

# 2024 RNA

# Preliminary Schedule

---

**Ross Altman**

Senior Manager, Reliability Planning

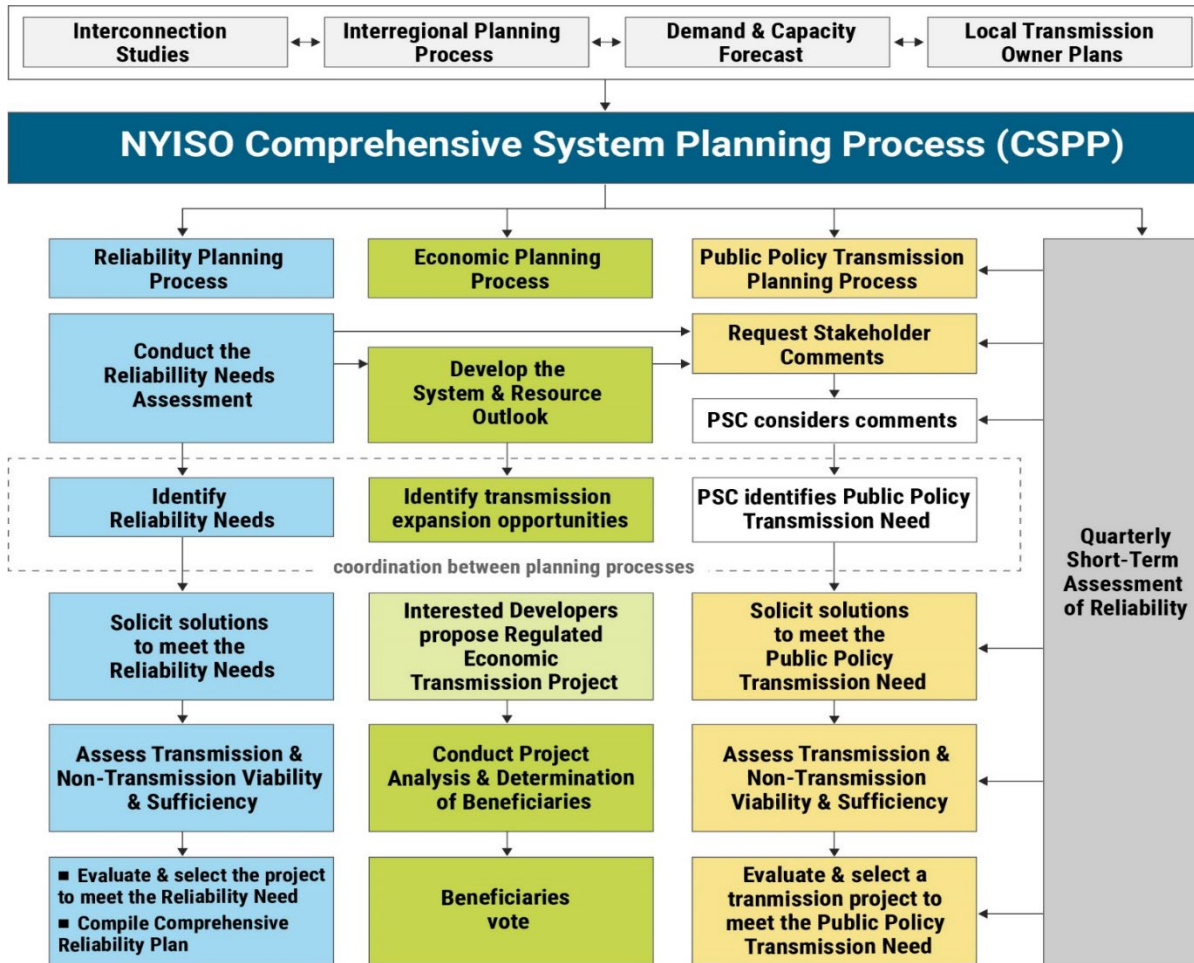
**ESPWG/TPAS**

March 01, 2024

# Agenda

- **Reliability Planning Process**
- **2024 RNA Preliminary Schedule**
- **Appendix: Review of EFORd Assumptions in Margin Calculations**

