

NYISO

Performance Metrics

Q1 2019

Updated April 2019



Introduction



are core to our mission and role in managing New York's power grid and energy markets

- This report was established to inform NYISO stakeholders, market participants, government officials and the public at large on key ongoing metrics measuring the NYISO's performance on:
 - Customer satisfaction
 - Dispatch reliability
 - Day-ahead load forecasts
 - Managing out-of-market costs
 - Emissions trends
 - Annual forecast accuracy

Customer Satisfaction Index (CSI)

- The NYISO utilizes Siena College Research Institute to perform independent surveys of our Market Participants to measure their satisfaction and our performance
- The satisfaction score represents 60% of the CSI
- The assessment of performance represents 40% of the CSI
- CSI scoring key
 - 86.0 superior
 - 84.5 target
 - 83.5 threshold

Q1 Customer Satisfaction Index: 84.7

The 2019 enhanced “Customer Satisfaction & Assessment of Performance” program independently measures two important aspects to the NYISO: customer satisfaction & realizing our mission through our performance.

Satisfaction Score



Assessment of Performance



Customer Satisfaction Index

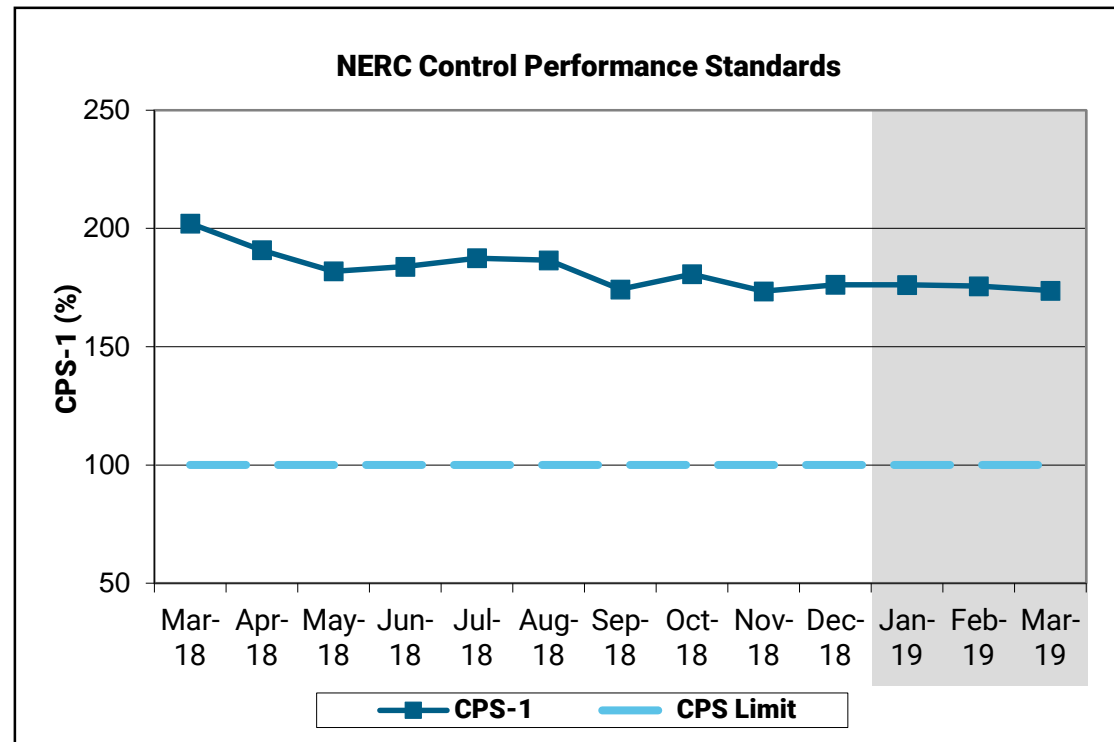


Dispatch Reliability

- **The NYISO** operates New York's high-voltage transmission grid to the nation's strictest set of reliability standards, which include nearly 1,000 requirements designed to promote reliability for New York's consumers. We are responsible for continuously balancing the supply of power resources with consumer demand for electricity.
- **North American Reliability Corporation (NERC) Control Performance Standards (CPS)** measure grid operator performance in balancing resources and demand.
 - **100%** is the minimum passing score
 - **200%** is the upper bound of the standard

