from the distributed resource is credited at wholesale LMP.

Further, the value a distributed resource can provide to the market is limited when designated as a DR resource. PJM Demand Response regulation certification requires that DR resources will never inject beyond the load meter which limits participation in PJM markets based on minimum instantaneous load during the hour. Distributed Resources are often installed as part of a wider behind the meter system, which includes solar panels that produce more power than consumed by the load on an instantaneous basis. Retail net-metering is a State jurisdictional policy, and allows the solar system (or any other Class 1 Renewable) to produce more power than consumed by the load on an instantaneous basis. PJM Demand Response participation, however, is only permitted when there is instantaneous demand/load even when a retail net metering agreement is in place with the EDC. The provision limits the DR value opportunity based on the amount of instantaneous load, which therefore severely limits the value the DR resource can provide to the market.

### Opportunity

The market for distributed resources is gaining momentum and warrants PJM stakeholder consideration on the most effective and least cost solution to integrate these systems into the PJM market.