# Reliability Planning Process

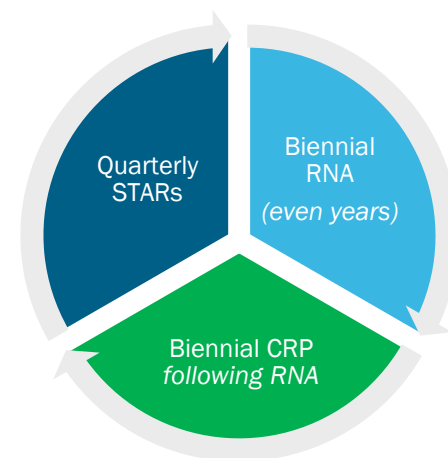


# Reliability Planning Objectives

- Identify Reliability Needs on the Bulk Power Transmission Facilities pursuant to Reliability Criteria (i.e., NERC, NPCC, NYSRC)
- Identify, through the development of appropriate scenarios, factors and issues that might adversely impact the reliability of the bulk system
- Provide an open and transparent process whereby solutions to identified needs are proposed, evaluated on a comparable basis, selected (as applicable), and implemented on a timely manner to ensure the reliability of the system
- Provide an opportunity first for the implementation of market-based solutions while providing for the reliability of the bulk system
- Coordinate the NYISO's reliability assessments with local utilities and neighboring control areas

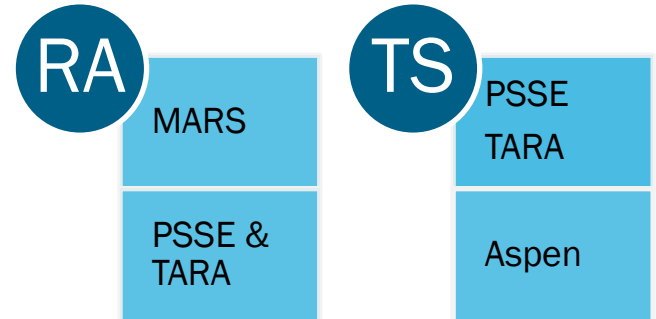
# Reliability Planning Studies

- **Short-Term Assessments of Reliability (STARs)**
  - Conducted quarterly in direct collaboration with Transmission Owners
  - Five-year study with a focus on addressing needs arising in the first three years
- **Reliability Needs Assessment (RNA)**
  - Conducted biennially to identify long-term Bulk Power Transmission System (BPTF) reliability needs in years 4-10 on Base Case
  - Considers Transmission Owner LTPs, proposed generation, and proposed transmission that meet inclusion rules, demand forecasts, and updates to the system
  - If Reliability Needs are identified, the NYISO issues a competitive solicitation for market-based and alternative regulated solutions, and the Responsible Transmission Owner(s) is required to propose a regulated backstop solution
- **Comprehensive Reliability Plan (CRP)**
  - Biennial report that documents the plans for a reliable grid over the 10-year planning horizon
  - If applicable, includes an assessment of viability and sufficiency and an evaluation and selection of the more efficient or cost-effective transmission solution to a Reliability Needs in years 4-10



# Assessing Reliability Criteria

- Reliability Criteria includes applicable NERC, NPCC, NYSRC Reliability Rules
- NYISO assesses Reliability Criteria on the BPTF as follows:
  - Resource Adequacy
    - The ability of the electric systems to supply the aggregate electrical demand and energy requirements of their customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements.
  - Transmission Security
    - The ability of the electric system to withstand disturbances, such as electric short circuits or unanticipated loss of system elements.
    - The ability of the power system to withstand the loss of one or more elements without involuntarily disconnecting firm load.



