

Load Growth in PJM

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What do you think of when you hear “***Load Forecast***”?

Long-Term Forecast

- Forecasted peaks for each year for the next 15 years
- Performed by Resource Adequacy Planning

Short-Term Forecast

- Forecasts every hour for the next seven days

Very Short-Term Forecast (Five-Minute Forecast)

- Forecasts every five minutes for the next six hours

PJM independently produces an annual load forecast that is used in transmission planning and markets analysis.



Planning horizon is 15 years.

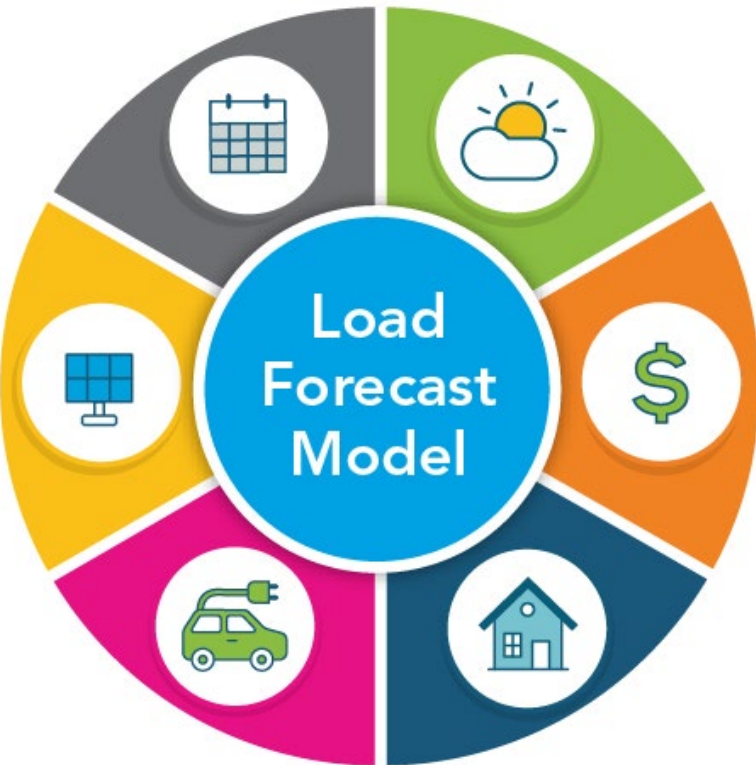


Forecast is based on a multivariable regression model.



Forecast is reviewed with stakeholders and published each December/January.

Model changes and requested load adjustments are reviewed throughout the year with PJM's stakeholder groups – Load Analysis Subcommittee and Planning Committee.



Weather Conditions

- Weighted-average temperature, humidity and wind speed
- Cooling and heating degree days
- 30+ weather stations across PJM



Energy Efficiency/End-Use Characteristics

- Cooling equipment saturation and efficiency
- Heating equipment saturation and efficiency
- Other equipment saturation and efficiency



Economic

- Real personal income
- Employment
- Real industrial output
- Households
- Working-age population



Calendar/Solar Data & Electric Vehicles

- Day of week
- Month
- Weekends/holidays
- Distributed solar generation
- Plug-in electric vehicles



Electric Distribution Companies (EDCs) and Load Serving Entities (LSEs) are encouraged to provide PJM with information about large changes that may not be captured in the forecast process (“Large Load Adjustments”).

We view requests through the lens of:

Is the request significant?

PJM reviews the magnitude or percentage of a zone’s load.

Is there risk of double counting?

- PJM reviews economic forecast to determine if load shift is captured.
- PJM obtains hourly load history to isolate impact and avoid double counting.