Q1 ranged between 174-176% of Control Performance Standards

The NYISO exceeded NERC's reliability standard during the period

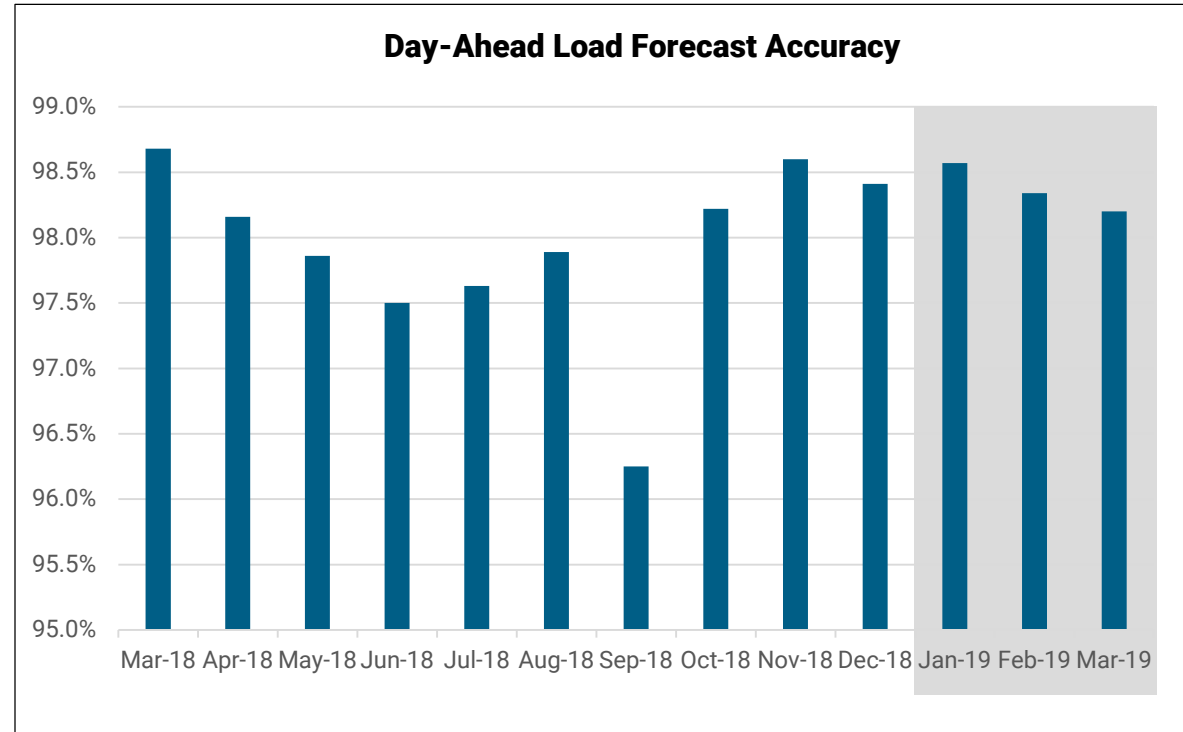


Day-Ahead Load Forecast

- **The NYISO** conducts Day-Ahead energy markets to support having the necessary resources available to meet reliability.
- **The NYISO** measures the accuracy of our Day-Ahead Market forecasts to actual, in-day consumer demand.
- Accurate forecasts result in **market stability** and **grid reliability**