# 2024 RNA Preliminary Schedule



# 2024-2025 RPP Cycle Background

- **The 2024-2025 Reliability Planning Process (RPP) starts with the 2024 Reliability Needs Assessment (2024 RNA) and is followed by the 2025-2034 Comprehensive System Plan (CRP)**
  - 2024 RNA Study Period: year 4 = 2028 through year 10 = 2034
  - Note: year 1 through year 5 are assessed quarterly in the Short-Term Reliability Process (STRP), with focus on year 1 through 3
- **2024 RNA will be based on the information from the 2024 Gold Book, the 2024 FERC 715 filing, historical data, and Market Participant data**
- **NYISO will identify Reliability Needs when the Reliability Criteria is not met on the 2024 RNA Base Case (*i.e.*, “actionable evaluations”)**

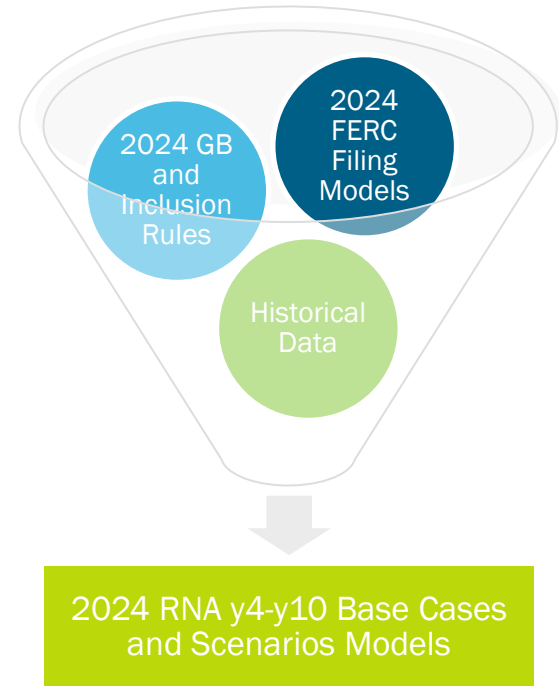
# 2024 RNA Preliminary Schedule

## ■ January - April 2024: Development of RNA Inputs

- Most of the input is developed in this period, such as: 2024 Gold Book, FERC 715 filing (e.g., power flow models and auxiliary files), short circuit models, Developers' status updates, etc.
- Presentations to stakeholders on preliminary schedule, preliminary scenarios list, demand-side forecasts, assumption matrix, and application of inclusion rules in the RPP Manual

## ■ May – July: Preliminary Results

- RNA transmission security and resource adequacy base cases finalized and evaluation started
- Present preliminary RNA results
- Start scenario development



# 2024 RNA Preliminary Schedule, cont.

## ■ July - September: Final Results

- Two-week window for assumptions updates
- Finalize base cases and update results, as necessary
- Finalize scenario results
- Prepare and present draft RNA report

## ■ October - November: Review and Approval

- OC vote
- MC vote and Market Monitoring Unit review
- NYISO Board of Directors review and action
- Publish the Final RNA Report following approval by Board of Directors

# Questions?

# Roles of the NYISO

- **Reliable operation of the bulk electricity grid**
  - Managing the flow of power on 11,000 circuit-miles of transmission lines from hundreds of generating units
- **Administration of open and competitive wholesale electricity markets**
  - Bringing together buyers and sellers of energy and related products and services
- **Planning for New York's energy future**
  - Assessing needs over a 10-year horizon and evaluating projects proposed to meet those needs
- **Advancing the technological infrastructure of the electric system**
  - Developing and deploying information technology and tools to make the grid smarter

# Our Mission & Vision



## Mission

Ensure power system reliability  
and competitive markets for New  
York in a clean energy future



## Vision

Working together with stakeholders  
to build the cleanest, most reliable  
electric system in the nation

# Appendix: EFORd Assumptions in Margin Assessments

# Review of Class Average EFORd Assumption in Margin Assessments

---

Ross Altman

Senior Manager, Reliability Planning

**ESPWG**

Updates to January 23, 2024 presentation based on stakeholder discussions are shown in red



# Background

- The Reliability Planning Process Manual describes the derates applied to different generation classes that NYISO uses in calculating system margins, primarily in the RNA and STAR studies. For thermal units, NYISO uses the generation class averages that NERC publishes every year.
- This presentation provides an overview of the differences between NERC and NYCA 5-year class average EFORD values

# NERC vs. NYCA Calculations Discussed in this Presentation

	NERC Calculation	NYCA Calculation
Period	5 years	5 years
Reporting Units	All units that report GADS data to NERC (US and Canada)	All units that report GADS data to NYISO (NYCA)
Include Outside Management Control (OMC) cause codes	Yes	Yes
Calculation	Not capacity weighted	Capacity weighted
Category	Thermal Generator Type/Fuel	Thermal Generator Type/Fuel

