

Tailored Availability Metric

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Agenda

- **Background and Recap**
- **Additional Analysis Requested**
- **NYISO's Final Proposal**
- **Next Steps**
- **Appendix**

Background and Recap

A Grid in Transition – The Plan

- Carbon Pricing
- Comprehensive Mitigation Review
- DER Participation Model
- Energy Storage Participation Model

Aligning Competitive Markets and New York State Clean Energy Objectives



- Enhancing Energy & Shortage Pricing
 - Ancillary Services Shortage Pricing
 - Constraint Specific Transmission Shortage Pricing
 - Enhanced Fast Start Pricing
- Review Energy & Ancillary Services Product Design
 - More Granular Operating Reserves
 - Reserve Enhancements for Constrained Areas
 - Reserves for Resource Flexibility

Valuing Resource & Grid Flexibility



- Enhancements to Resource Adequacy Models
- Revise Resource Capacity Ratings to Reflect Reliability Contribution
 - Expanding Capacity Eligibility
 - Tailored Availability Metric
- Capacity Demand Curve Adjustments

Improving Capacity Market Valuation



Recap

- **2020 Deliverable: Q2 Market Design Complete for a May 1, 2021 Implementation**
 - For availability based resources, the NYISO is proposing to change the structure of the EFORd calculation to take the average of the previous 2 like-Capability Periods
 - For wind and solar resources, the NYISO is proposing to conduct a reoccurring study every 4 years that will result it hourly capacity value weightings within the Peak Load Window

Additional Analysis Requested

Additional Analysis Requested

- **At the previous working group meeting on February 26th, stakeholders had requested additional analysis for availability-based resources that use the EFORd calculation**
- **The analysis included a hypothetical CC and GT unit and shows the change in the AEFORd with a full month outage in a peak month versus a full month outage in a non-peak month**
 - Peak months, as defined by the stakeholder request, included months June, July, August, and September
 - The data of the nonpeak months (May and October) were requested to be weighted 25%
 - See Appendix for detailed data

Additional Analysis Requested

- For the hypothetical CC unit:
 - Service Hours for peak months ranged within 500-600 hours
 - Service Hours for nonpeak months ranged within 200-300 hours
 - For the Non-peak Outage case, a full month forced outage was recorded for the whole month of May
 - For the Peak Outage case, a full month forced outage was recorded for the whole month of July
- For a full peak month outage, the AEFORd increased 4.8%
- For a full nonpeak month outage, the AEFORd decreased 11.3%

	CC		
	EFORd		
Month	Baseline	Non-peak Outage	Peak Outage
May	8%	100%	8%
June	4%	4%	4%
July	4%	4%	100%
August	4%	4%	4%
September	4%	4%	4%
October	9%	9%	9%
6 Month EFORd	4.3%	20.6%	21.1%
6 Month Weighted EFORd	3.8%	9.3%	26.0%
Delta	-0.5%	-11.3%	4.8%

Additional Analysis Requested

- For the hypothetical GT unit:
 - Service Hours for peak months ranged within 200-300 hours
 - Service Hours for nonpeak months ranged within 100-150 hours
 - For the Non-peak Outage case, a full month forced outage was recorded for the whole month of May
 - For the Peak Outage case, a full month forced outage was recorded for the whole month of July
- For a full peak month outage, the AEFORd increased 4.15%
- For a full nonpeak month outage, the AEFORd decreased 10.9%

	GT		
	EFORd		
Month	Baseline	Non-peak Outage	Peak Outage
May	17%	100%	17%
June	9%	9%	9%
July	8%	8%	100%
August	9%	9%	9%
September	9%	9%	9%
October	21%	21%	21%
6 Month EFORd	9.9%	25.2%	26.3%
6 Month Weighted EFORd	9.0%	14.3%	30.4%
Delta	-0.9%	-10.9%	4.15%

