

# **DOMINION ENERGY**

## **Data Center Demand Forecasting Process**

Below is a detailed narrative describing each step of the process to create the Dominion Energy Service Territory (i.e., Dominion LSE) Data Center block load adjustment submission to PJM.

Note, this approach was also used to prepare the Mecklenburg and Rappahannock Electric Cooperative forecasts as well.

- I. The Company determines the 8 largest and/or fastest growing customers to individually model with all other customers combined representing a 9<sup>th</sup> model. The customers selected represent a significant majority of the Company's Data Center load (as of June 2023).
- II. The Company develops a "High" scenario statistical forecast using historical metered data for the 9 customer segments.

Step 1: The Company calculates an initial MWh forecast for the 9 customer segments using linear regression only. This MWh forecast will be adjusted in step 5; this initial step is to provide a forecast for the third demand modeling approach.

Step 2: The Company models industry demand growth using the following method:

- Statistically models demand (MW) using three different approaches.
  - Approach 1: linear regression of demand
  - Approach 2: polynomial regression of demand
  - Approach 3: linear regression of sales (MWh) to demand from Step 1 above.

Step 3: The Company determines which of the three different demand models by customer segment, to use in forecasting future demand.

- One of these three approaches is selected for each of the nine customer segments based on customer provided intelligence.
- Below are examples of customer-provided intelligence used to select a demand modeling approach. While all these items are sources of information for the Company's Data Center forecast, the Company relies upon this information in roughly the following order to validate its forecast:
  - Existing Electric Service Agreements

- Contracts for the construction of electrical infrastructure
- Customer provided forecasting information.
- Customer property purchases for Data Center projects.
- Customer provided information, e.g., layoffs, executive turnover, changes in investor capital funding, etc.
- Substation Engineering Letters of Authorization
- Customer provided growth plans.
- Load letters received.

Note: If none of the 3 approaches align with customer intelligence as to future business opportunities, then an adjusted trend line is assigned, e.g., a flat growth curve. See the **Customer Example** section below for actual customer examples.

Step 4: The Company uses the historical monthly usage of demand to calendarize the forecasted demand values by month within each year.

- The statistical forecasting approach produces a trend line that does not mirror how demand occurs throughout a year (i.e., it is not properly calendarized for weather).
- Thus, the maximum demand within each year is determined and this value is set as the maximum demand in that year for each customer based on each customer's historical demand usage by month.
- Each customer's monthly demand value is calculated based on historical monthly percentage relative to the historical maximum demand of the selected year(s).

Step 5: The Company adjusts the initial MWh forecast (Step 1) using a historical industry average load factor and removes Retail Choice MWhs.

- Once the demand model is selected for each customer segment, that demand is used to create the MWh forecast in total. An industry average load factor is applied to the total demand.
- Retail choice MWhs are then removed as the Company does not sell MWhs to Retail choice customers.

- II. The Company uses historical metered data to develop an aggregate industry forecast that yields a "Low" scenario forecast.
  - The Company sums up the values of the 9 linear demand models (Approach 1).
  - The Company develops a demand forecast using the same linear regression method on the industry total demand as opposed to the 9 individual customer segments. (Approach 1).

- The Company sums up the values of the 9 polynomial demand models (Approach 2).
- The Company develops a demand forecast using the same polynomial regression method on the industry total demand as opposed to the 9 individual customer segments. (Approach 2).
- The Company sums up the values of the 9 sales to demand models (Approach 3).
- The Company develops a demand forecast using the same sales to demand method on the industry total demand as opposed to the 9 individual customer segments. (Approach 3).
- The Company takes the average of the six forecasts identified above to develop the “Low” Scenario demand forecast.
- The Company then applies the same process as described in Steps 4 and 5 above to complete the “Low” scenario.

- III. The Company takes an average of the “High” and “Low” scenario forecasts to calculate the “Medium” scenario which becomes the official submission to PJM.

**Customer Examples:**

As detailed above, if the Company receives industry and/or customer specific information that does not support one of the three demand models, then the Company will not use any of these models. Below are two examples previous years:

- The fastest growing Data Center company in the Company’s service territory ran out of investor funding and started to experience employee and executive turnover. This customer stopped all new projects in development. Using a model based on historical trends did not make sense and the Company selected a no growth model for this customer.
- A large Data Center customer was acquired by another company. The acquired company became a subsidiary operating under its original name but investment in new sites was moved to the acquiring company’s name. Using a model based on historical trends did not make sense and the Company selected a no growth model for the acquired customer.

## **Validation of Existing Data Center Load Forecasting Process**

The Company validates the forecast using the following approaches:

- Comparison to Customer provided business intelligence.
- Validation through existing contracts.
- Growth of metered demand to contracted capacity.
- Customer long-term planning forecasts.
- Comparison of the Company's previous Data Center forecasts to actual results 15 months later. Historically, the Company submitted forecasts to PJM in October. In December of the following year, the Company compares its original forecast to the actual results.

# Data Center Block Load Adjustment Request by Dominion Energy

Official Submission - August 2023

Total Coincident Demand (MW) Including Retail Choice

<u>Year</u>	<b>Dominion Energy Service Territory</b>	<b>Mecklenburg Electric Cooperative</b>	<b>Rappahannock Electric Cooperative</b>
2024P	3,824	218	10
2025P	4,039	341	88
2026P	4,800	541	244
2027P	5,189	719	488
2028P	5,647	837	726
2029P	6,118	858	954
2030P	6,606	858	1,197
2031P	7,085	858	1,486
2032P	7,660	858	1,709
2033P	8,250	858	1,947
2034P	8,919	858	2,129
2035P	9,639	858	2,284
2036P	10,394	858	2,434
2037P	11,225	858	2,558
2038P	12,104	858	2,667
2039P	12,990	858	2,791
2040P	13,911	858	2,916