# Comparison of NERC vs. NYCA Unavailable Capacity (Planned Year 2025)

	NYCA (MW)			Lower Hudson Valley (MW)			New York City (MW)			Long Island (MW)		
	DMNC	MW Derate (NERC Calc) (1)	MW Derate (NYCA Calc) (1) (2)	DMNC	MW Derate (NERC Calc) (1)	MW Derate (NYCA Calc) (1) (2)	DMNC	MW Derate (NERC Calc) (1)	MW Derate (NYCA Calc) (1) (2)	DMNC	MW Derate (NERC Calc) (1)	MW Derate (NYCA Calc) (1) (2)
All Fuel Types/ST	10,863	1,075	1,171	6,721	665	725	3,839	380	414	2,396	237	258
Oil Primary/IC	21	3	3	0	0	0	0	0	0	21	3	3
Oil/Gas Primary/IC	26	3	3	11	1	1	11	1	1	15	2	2
Nuclear PWR/NP	580	11	11	0	0	0	0	0	0	0	0	0
Nuclear BWR/NB	2,724	59	59	0	0	0	0	0	0	0	0	0
Jet Engine/JE	1,531	137	145	670	60	64	602	54	57	861	77	82
Gas Turbine/GT	1,369	138	204	411	41	61	411	41	61	918	93	137
Combined Cycle/CC	10,843	440	430	4,978	202	198	3,297	134	131	612	25	24
Total	27,957	1,867	2,026	12,790	970	1,048	8,159	610	664	4,822	436	505

(1) Uses EFORD values published by NERC in Aug 2022 (using 2017-2021 data)

(2) Uses EFORD values calculated from NYISO 2018-2022 data. Items shown in blue text utilize the NERC class average EFORD so as not to disclose potential confidential information

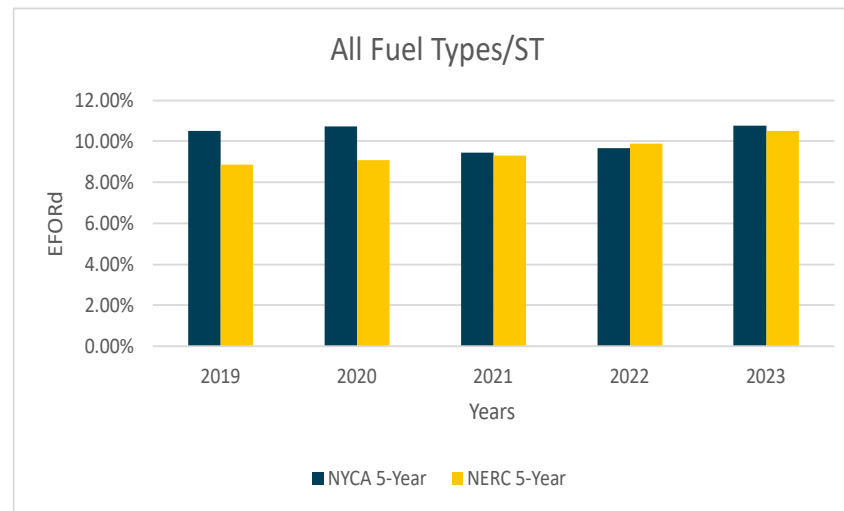
**Units that have deactivated have been removed for the entire five-year period of the NYISO 2023 calculation**

- For example, units that retired on May 1, 2023 are excluded from the 2018-2022 data that was used for the 2023 calculated EFORD values**

# All Fuel Types/Steam Turbine (ST)

	NYCA (MW)		
	DMNC	MW Derate (NERC Calc)	MW Derate (NYCA Calc)
All Fuel Types/ST	10,863	1,075	1,171

