



Generator Interconnection Queue Improvements (PAC-2023-1)

MISO Cap Proposal

Interconnection Process Working Group (IPWG)

September 30, 2024

Purpose & Key Takeaways



Purpose: Discuss MISO Cap proposal

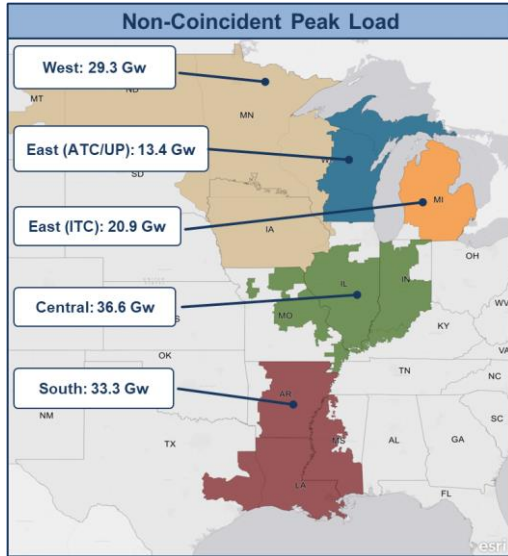
Key Takeaways:

- In response to feedback, MISO would like to further discuss and clarify proposed Cap filing details, such as exemptions, Cap formula calculations, and the application process under the Cap
- Final proposal will be presented at the October 16th PAC

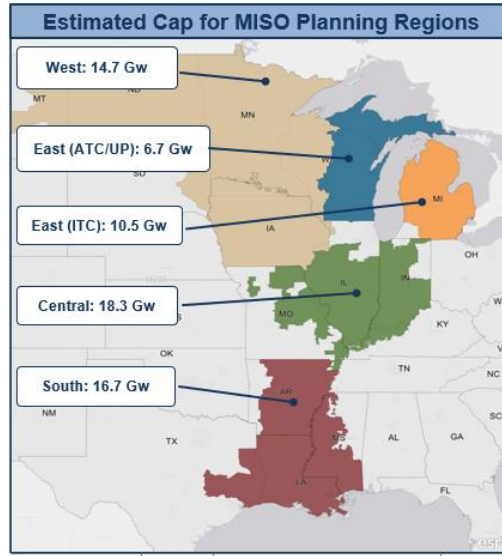
Rejected Queue Cap Filing ER24-341 – Implement Cap on total MW value

- While FERC agreed that MISO provided evidence that a Cap could be beneficial, the filing was rejected based on concerns pertaining to the proposed Cap exemptions, the description of the Cap formula, and the links to future resource adequacy needs
- MISO will incorporate the guidance FERC provided into its refiling

MISO's Cap will be 50% of each Planning Region's Non-Coincident Peak improving the quality of initial studies and potentially reducing network upgrade costs.



2023 Non-Coincident Peak Load ~134 GWs



The planned 2024 cycle will be ~68 GWs

- Projects over Cap will be first in line per submission timestamp
 - Projects over Study Region Cap will not be used to fill Study Region Cap that aren't filled
- No further adjustments will be made to Study Region Cap for exemptions or estimated withdrawals
- 3-year review of effectiveness of the queue Cap

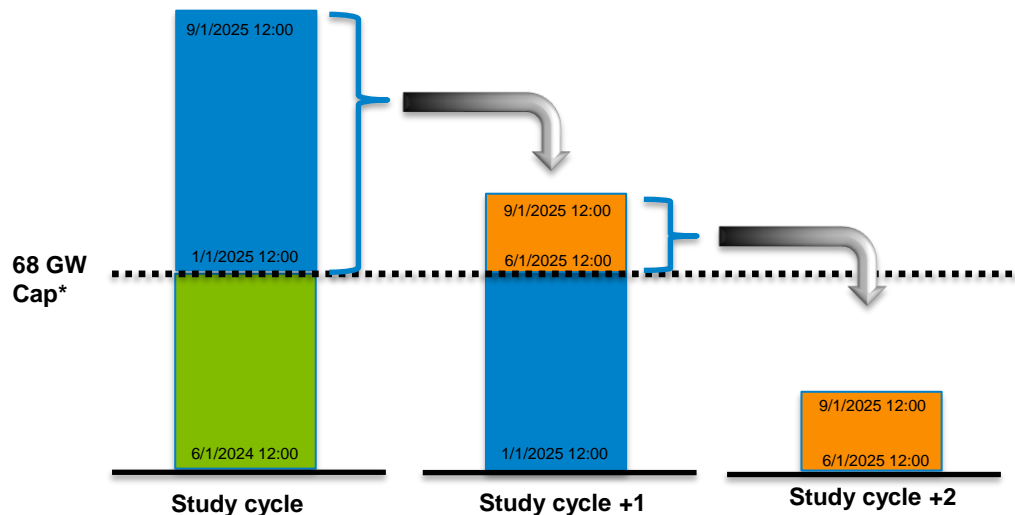
** Once the Cap is met additional applications would begin accumulating for the next cycle. The RERRA exemptions, if needed would be added to current cycle.*