NYISO Responses to Requested Analysis

- **At this time the NYISO believes the proposal made to change the structure to the average of the previous 2-like Capability Period EFORds is an incremental improvement to the EFORd calculation because it aligns seasonal payments with seasonal performance**
 - Currently, the Capacity Market does not calculate monthly availability factors
 - Additionally, the Capacity Market does not adjust its demand curves monthly, but rather uses a Summer and Winter Capability Period translation to adjust the demand curves used in the Summer and the Winter
- **The NYISO acknowledges that there may be merit to placing a weighting on some months of the calculation**
 - The NYISO still believes it is important that resources are available in every month
 - Given the uncertainties that the New York grid faces with the potentially rapid changes to the resource mix, the NYISO is also not confident that discounting current non-peak months will be representative of the resource availability needs in the future
- **Therefore, the NYISO proposes to move forward with the current proposal and bring the project to a BIC vote in April, 2020**
 - The NYISO is committed to remaining responsive to stakeholders desire to move more quickly
 - If stakeholders would like to further assess availability-based resources, it could be addressed in the future if it is prioritized in the project prioritization process

NYISO's Final Proposal

Availability-based Resources

- For availability-based resources that use the EFORd or UOL calculation for their derating factor, the NYISO is proposing to take the average of the previous 2-like Capability Period EFORds
- For new resources the class average will be used
 - For example:
 - If a resource has recorded data for 1 Capability Period, the AEFORd will take the average of the calculated EFORd of the unit's actual data for 1 Capability Period and the class average for the missing Capability Period
- For a resource that is in an ICAP ineligible state (e.g., Mothball, IIFO) the NYISO will look-back until historic "like" data is available
 - For example:
 - For a Summer 2018 Capability Period AEFORd, if historic data was unavailable for months August – October 2016, the NYISO would replace the missing data from the next available historic year, *i.e.* August – October 2015
 - MST 5.12 has been updated to reflect this change

Wind and Solar Resources

- **The NYISO is proposing a reoccurring study every 4 years, that would result in hourly capacity value weightings across the Peak Load Window**
 - Weightings would be applied to the respective hourly production data
 - The study would run concurrently with the study for Expanding Capacity Eligibility
 - Each study could reset the top 4 hours within the Peak Load Window and percentages based on the percentages for Expanding Capacity Eligibility
- **The duration of the Peak Load Window is dependent on resources with duration limitations**
 - When the system reaches 1000 MW of duration limited resources and the window shifts from 6 hours to 8 hours, the PLW for wind and solar will also shift

Proposal

- **At this time, the NYISO is proposing the following weightings across the 8-hour and 6-hour PLW**
- **For a 6-hour PLW, the top 4 hours will receive a 75% weighting**
 - Weightings of the shoulder 2 hours will be equally weighted at 12.5% each
- **For an 8-hour PLW, the top 4 hours will receive a 70% weighting**
 - Weightings of the shoulder hours will be 3-tiered
 - In other words, the next top 2 hours will be weighted 20%, and the last 2 hours will be weighted 10%

Proposal

- **Summer and Winter Capability Period months will receive the following set of weightings as shown in Table 1**
 - For the Winter PLW, the top 4 hours will remain consistent with methodology used today, and the top load hours from Expanding Capacity Eligibility (HB 16 – HB 19)
- **Under this construct, wind and solar resources will still have the opportunity to receive 100% performance factors if they perform in all hours of the Peak Load Window**

Table 1

HB	Summer Peak Load Window		Winter Peak Load Window	
	6 Hour	8 Hour	6 Hour	8 Hour
12		5.0%		
13	12.5%	10.0%		
14	18.75%	17.5%		5.00%
15	18.75%	17.5%		5.00%
16	18.75%	17.5%	18.75%	17.50%
17	18.75%	17.5%	18.75%	17.50%
18	12.5%	10.0%	18.75%	17.50%
19		5.0%	18.75%	17.50%
20			12.5%	10.0%
21			12.5%	10.0%
Top 4 Hours	75%	70%	75%	70%

