Columns Overview

Time and Interval Information:

- `Weekday`: Day of the week (e.g., 4 = Thursday).
- `ON/OFF`: Indicates peak ("ON") or off-peak ("OFF") hours.
- `HE`: Hour Ending, marking the end of the time interval.
- `DATE` and `Date/Time`: Date and timestamp.

Locational Marginal Pricing (LMP) and Congestion:

- `PJMC RT LMP` & `MISO RT LMP`: Real-time locational marginal pricing for PJMC and MISO.
  - the price of electricity at a specific time and location on an electric power grid
- `PJMC DA LMP` & `MISO DA LMP`: Day-ahead locational marginal pricing for PJMC and MISO.
  - the price of energy in a day-ahead energy market. It's based on the energy bids and offers from market participants
- `PJMC RT CONG` & `MISO RT CONG`: Real-time congestion costs.
  - costs associated with supplying power to areas of the electric grid that are experiencing high demand
  - Congestion occurs when there isn't enough transmission capacity to meet the demand for energy.
- `PJMC DA CONG` & `MISO DA CONG`: Day-ahead congestion costs.
  - costs associated with congestion in the day-ahead energy market.

Load (Electricity Demand):

- `MISO RTLOAD` & `PJM RTLOAD`: Real-time electricity load for MISO and PJM.
- `MISO LOAD FC` & `PJM LOAD FC`: Forecasted load for MISO and PJM.
- `Central RT LOAD`: Real-time load for a central region.
- `Central LOAD FC`: Forecasted load for the central region.

Generation Data:

- Gas, coal, nuclear, and hydro generation data for MISO and PJM (e.g., `MISO GAS GEN`, `MISO DA GAS`, `PJM GAS GEN`).
- Generation data refers to information about the amount of electricity produced by different types of power plants or generators, categorized by their fuel type (e.g., coal, natural gas, nuclear, hydro, wind, solar).

Net Load and Imports/Exports:

- `MISO Net Load` & `PJM Net Load`: **Net electricity load for MISO and PJM.**
    - **Net Load is the difference between the total electricity demand in a system and the electricity generation provided by variable renewable energy sources (such as wind and solar).**
    - **represents the amount of demand that must be met by non-renewable (or "dispatchable") power sources like natural gas, coal, nuclear, or hydroelectric plants.**
- `PJM/MISO Net Load:` **Difference in Net Load between PJM and MISO**
- `PJM Ramp Imports` & `PJM Ramp Exports`: **Ramp imports/exports for PJM.**
    - **Ramp Imports: Represent how quickly and by how much electricity can be imported into a system (e.g., MISO) from neighboring systems (e.g., PJM).**
    - **Ramp Exports: Represent how quickly and by how much electricity can be exported from a system to a neighboring system.**
- `MISO Ramp Imports` & `MISO Ramp Exports`: **Ramp imports/exports for MISO.**
    - **Ramp Imports: Represent how quickly and by how much electricity can be imported into a system (e.g., MISO) from neighboring systems (e.g., PJM).**
    - **Ramp Exports: Represent how quickly and by how much electricity can be exported from a system to a neighboring system.**

ACE and Market Comparisons:

- `MISO ACE` & `PJM ACE`: **Area control error values for MISO and PJM.**
    - **real-time measure used in electricity grid operations to ensure the balance between electricity supply and demand within a specific region or Balancing Authority Area (BAA)**
    - **reflects the difference between the scheduled power flows and actual power flows into or out of the area, as well as frequency deviations from the nominal grid frequency**
- `MISO/PJMC DALMP` & `MISO/PJMC RTLMP`: **Difference in day-ahead and real-time LMP between markets.**
    - **a method used in electricity markets to determine the price of electricity at specific locations (nodes) in the power grid.**
    - **represents the cost of delivering an additional megawatt-hour (MWh) of electricity to a specific location, accounting for the cost of generation, transmission, and grid constraints.**
- `PJM/MISO RT LOAD`: **Comparison of real-time loads.**
    - **the amount of electricity on the grid at any given time**

References: