## NOVEC Data Center Load Forecast

NOVEC is requesting an adjustment to the 2024 PJM Load Forecast to reflect continued expansion of the data center industry within NOVEC service territory. The growth drivers and load profile of data centers are fundamentally different from other types of commercial load. As a result, modelling data center loads on their own, as opposed to part of the broader commercial and industrial sectors, is essential to produce an accurate load forecast.

## Forecasting Process

NOVEC creates data center load forecasts through a structured, systematic process in two phases that incorporates in-depth information on committed data center projects together with fine-scale data on historical load behavior. NOVEC's data center forecasting process uses a "bottom-up" approach: NOVEC develops load forecasts for individual data center buildings that are then aggregated to create campus, substation, delivery point, customer, and system forecasts.

NOVEC staff start the forecasting process with a detailed intelligence gathering and vetting process to identify all current and upcoming data centers within NOVEC service territory. For forecasting purposes, NOVEC includes all data centers that are either in-service, under construction, or in development with signed contracts. NOVEC develops a detailed plan for service for each project and identifies the relevant electrical infrastructure that will be used to serve the load.

In the second phase, NOVEC develops a metered load forecast for each building using a set of econometric models developed by NOVEC staff. The models build on experience and insights accumulated through a decade of data center load research and model development. These models predict expected data center loads using weather and seasonal factors as well as past behavior at the customer, campus, and building-level.

## NOVEC August 2023 Data Center Forecast

In September 2023, NOVEC provided to PJM a monthly coincident peak load forecast for 2023-2038. This forecast was generated in August 2023 using projects identified through the end of July 2023 as well as econometric models estimated with metered load data through the end of July 2023. NOVEC provides this data center forecast to all stakeholders including PJM, Dominion Energy Virginia, as well as NOVEC's own internal budgeting and planning teams.

In the near-term, NOVEC is anticipating unprecedented growth in data center load. Over the next five years, NOVEC expects that data center summer peak loads will grow from roughly 800 MW in 2023 to nearly 4,700 MW in summer 2028. This load growth will be driven by the construction and energization of more than 100 data center buildings within NOVEC service territory. Based on the projects currently in planning and construction, NOVEC anticipates robust growth will continue through late 2020s and into at least the early 2030s.

NOVEC provides a long-term forecast through 2038 to meet PJM's need for a 15-year outlook. However, NOVEC's forecasting process is based solely on committed data center projects with signed contracts; the vast majority of these projects are scheduled for delivery within the next decade. NOVEC does not perform any type of extrapolation or estimation of potential projects that could be developed; the forecast is limited exclusively to actual projects that are currently in development. As a result, load growth slows markedly over the final years of the forecast. This trend reflects the lack of projects with signed contracts for delivery during that timeframe and should not be interpreted as a projection that growth will not or could not continue at a robust pace during that period.  Based on our current project queue, we expect data center loads to grow to more than 8,400 MW in 2033 and 9,200 MW by 2038.

| NOVEC Data Center Coincident July Peak Load Forecast - August 2023 | | |
|---|---|---|
| Actual | 2023 | 808 |
| Forecast | 2024 | 1,000 |
| | 2025 | 1,449 |
| | 2026 | 2,247 |
| | 2027 | 3,239 |
| | 2028 | 4,696 |
| | 2029 | 5,959 |
| | 2030 | 6,905 |
| | 2031 | 7,518 |
| | 2032 | 8,025 |
| | 2033 | 8,429 |
| | 2034 | 8,757 |
| | 2035 | 8,953 |
| | 2036 | 9,046 |
| | 2037 | 9,121 |
| | 2038 | 9,201 |

Note: Forecast developed by NOVEC August 2023 based on projects identified through the end of July 2023 and econometric models estimated with metered load data through the end of July 2023.