Backbone Network Upgrades and required exports are eliminated with a Cap at 50-60% of Non-Coincident Peak Load

Power flow model	Total GW of Queue Projects	% of Non-Coincident Peak Load	Backbone Network Upgrades	Export to Neighbors (GW)
2022 Cycle test cases	67.6	50%	0	0
2022 Cycle test cases	80.9	60%	0	0
2022 Cycle test cases	84.3	63%	0	10.2
2022 Cycle test cases	90.9	68%	1 Transmission line	12.2
2022 Cycle test cases	95.9	72%	1 Transmission line	15.0
2022 Cycle Kickoff*	142.0	106%	21.5 GVAR of voltage support	6.4
2022 Cycle Prescreen*	177.0	132%	3 Transmission lines 42.5 GVAR of voltage support	10.3

- While the 60% test case did eliminate the need to Backbone Network Upgrades, the 50% Cap was selected because it more closely aligned with previous filing cap calculation (Peak load versus Pmin evaluation)
- Test cases start with 2022 Prescreen model and reduce Queue project incremental to the proposed 50% Cap
- Backbone Network Upgrades are necessary to obtain a usable model
- Needed exports are indication of further Affected System costs

Once the Cap is met, additional resources will start lining up for the next study cycle



- Projects over Cap will be first in line for the next cycle, per submission timestamp
 - Projects over Study Region Cap will not be used to fill Study Region Cap that aren't filled
- Study cycle kick-off in normal cadence i.e. in September time frame

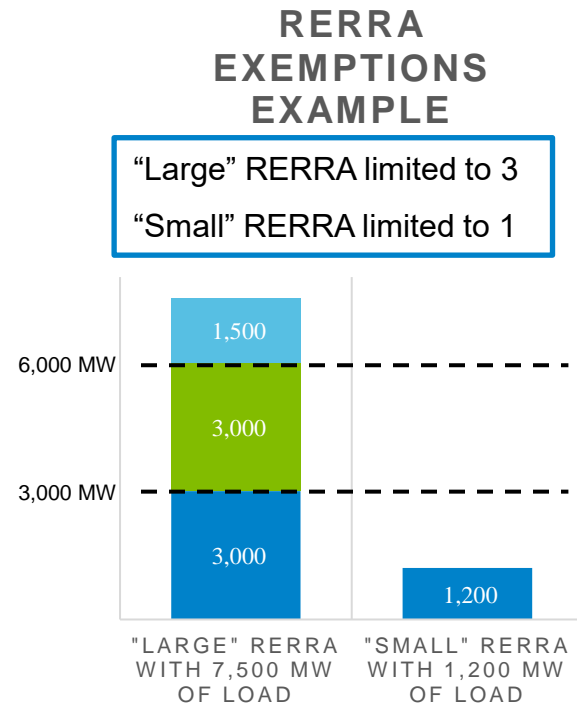
Cap Exemptions

MISO proposal is to maintain exemption setup for:

- Provisional Generator Interconnection Agreement (submitted with the application),
- Requests to convert ERIS to NRIS,
- Approved Replacement Generating Facility requests seeking additional interconnection service,
- Limited exemptions for Relevant Electric Retail Regulatory Authority's (RERRA) resource adequacy needs

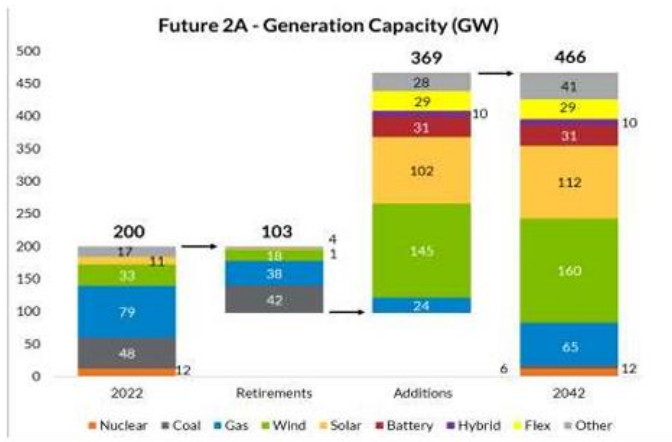
RERRA (Relevant Electric Retail Regulatory Authority) exemptions will be limited by need for resource adequacy and amount of documented load RERRA has authority over

- RERRA will need to confirm that any resource qualifying for exemption is needed for resource adequacy
- Each RERRA would be allowed to 1 (one) exemption for each 3,000 MW slice of documented load they have authority over
- RERRA exemption requests will need to be submitted with the application



