TO Load Forecasting: Bus by Bus

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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 vs TO Load Forecasting

- **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
Distribution Planner Perspective

- 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

• 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’
Load Deactivations

- 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
Differences Between TOs

- 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