MST 5.12

- **Updates have been made to 5.12.6.2 to reflect the following:**
 - The hourly weightings proposed for wind and solar resources within the 8-hour and 6-hour Peak Load Window
 - A table has been added to show the hourly weightings
 - The previous 2 like-Capability Period look-back for availability-based resources
 - For resources in an ICAP ineligible state, language has been modified to denote the previous “like-month” data will be used
- **Section 5.12.14.3 has been updated to reflect the 4-year reoccurring study for wind and solar resources**
- **Detailed changes will be made to Section 4.5 and Attachment J of the ICAP Manual pending FERC approval**

Next Steps

Next Steps

- At this time, the NYISO is targeting the April BIC for May 1, 2021 implementation

Feedback/Questions?

The NYISO will consider input received during today's Working Group meeting and further input sent in writing to deckles@nyiso.com and econway@nyiso.com

Appendix

Hypothetical Example – CC Data

CC Nonpeak Outage

	SH	RSH	FOH	FO Count	EFDH	Attempted Starts	Actual Starts
May	0.00	0.00	744	1	0	0	0
June	550	145	25	1	0	15	14
July	550	169	25	1	0	14	13
August	550	169	25	1	0	20	19
September	550	145	25	1	0	18	16
October	200	519	25	1	0	2	2
Total	2400	1147	869	6	0	69	64

CC Peak Outage

	SH	RSH	FOH	FO Count	EFDH	Attempted Starts	Actual Starts
May	200	519	25	1	0	5	5
June	550	145	25	1	0	15	14
July	0.00	0.00	744	1	0	0	0
August	550	169	25	1	0	20	19
September	550	145	25	1	0	18	16
October	200	519	25	1	0	2	2
Total	2050	1497	869	6	0	60	56

CC Baseline

	SH	RSH	FOH	FO Count	EFDH	Attempted Starts	Actual Starts
May	200	519	25	1	0	5	5
June	550	145	25	1	0	15	14
July	550	169	25	1	0	14	13
August	550	169	25	1	0	20	19
September	550	145	25	1	0	18	16
October	200	519	25	1	0	2	2
Total	2600	1666	150	6	0	74	69

Hypothetical Example – GT Data

GT Nonpeak Outage

	SH	RSH	FOH	FO Count	EFDH	Attempted Starts	Actual Starts
May	0.00	0.00	744	1	0	0	0
June	250	420	50	1	0	16	15
July	300	394	50	1	0	14	14
August	300	394	50	1	0	12	12
September	250	420	50	1	0	15	14
October	100	594	50	1	0	2	2
Total	1200	2222	994	6	0	59	57

GT Peak Outage

	SH	RSH	FOH	FO Count	EFDH	Attempted Starts	Actual Starts
May	100	594	50	1	0	4	4
June	250	420	50	1	0	16	15
July	0.00	0.00	744	1	0	0	0
August	300	394	50	1	0	12	12
September	250	420	50	1	0	15	14
October	100	594	50	1	0	2	2
Total	1000	2422	994	6	0	49	47

GT Baseline

	SH	RSH	FOH	FO Count	EFDH	Attempted Starts	Actual Starts
May	100	594	50	1	0	4	4
June	250	420	50	1	0	16	15
July	300	394	50	1	0	14	14
August	300	394	50	1	0	12	12
September	250	420	50	1	0	15	14
October	100	594	50	1	0	2	2
Total	1300	2816	300	6	0	63	61

Wind and Solar Resources

- **The relative capacity value weightings established will align with the Peak Load Windows proposed in the Expanding Capacity Eligibility project**
 - 6 hour Peak Load Window:
 - Summer: HB 13 – HB 18
 - Winter: HB 16 – HB 21
 - 8 hour Peak Load Window:
 - Summer: HB 12 – HB 19
 - Winter: HB 14 – HB 21
 - The duration of the Peak Load Window is dependent on resources with duration limitations

Our mission, in collaboration with our stakeholders, is to serve the public interest and provide benefit to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policymakers, stakeholders and investors in the power system