Q1 accuracy range: 98.20-98.57%

Average absolute percent difference of day-ahead forecast versus actual demand



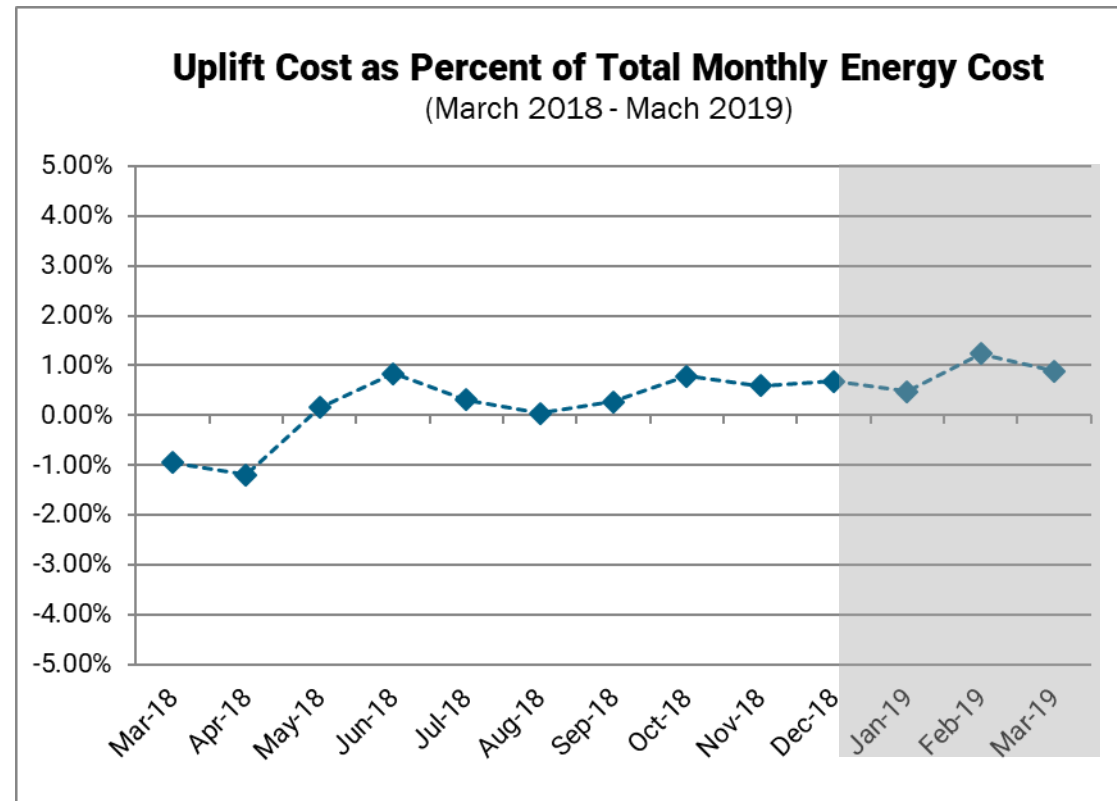
Day-Ahead Average Hourly Accuracy %

Average across all hours of the month of the absolute value of the difference between actual load demand and the Day-Ahead forecast load demand, divided by the actual load demand, subtracted from 100%.

Managing Out-of-Market Costs

- Because actual demand for electricity cannot be perfectly predicted, out-of-market costs (known as “uplift”) are sometimes incurred in order to maintain reliable operation of the grid.
- While always focused on reliability, the NYISO’s market rules and grid operations seek to minimize uplift costs
- **A measure of market efficiency is when uplift costs make up a small portion of total costs.**

**Q1 uplift costs range:
.47% to 1.24%**



Emissions Trends

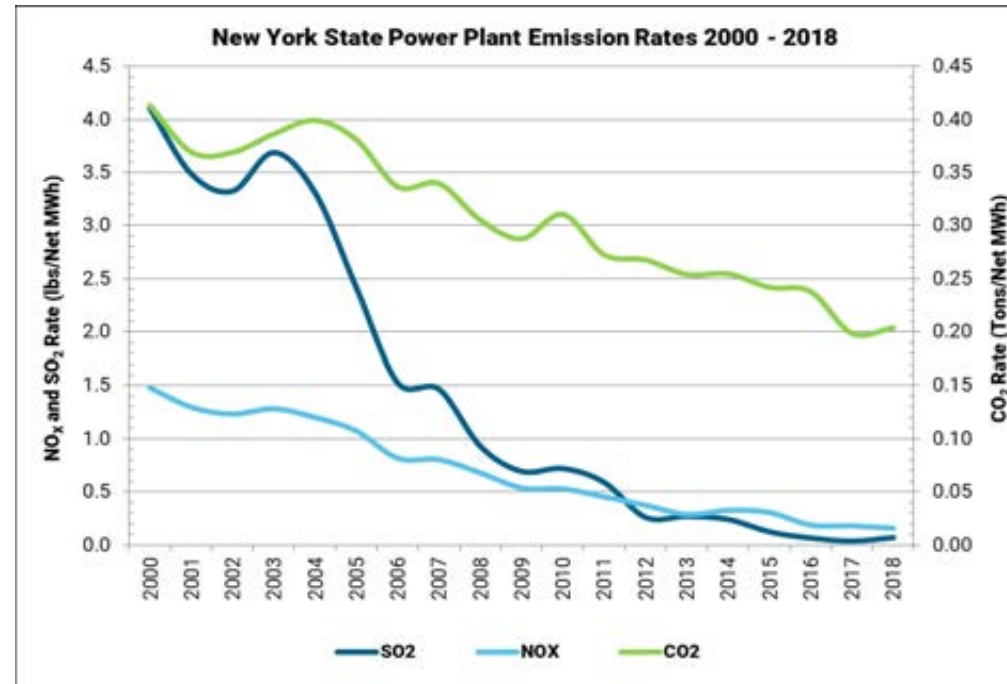
- In conjunction with rigorous air quality standards, New York's competitive markets for wholesale electricity have led to cleaner, more efficient generation.
- Efficiency results in reduced emissions

