



# Peak Load Contributions

Dayton Power & Light is a member utility of the PJM Interconnection, LLC. PJM is responsible for the day-to-day operation of the largest centrally dispatched electric system in North America. PJM's foremost responsibility is the safe and reliable operation of the transmission system and ensuring the reliable supply of energy from generating resources to wholesale customers. To ensure reliable supply and transmission, PJM requires that each Load Serving Entity (LSE) serving retail load within PJM be responsible for its portion of the supply and the transmission resources required, as described below. These shares are the aggregated capacity peak load contributions and the network transmission peak load contributions allocated to each electric account and to the electricity supplier of that account.

## Capacity Peak Load Contribution

As required by the PJM Reliability Assurance Agreement (RAA), the PJM Office of the Interconnection (PJM OI) calculates the PJM zonal capacity obligation. Dayton Power & Light is assigned a capacity obligation for its zone. DP&L is required to calculate and report to PJM daily the capacity peak load contribution data, aggregated by retail supplier, for its zone.

In accordance with the PJM RAA and PJM rules and procedures, DP&L will calculate the system capacity peak load contribution for each LSE on an annual basis. After the end of a summer period, PJM will identify the five highest weather normalized PJM system coincident load hours that occurred on different days over the period from June 1 through September 30 (see PLC Peak Hours). The LDC-specific zones will identify the actual zonal loads associated with these five hours. Each LDC-specific zone will reconcile these five different hours back to the one hour weather normalized, system coincident zonal peak load obligation. The consequent peak load contributions will be calculated as an average over these five hours. Each account's PLC will be updated on a yearly basis in accordance with PJM rules and procedures and become effective June 1 of the year based on peak hours of the previous summer.

## Network Transmission Service Peak Load Contribution (1 CP Load)

Each local distribution company within PJM has a network transmission service peak load contribution requirement. To allocate fairly the LSE's daily requirement to suppliers, network transmission service peak load contributions (transmission PLCs) are determined. In accordance with the Open Access Transmission Tariff (OATT) and PJM rules and procedures, DP&L will calculate annually a transmission PLC "ticket" for each LSE that is effective for a year beginning January 1. The methodology DP&L uses to allocate this is commonly referred to as the "1CP" methodology. At the end of each

calendar year, PJM will identify the highest unrestricted load hour that occurred in the Dayton zone during the summer period and determine the load associated with each LSE at that particular point (see PLC Peak Hours). Each LSE's transmission PLC will be updated in accordance with PJM rules and procedures. This load is based on a historical value that is not weather normalized from the period of November 1 to October 31 of the preceding year.

## Calculating Annual Capacity Peak Load Contributions

Peak load contributions are typically processed differently for the two metering types: (1) interval metered accounts and (2) non-interval monthly metered accounts. The capacity peak load contribution for each account is the average of the account's hourly peak load contributions for the five hours designated by PJM as peak capacity hours.

- **Interval metered accounts**—Accounts that have meter usage data collected in 30-minute intervals during the billing cycle. Interval data will be processed by DP&L's MV-90 meter data translation software system. The MV-90 meter data are then transferred to a settlement system in 60 minute intervals.
- **Monthly kWh (non-interval) metered accounts**—Accounts that have metered kWh usage for the billing cycle.

The derivation of the peak load contributions consists of four steps:

1. Determine the unreconciled peak loads.
2. Reconcile the peak loads.
3. Calculate the obligation scaling factors.
4. Derive each account's annual capacity peak load contribution.

### Step 1: Determine Unreconciled Peak Loads

For each profiled segment and interval metered account, an initial peak load estimate is obtained based on data metered at the customer's premise. Premise level loads are adjusted for the electrical losses that occur in DP&L's transmission and distribution system. Loss factors vary by voltage class and may be found on the Supplier Website. The loss-adjusted load estimates are termed unreconciled peak loads since in total they may not exactly equal the system load for that hour, and are therefore reconciled or scaled to the known system load.

For each peak hour used to calculate PLCs the unreconciled peak is obtained as follows:

**Interval metered accounts:** the load for each interval metered electric account is extracted, and adjusted for losses.

**Non interval metered accounts:** the average peak load for each profiled segment is obtained from the statistical sample of each profiled segment. (See Generic Load Profiles on Supplier Website.) This aggregate peak load is allocated to each account in the

segment by applying an account-specific “usage factor”. The usage factor represents the ratio of the metered usage for the account to the average usage of the profiled segment over the same period. The total unreconciled peak load for the segment is the product of the peak load for the segment, the loss factor for the segment, and the sum of the usage factors for the segment.