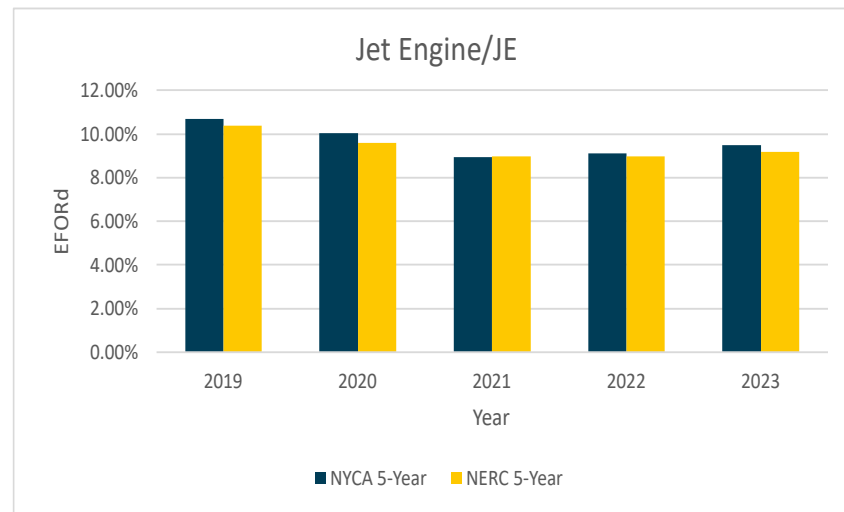
	All Fuel Types/ST				
Years	2019	2020	2021	2022	2023
NYCA 5-Year	10.50%	10.73%	9.44%	9.65%	10.78%
NERC 5-Year	8.85%	9.10%	9.31%	9.90%	10.50%



# Jet Engine/JE

	NYCA (MW)		
	DMNC	MW Derate (NERC Calc)	MW Derate (NYCA Calc)
Jet Engine/JE	1,531	137	145

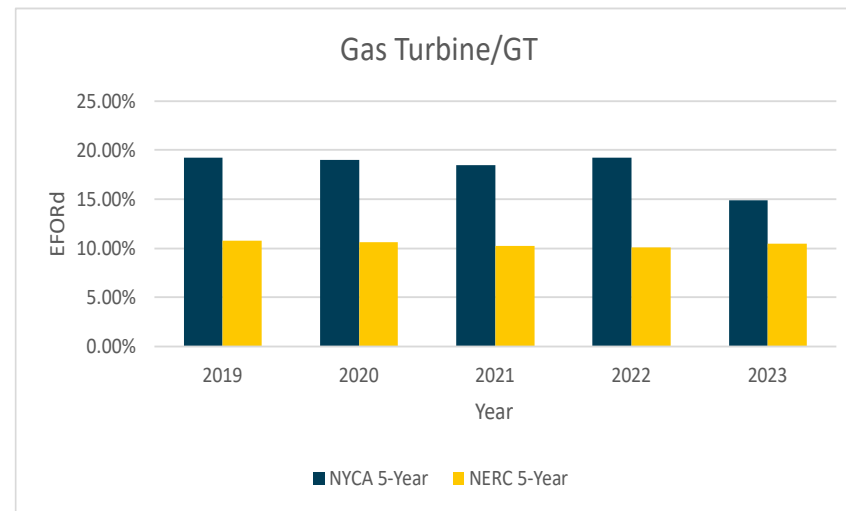
	Jet Engine/JE				
Years	2019	2020	2021	2022	2023
NYCA 5-Year	10.69%	10.03%	8.93%	9.10%	9.48%
NERC 5-Year	10.37%	9.61%	8.97%	8.96%	9.19%