PJM Electricity Demand Growth

Load (MW)

195,000

185,000

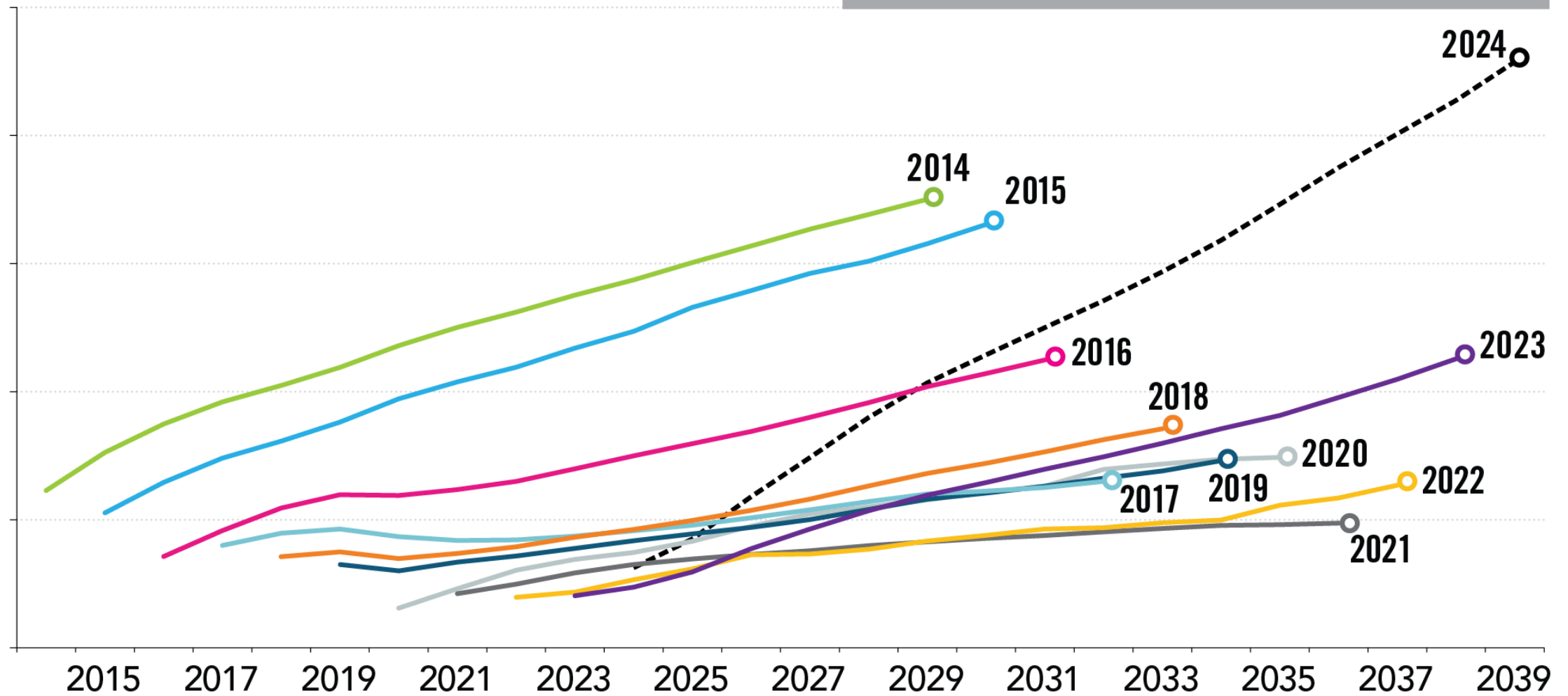
175,000

165,000

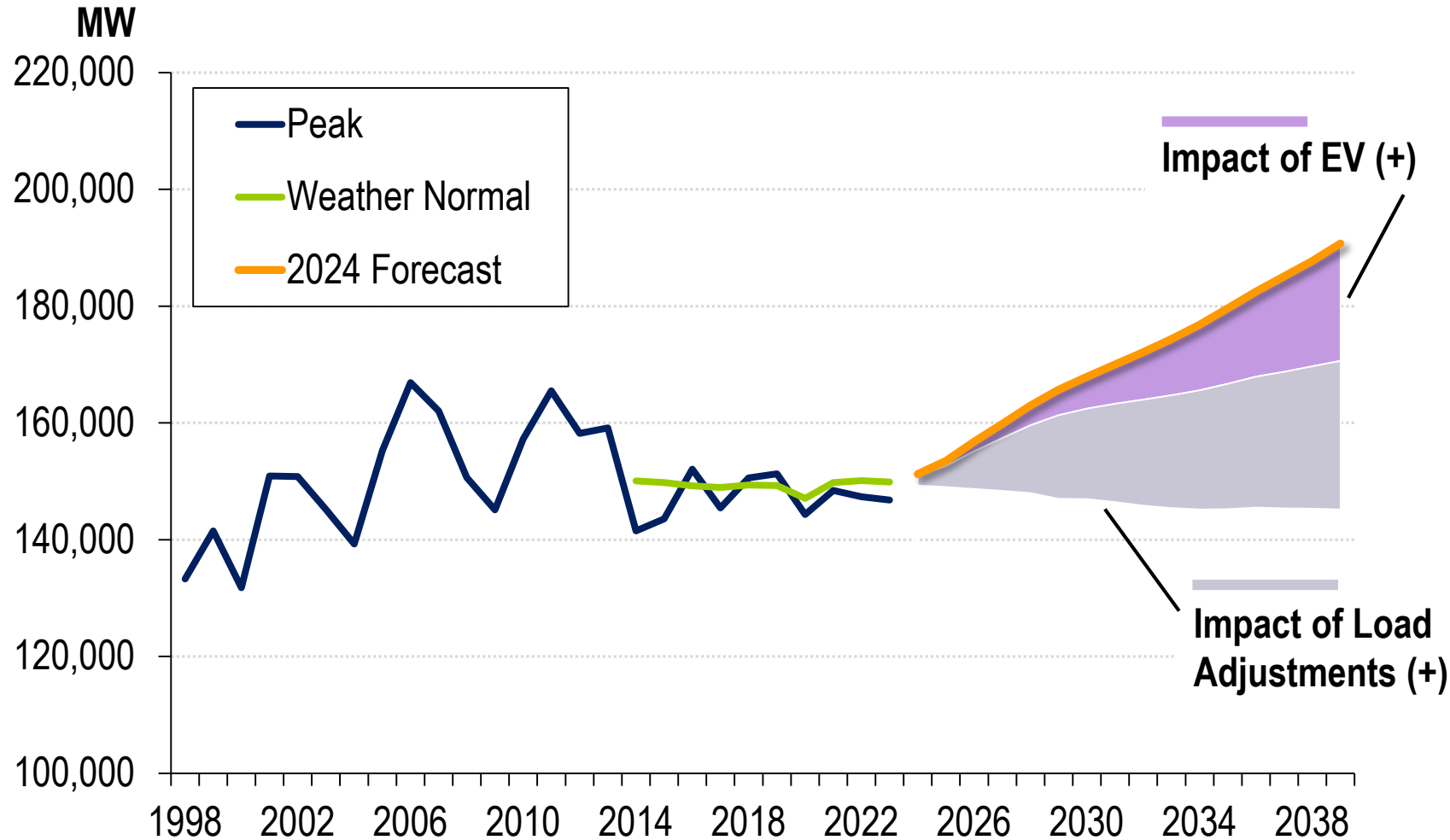
155,000

145,000

PJM RTO Summer Peak Demand Forecast



Impact to Summer Forecast (+) Electric Vehicles and Large Load Adjustments

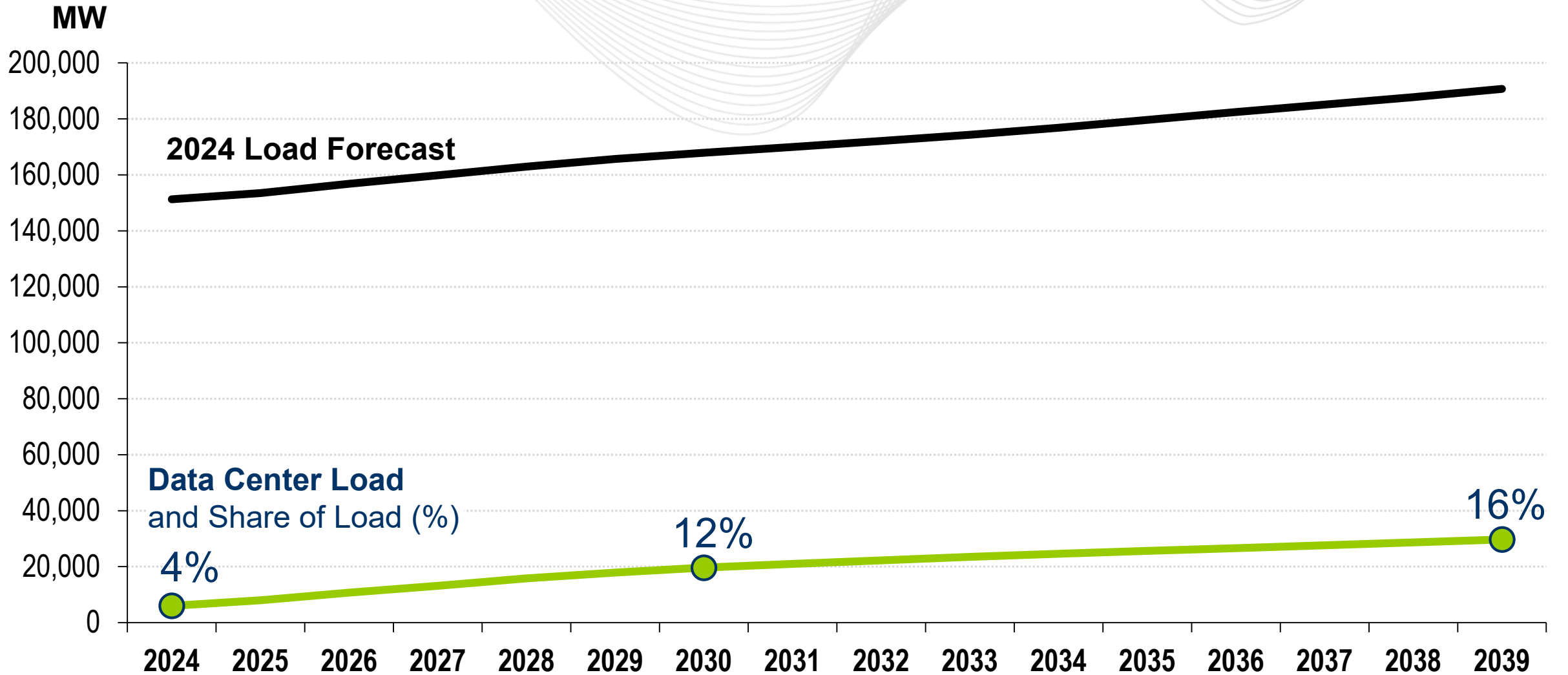


Electric vehicles and large load adjustments **support** load growth.

- Without these trends, 15-year average load growth would be 1.8 percentage points lower (1.6% vs -0.2%).
- The growth drivers are split roughly 60/40 between large load adjustments and electric vehicles, respectively by the end of the forecast.



2024 Load Forecast – Summer Peak (Megawatts)



- **Load Forecast Development Process**

<https://www.pjm.com/planning/resource-adequacy-planning/load-forecast-dev-process>

- **Supplement provides an overview of 2024 Load Forecast inputs and assumptions:**

<https://www.pjm.com/-/media/planning/res-adeq/load-forecast/load-forecast-supplement.ashx>

- **Load Analysis Subcommittee**

<https://www.pjm.com/committees-and-groups/subcommittees/las>