

## Experiences Dynamic Line Rating (DLR) Pilot Update

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## AVANGRID Dynamic Line Ratings Overview

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- In 2019, New York State passed the Climate Leadership and Community Protection Act (CLCPA) with the goal of 70% renewable electricity by 2030 and 100% by 2050
- Dynamic Line Rating (DLR) optimizes the current-carrying capacity of transmission lines based on near real-time environmental conditions. By using sensors and software to adjust for factors like wind speed, wind direction and temperature, DLR could play an important role in:
  - Improving system reliability
  - Reducing cost of congestion
  - Enabling faster integration of renewables
- Avangrid (NYSEG) partnered with LineVision via NYSERDA PON 4393 in September 2022 to pilot DLR on two 230 kV transmission lines (67 and 85), which are part of the network, transmitting over 500 megawatts of wind generation from western to eastern New York, with limited capacity often leading to periodic curtailment.



## Line 67 & Line 85 Overview

**Length:** 11.4 miles

**Voltage:** 230 kV

**# Segments:** 1 (no subs/taps)

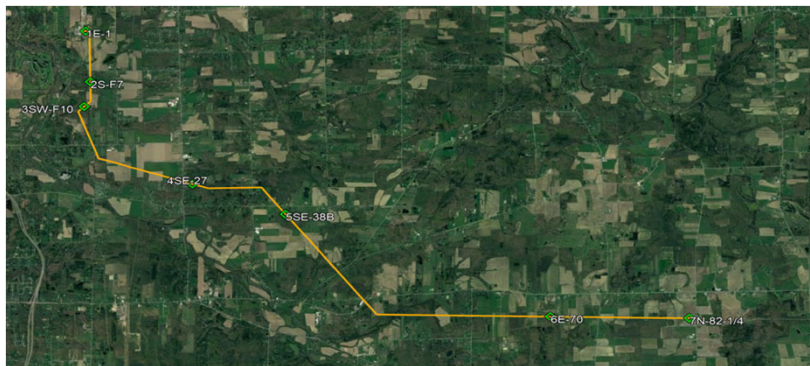
**Construction:** Single Circuit  
(metal lattice towers > wooden H-frames)

**Insulators:** Suspension

**Conductor:** ACSR

**MOT:** 95°C

**LineRate DLR:** 7 LineVision sensors



**Length:** 11.1 miles

**Voltage:** 230 kV

**# Segments:** 1 (no subs/taps)

**Construction:** Single Circuit  
(wooden H-frames)

**Insulators:** Suspension

**Conductor:** ACSR

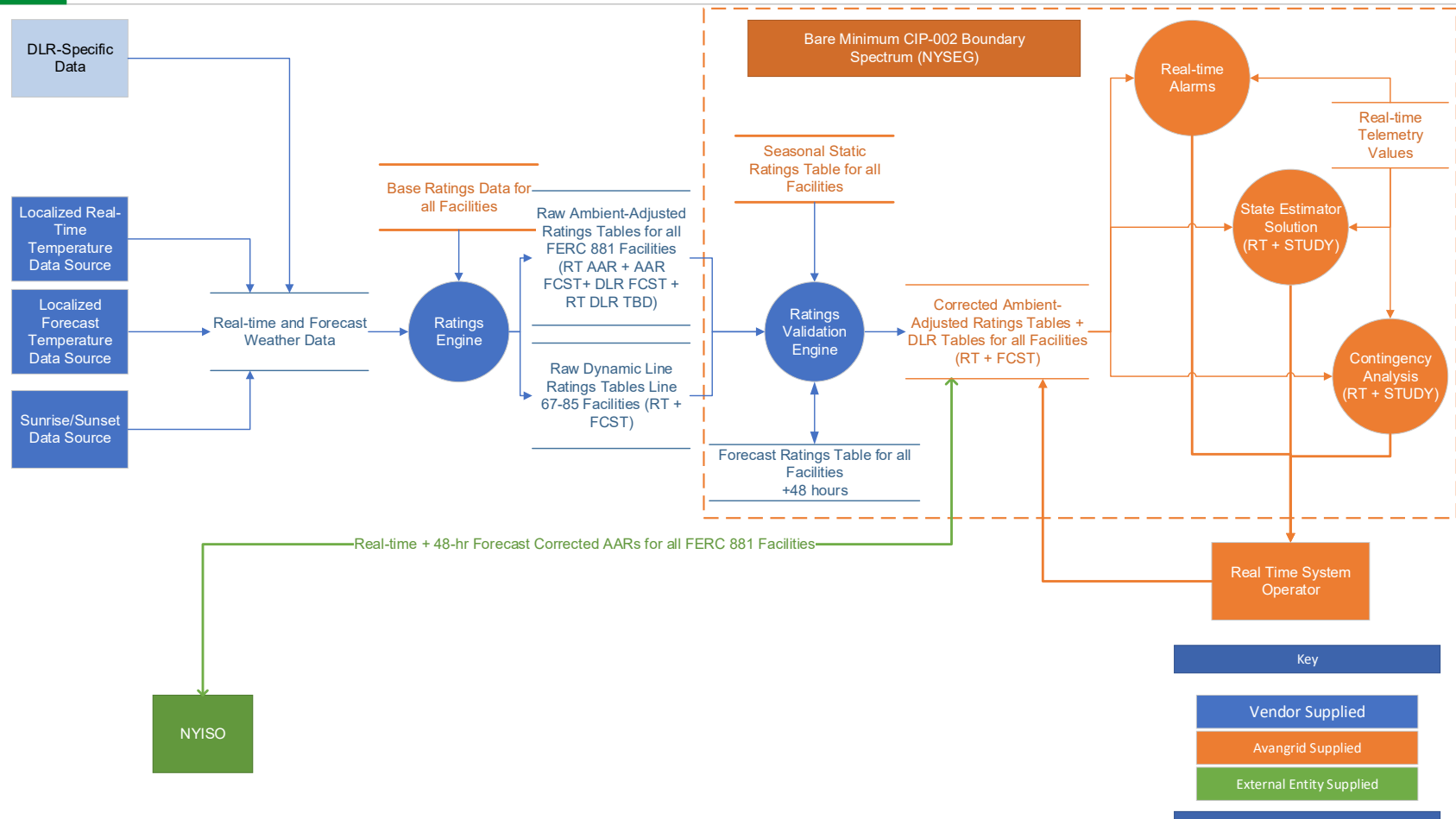
**MOT:** 95°C

**LineRate DLR:** 6 LineVision sensors





# Planned DLR Integration into NYSEG Energy Management System



## Summary on DLR Pilot



- **Ratings Architecture:** Avangrid has designed an architecture to incorporate DLR into its Energy Management System (EMS). This will involve integrating non-contact sensors/contact sensors and real-time data analytics to dynamically adjust line ratings based on current conditions.
- **Learning from Application:** The insights gained from DLR have been applied to enhance Ambient-Adjusted Ratings enhancement (AAR) within the EMS. This includes adjustments to both the EMS and future AAR software to improve throughput capabilities.
- **Current Status:** Sensors deployed and the non-operational DLR output can be viewed via vendor's portal

Line	Average Seasonal Rating	Average Dynamic Line Rating	Average % Increase (DLR vs Seasonal)	% Time DLR greater then seasonal ratings
Line 67	1,196 A	1,431 A	20%	90%
Line 85	1,188 A	1,350 A	14%	81%

**Note:** The ratings results are based on November 5, 2024 – November 25, 2024

- **Next Step:** Pilot Transition to Operations

