

## Data Request for CAPSTF

Constellation requests specific model inputs and outputs that will help buyers and policymakers assess hourly-matched clean energy products, regional products, and/or products focused on maximizing emissions reductions.

In presentations before CAPSTF, Constellation, CEBA, and others have noted that that voluntary demand is a significant portion of current clean attribute markets and that corporate customers are increasingly focused on matching carbon free energy with hourly demand. Further, customers and LSEs would like to understand better the emissions impacts of their carbon free energy purchases.

We request that PJM provide the data described below, which will illustrate the proportion of hourly energy demand met with carbon-free energy and emissions impact of hourly-matched procurements in each modelled market design scenario. Such data should include supply, demand, and emissions on an hourly basis (both average and marginal) for the RTO and for zonal and state subregions. Further, we request that PJM calculate the proportion of load met by carbon free resources in each hour for the entire time period covered in the analysis.

### Data reporting

- **Supply**
  - Hourly carbon-free generation by fuel type for the RTO and for each state and market zone
- **Demand**
  - Total hourly demand for the RTO and for each state and market zone
  - Hourly clean energy demand at the level assumed for each clean procurement mechanism tested. This may include RPS as well as any assumptions of existing and forecast voluntary and corporate demand.
    - Hourly shapes for RPS could be represented as a proportion of total hourly demand. For example, if a state's annual RPS is 25%, then clean energy demand can be represented as 25% of total state load in each hour
    - Hourly shapes for voluntary demand may be weighted more heavily to C&I customer shapes than residential
- **Emissions**
  - Hourly average and marginal emissions rates for the RTO and for each zone and state
- **Timeframe**
  - Data should be provided for each period included in PJM's analysis
- **Treatment of ZECs and CMCs**
  - Generation from nuclear units participating in the ZEC and CMC programs should be identified in reported data

### Additional metrics

- For each of the of the clean energy programs represented in the analysis (each state RPS, any voluntary programs, etc), and for each month and year
  - The demand-weighted hourly average match of clean energy supply and demand

- For hours in which clean energy supply is greater than 100% of demand, assume the hourly match is 100% (i.e. exclude any clean energy supply in excess of total demand)
- The minimum hourly match of clean energy supply and demand