

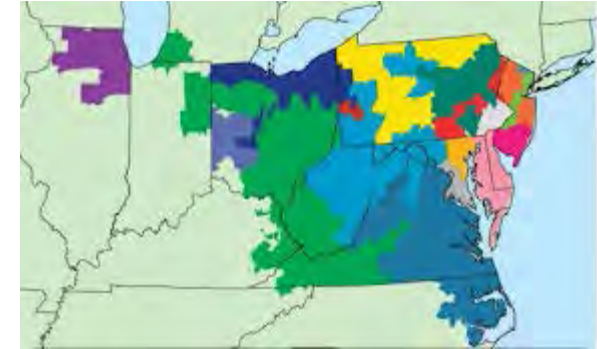
TO Load Forecasting: Bus by Bus

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April 13, 2017

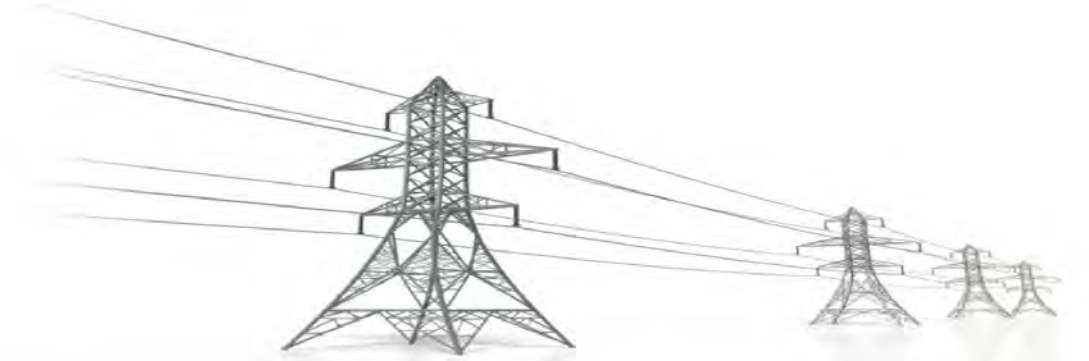


The following is based on discussions with numerous PJM Transmission Owners. It is meant as a general summary and may not accurately reflect the specific process of any given Transmission Owner.

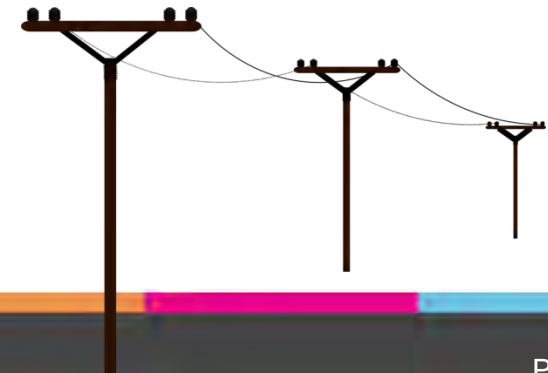
- PJM
 - RTO and TO seasonal peak and energy
 - Energy efficiency, distributed solar, etc.
 - Diversity factors
- Transmission Owners
 - Bus loads
 - TO seasonal peak and energy
- Bus loads are scaled proportionally to achieve PJM load forecast



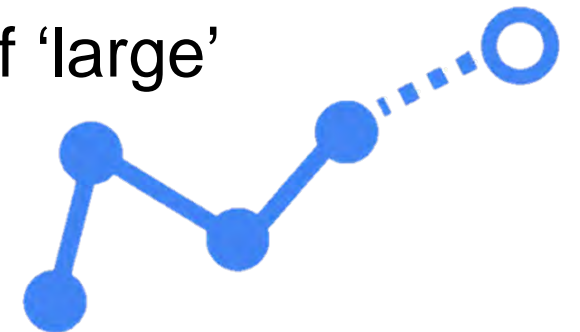
- Distribution planners annually provide load forecast ~5 year horizon
 - Load at each delivery point (feeder or substation)
 - Typically corresponds to one load in powerflow case
 - Forecast provided in fall



- Summer peak load on each substation or feeder (delivery point) recorded annually
 - Adjusted for weather
- New loads (with signed service agreement) added
 - Addition to existing delivery point, or new delivery point
- All delivery points are scaled to company load forecast value
 - Includes future growth rate



- New loads go through interconnection process
 - Identify direct connection upgrades, metering, protection, etc.
- Added to load forecast after service agreement is executed
- Typical request to in-service time is 12-18 months
- Large new loads may be passed to transmission planners ahead of annual update
 - No requirement to do so, or consistent definition of 'large'



- No requirement for notification of retiring load
- Small load drops picked up in next annual peak measurements
- Large load drops may be passed to transmission planning regularly, but no consistent cutoff for 'large' load
- Very large customers are surveyed regularly to determine expected increases/decreases in load
 - responses are voluntary and non-binding



- At a high level processes are very similar
- Handling of seasonal loads
 - Some use same bus distribution for summer and winter
 - Some develop seasonal load forecasts for all delivery points
 - Some have seasonal forecasts only for certain delivery points