

## **Problem / Opportunity Statement**

The PJM Tariff currently contemplates the award of Firm Withdrawal Rights (FWRs) and Firm Injection Rights (FIRs) for two categories of merchant transmission projects: Controllable A.C. Merchant Transmission Facilities and Controllable D.C. Merchant Transmission Facilities. Controllable A.C. Merchant Transmission Facilities are defined as follows:

### **1.6B Controllable A.C. Merchant Transmission Facilities:**

Transmission facilities that (1) employ technology which Transmission Provider reviews and verifies will permit control of the amount and/or direction of power flow on such facilities to such extent as to effectively enable the controllable facilities to be operated as if they were direct current transmission facilities, and (2) that are interconnected with the Transmission System pursuant to Part IV and Part VI of the Tariff.

PJM is interpreting this definition as including only Variable Frequency Transmission technology; according to PJM, projects employing Phase Angle Regulator (PAR) technology cannot qualify as Controllable A.C. Merchant Transmission Facilities and thus are not entitled to an award of FWRs or FIRs.

PARs are widely recognized as having the capability to control the active power flow at the interface between two independent grids or areas. The control of MW flow is achieved by adjusting the phase angle of the voltages at the phase-shifting transformer terminals. PARs technology is currently in use, among other instances, at the interface with NYISO to effectuate a 1000 MW wheeling arrangement between specific points of receipt and delivery pursuant to a transmission service agreement entered into by PJM and Consolidated Edison of New York, Inc.

The current PJM Tariff (as interpreted by PJM) fails to recognize the ability of PARs to control flows by denying such projects that connect a seam any award of FWRs/FIRs and thereby creates an impediment to the development of a class of controllable merchant transmission projects that could efficiently address seams issues between PJM and other ISOs/RTOs. Because PARs projects are not awarded FWRs/FIRs, it will be difficult if not impossible for PARs-based projects to be deemed deliverable to specific points or zones either for sales of capacity or sales of energy. Effectively, without Tariff recognition of deliverability between specific points or zones, PARs projects are unlikely to be commercially feasible even when they have the physical capability to efficiently arbitrage capacity and energy prices across a seam. This concern is not merely theoretical. NYISO recognizes PARs as a flow control technology sufficient to confer Unforced Capacity Delivery Rights (“UDRs”) for transactions into NYISO from neighboring control areas.

Consideration should thus be given in PJM as to whether the current definition of Controllable A.C. Merchant Transmission Facilities should be expanded to include PAR technology. Assuming that determination is made, PJM would also need to develop a methodology to

determine the quantities of FWRs and/or FIRs that would be awarded to a PAR merchant transmission project.

### **Issue Source**

Advice from PJM staff that, under the current PJM Tariff, PAR technology does not qualify for treatment as Controllable A.C. Merchant Transmission Facilities.

### **Stakeholder Group Assignment**

Recommendation: New task force reporting to Planning Committee

### **Key Work Activities**

1. Perform education on current PJM Tariff and Manual provisions concerning awards of FWRs and FIRs to Controllable A.C. Merchant Transmission Facilities and Controllable D.C. Merchant Transmission Facilities
2. Consider whether PAR technology is sufficiently controllable to be deemed Controllable A.C. Merchant Transmission Facilities and, if so, what studies would need to be performed or what other procedures would need to be followed in order to determine the quantities of FWRs and FIRs awarded to a particular PAR project.
3. To the extent necessary to implement the determinations of the task force, draft changes and/or additions to the PJM Tariff, Manuals and/or other PJM governing documents or procedures.

### **Expected Deliverables**

Either (i) a determination that the PJM Tariff should not be modified or (ii) draft language for the PJM Tariff, Manuals and/or other PJM governing documents or procedures for review, comment and approval by the Planning Committee and other higher level PJM committees as needed.

### **Expected Overall Duration of Work**

This work effort can be completed in 3-4 months.

### **Decision-Making Method**

The objective is to use the Tier 1, consensus-based, decision-making methodology (unanimity) on a single proposal (preferred default option), or Tier 2, multiple alternatives.