Estimated queue throughput with the Queue Volume Cap exceeds the projected Future 2A Net Additions

Future 2A Net Additions of **248 GW** (2022-2042)



Estimated Queue throughput of **310 GW** (2025-2042)

Active Interconnection Requests in the Queue**	321 GW
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Assumed completion rate of 21%	67.4 GW
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Proposed Queue Cap	68 GW
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Per Year additions (21% completion rate)	14.3 GW
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- Net Additions 2022 through 2042 – 248 GW*
- Annual Net Additions 12.4 GW/year
- Annual Gross Additions 17.6 GW/year

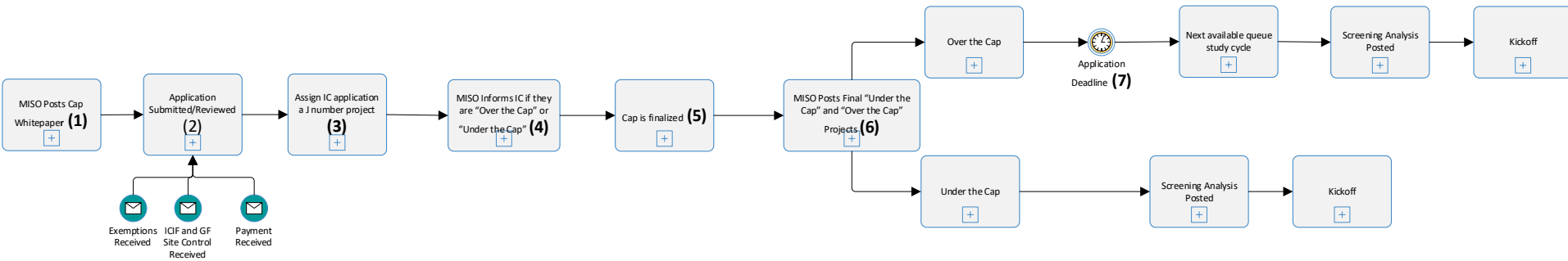
** <https://cdn.misoenergy.org/GIQ%20Web%20Overview272899.pdf>

High level process overview*

1. Cap information (GWs) is posted at least 10 Business Days before the application deadline
2. Applications are reviewed in order of submission date. The payments (D1, D2, M2), Site Control and exemption requests are due with the application submittal to process the application
3. J numbers are assigned to the project that cleared all the deficiencies.
4. When the Cap is met, the ICs are notified if their validated project is included under the Cap (determined by the submission timestamp).
 - The list of projects included under the Cap for the future cycles is posted.
5. The withdrawn projects will be replaced with the projects from over the Cap list up to 30 days before the kickoff.
6. The final list of projects included in the study cycle (under the Cap) is posted 30 days before the kickoff.
7. For the future cycles impacted by the Cap, the application deadline will follow normal cadence (i.e. in September time frame)

*Numbering corresponds to Cap Process Flow Diagram on the next slide

Cap Process Flow Diagram



Implementation of Pearl Streets SUGAR software does not negate the need for a Queue Volume Cap

- Both solutions are addressing separate issues
- The SUGAR software will get customers information faster
 - Pre-screen
 - Power flow models
 - Network Upgrade identification and cost allocation
 - System Impact Study (SIS) reports
- What the Queue Volume Cap is addressing is the engineering problem with serving load with just the new requests
 - More realistic resource dispatch, models and analysis
- Implementing SUGAR without the Queue Volume Cap will only get to the same engineering problem quicker
- Implementing both solutions will get realistic results faster for Interconnection Customers to be able to make better informed decisions

Proposed Timeline

Date	Meeting	Purpose
Sept. 3 rd	IPWG	Respond to feedback and layout plan to address feedback.
Sept. 3 rd – Sept. 25 th	N/A	Work on addressing feedback and collaboration
Sept. 30 th	IPWG	Present Queue volume cap proposal.
Oct. 16 th	PAC	Present Final Queue volume cap proposal, request feedback.
Oct. 31	FERC	Projected filing date.
Jan. 17 th	FERC	Projected effective date.

MISO's opinion on Savion VPE proposal

- MISO believes that the Volume Price Escalator (VPE) proposal has merit that should continue to be discussed
- However, MISO does not believe that the VPE proposal is a substitute for the queue Cap
 - VPE without a Cap does not guarantee that the queue will not end up in a similar place as past high-volume cycles
- Further, more work is needed develop the VPE tranches and VPE administration



Questions?

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2023 Study Cycle Scoping Discussions Update

- By mutual agreement between all parties involved, MISO would like to offer the opportunity prior to the 45-calendar day timeframe (i.e. 1/14/2025) to hold Scoping Discussions for the 2023 Study Cycle sooner
- Discussion regarding, among other things, alternative interconnection options and confirmation of models
- Subsequent communication regarding the process and requirements to follow soon