## Step 2: Reconcile Peak Loads

Unreconciled peak loads are then scaled to DP&L’s total zonal load for each of the five hours included in the capacity PLC calculation.

An imbalance (“unaccounted-for-energy”) is computed as the difference between the total unreconciled load and DP&L’s total zonal load for each zonal peak hour. This hourly imbalance is then apportioned to each account and each profiled segment in proportion to its unreconciled load.

## Step 3: Calculate the Obligation Scaling Factors

**Obligation scaling factor:** The PJM weather normalized coincident peak for the Dayton zone divided by each of the 5 Dayton total zonal peak loads.

## Step 4: Derive the Peak Load Contributions for each Account

**Non interval and interval metered accounts:** The peak load contribution for each account is the average of the 5 scaled peak loads for that customer. For each hour, the scaled peak load is the product of the obligation scaling factor times the reconciled peak load for that customer.

## Calculating Network Transmission Peak Load Contributions

The transmission peak load contribution for each account is calculated similarly to the capacity PLC’s. However, a single peak hour is designated by PJM as the Dayton zonal peak. For each customer account, the network service peak load is the reconciled load during the PJM designated hour.

## Reporting of Capacity and Transmission Peak Load Contributions

DP&L calculates the sum of the PLCs for each account served by the retail supplier. The supplier PLCs are then scaled proportionally to the DAYTON zonal obligation (reported to PJM annually). As of January 1, 2017, the Daily Zonal Scaling Factors are calculated by PJM and published to its website. Historically, DP&L calculated the Daily Zonal Scaling Factors and published them to DP&L’s Supplier Website. DP&L computes the supplier PLCs and submits them to PJM’s eRPM system at least 36 hours before the operating day. DP&L may correct submitted values up to 12 noon the next business day after the operating day.

## Frequently Asked Questions

- How is the Peak Load Contribution (PLC) calculated for an end-use customer?

The Peak Load Contribution (PLC), or Capacity Load Obligation, is calculated for all customers based on their contributions to the five PJM coincidental peak hours from the prior summer period. An end-use customer's actual interval or profiled load value is adjusted by its respective loss factor and scaling factor (to the weather-normalized Dayton peak value reported by PJM) for each of the five hours. The final PLC ticket for that customer is the average of the scaled values. Prior to applying the scaling factors, unaccounted-for-energy (UFE) is allocated only to non-interval profiled load. The five capacity reconciliation scaling factors for each delivery year will be posted to DP&L's Supplier Website.

- How is the Network Service Peak Load (NSPL) calculated for an end-use customer?

The Network Service Peak Load (NSPL), or Transmission Load Contribution, is calculated for all customers based on their contributions to the single Dayton peak hour from the prior summer period. An end-use customer's actual interval or profiled load value is adjusted only by its respective loss factor. Unaccounted-for-energy (UFE) is allocated only to non-interval profiled load.

- How often are customers' capacity and transmission tickets calculated?

The tickets are calculated once per year in November or early December. The transmission delivery year begins on January 1st. The capacity delivery year begins on June 1st.

- How does DP&L assign PLC and NSPL tickets to new customers?

As new accounts are opened throughout the delivery year, the new accounts will be assigned a default ticket value based on the average of the tickets calculated for all other accounts assigned to the customer's default load profile.

- How will a customer's name change affect the assignment of PLC and NSPL tickets?

A typical name change to an account will not affect the status of its assigned PLC and NSPL tickets. However, DP&L will close an account and open a new one when a name change is also accompanied by a change to

the customer's federal tax ID number. This event is considered a change to the customer's contractual status and means that the new account will be assigned a default ticket value based on the average of the tickets calculated for all other accounts assigned to that customer's default load profile.

- Is it possible to change a customer's assigned capacity or transmission tickets after they have been calculated?

Yes. If a customer disputes an estimated amount or conditions dictate a change to a calculated amount, the value may be edited after agreement is reached among all parties.

- Does the end-use customer's PLC calculation include the following components calculated by PJM: Final Zonal RPM Scaling Factor and/or the Forecast Pool Requirement?

No. Those factors are used by PJM to calculate the suppliers' Daily Zonal UCAP Obligations. Below is the calculation used by PJM:

Daily Zonal UCAP Obligation = PLC (aggregate total by supplier) \* Final Zonal RPM Scaling Factor \* Forecast Pool Requirement