New York Emission Rates from Electric Generation: 2000-2018

98% less Sulfur Dioxide, which is a contributor to acid rain pollution

89% less Nitrogen Oxide, which is a contributor to ozone pollution

51% less Carbon Dioxide, a greenhouse gas



Sources: USEPA Air Markets Program Data USEIA Electric Power Monthly
* All 2018 Data is Preliminary

Annual Summer Peak Forecast Accuracy

- In addition to preparing hour-by-hour forecast of the Day-Ahead Market, the NYISO produces long-term forecasts to address electricity needs over the coming year and beyond.
- **Accurate load forecasting is essential to grid reliability and the efficiency of markets and is a key element of the NYISO's planning studies**

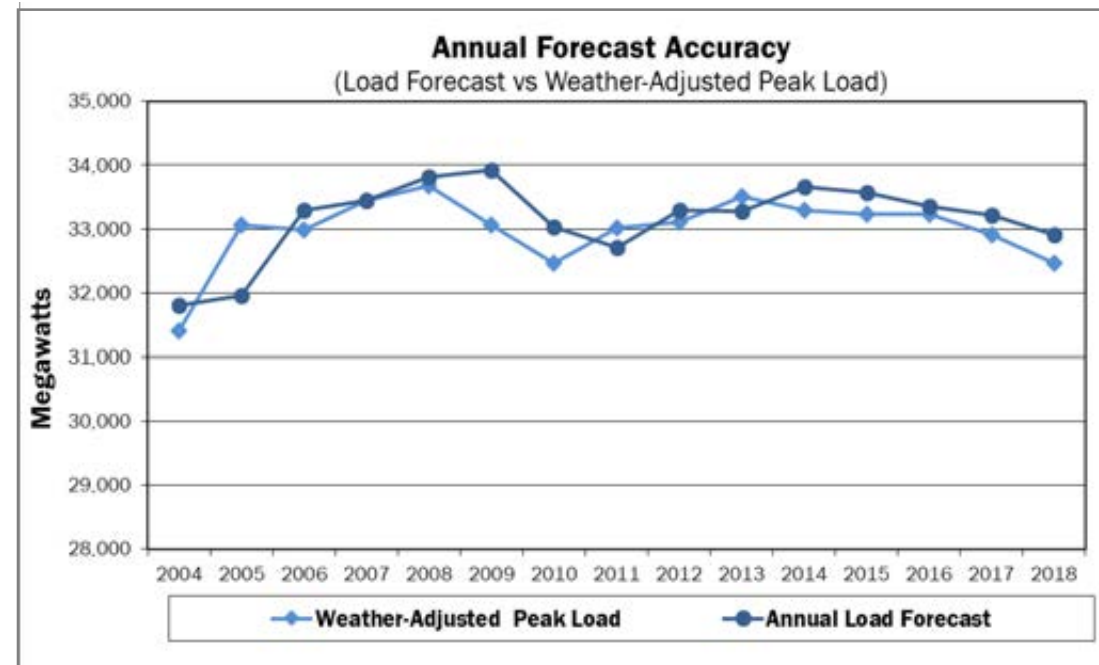
2018: 1.3% difference

Average absolute percent difference of forecast versus actual demand

0.89%
difference
last 3 years

0.97%
difference
last 5 years

1.14%
difference
last 10 years



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