# Gas Turbine/GT

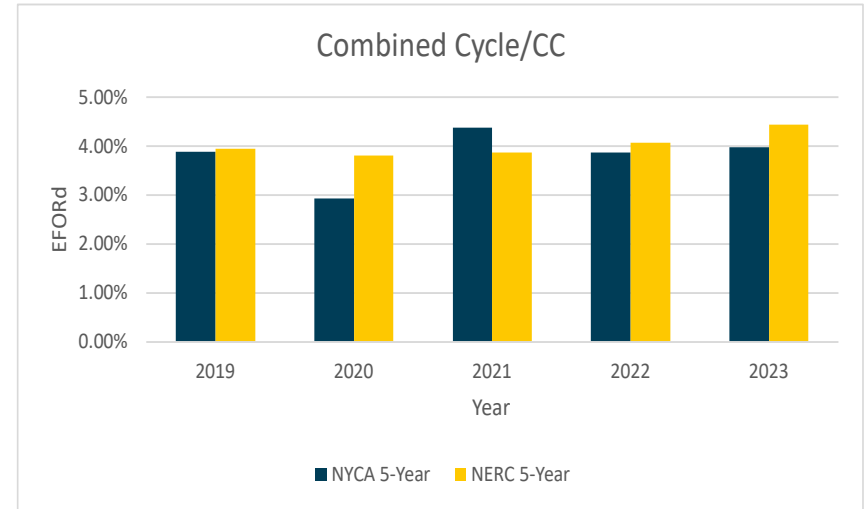
	NYCA (MW)		
	DMNC	MW Derate (NERC Calc)	MW Derate (NYCA Calc)
Gas Turbine/GT	1,369	138	204

	Gas Turbine/GT				
Years	2019	2020	2021	2022	2023
NYCA 5-Year	19.21%	19.01%	18.44%	19.21%	14.90%
NERC 5-Year	10.75%	10.60%	10.22%	10.08%	10.50%



# Combined Cycle/CC

	NYCA (MW)		
	DMNC	MW Derate (NERC Calc)	MW Derate (NYCA Calc)
Combined Cycle/CC	10,843	440	430



	Combined Cycle/CC				
Years	2019	2020	2021	2022	2023
NYCA 5-Year	3.89%	2.93%	4.37%	3.87%	3.97%
NERC 5-Year	3.94%	3.81%	3.87%	4.06%	4.43%

# New Slide:

## Thermal Generator Classifications

Category Name	NERC Generator Category/Classification	NYISO classification		
		GB: Unit Type	GB: Fuel Type 1	GB: Fuel Type 2
All Fuel Types/ST	FOSSIL All Fuel Types All Sizes	ST	any	any
Oil Primary/IC	FOSSIL Oil Primary All Sizes	IC	FO2	N/A
Oil/Gas Primary/IC	FOSSIL Oil/Gas Primary All Sizes	IC	NG	FO2
Nuclear PWR/NP	NUCLEAR PWR All Sizes	NP	UR	N/A
Nuclear BWR/NB	NUCLEAR BWR All Sizes	NB	UR	N/A
Jet Engine/JE	JET ENGINE All Sizes	JE	any	any
Gas Turbine/GT	GAS TURBINE All Sizes	GT	any	any
Combined Cycle/CC	COMBINED CYCLE All Sizes	CC	any	any
MTE/IC	FOSSIL Lignite Primary All Sizes	IC	MTE	N/A



# New Slide: EFORds used in 2023 Q3 STAR

- Utilized the Generating Unit Statistical Brochure 4 2017-2021 - All Units Reporting NERC data published in August 2022
- Resources were assigned a “EFORd,” which can be found in column AQ, based on its classification

$$\text{EFORd} = \frac{\text{FOHd} + \text{EFDHd}}{\text{SH} + \text{FOHd}} \times 100\%$$

# New Slide: 2024 IRM Appendices

- Figure A.9 NERC Five-Year Weighted Average Availability reports the WEAf value, which can be found in column AY

Category Name	NERC Generator Category/Classification	
COAL	FOSSIL Coal Primary	All Sizes
NUCLEAR	NUCLEAR All Types	All Sizes
OIL	FOSSIL Oil Primary	All Sizes
GAS	FOSSIL Gas Primary	All Sizes
COMBUSTION TURBINES	GAS TURBINE	All Sizes

Year Ending 2022 reports  
Brochure 4, published in August  
2023, reporting 2018-2022 data

$$\text{WEAF} = \frac{\Sigma ((\text{AH} - \text{EUDH} - \text{EPDH} - \text{ESEDH}) \times \text{NMC})}{\Sigma (\text{PH} \times \text{NMC})} \times 100\%$$

$$\text{WEAF} = \frac{\Sigma ((\text{AH} - \text{EFDH} - \text{EMDH} - \text{EPDH} - \text{ESEDH}) \times \text{NMC})}{\Sigma (\text{PH} \times \text{NMC})} \times 100\%$$