



Resource Adequacy Reforms

Michigan Public Service
Commission

November 16, 2022

Purpose & Key Takeaways

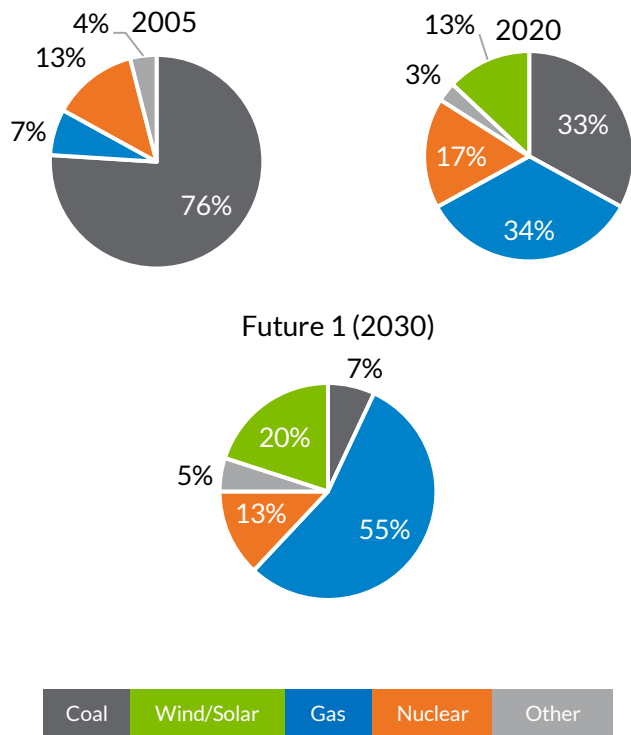


Purpose: Review and discuss the foundational elements of MISO's Resource Adequacy (RA) reforms.

Focus areas:

- Evolving system needs and MISO's Reliability Imperative
- FERC Approved Resource Adequacy reform:
 - Seasonal requirements
 - Resource accreditation
 - Planning Resource Auction and Day-Ahead Performance Obligation
- LMR Accreditation Proposal

MISO's response to the Reliability Imperative requires coordinated efforts in markets, planning, operations, and systems



RELIABILITY IMPERATIVE

Market Redefinition

- Long-Range Transmission Planning
- Operations of the Future
- Market System Enhancement

List is not representative of all efforts

MISO is actively pursuing multiple workstreams to ensure ongoing reliability and value creation

The Resource Adequacy Construct reforms continue to better position MISO to meet the challenges of the Reliability Imperative



Sub-annual construct: Change from current annual summer-based construct to four distinct seasons

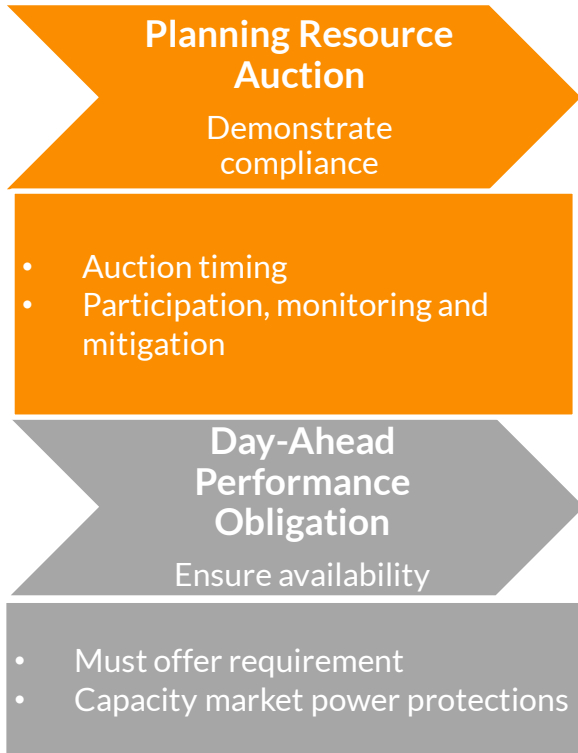
Outcomes: (1) Identify reliability needs unique to each season (2) Align resource availability with seasonal needs (3) Facilitate seasonal outages or partial year operations



Improved accreditation: Align resource accreditation with availability in the highest risk periods

Outcomes: (1) Increase confidence in capacity that MISO can count on (2) Provide improved signals for availability and coordination (3) Improve outage coordination processes

The Planning Resource Auction and performance obligation will be aligned and enhanced



Current Annual Construct	New Seasonal Construct
MISO <u>conducts annual Planning Resource Auction (PRA)</u> to meet annual PRM/LCR requirements	MISO will <u>conduct independent auctions for all seasons at one time to meet seasonal PRM/ LCR requirements</u>
PRA cleared resources <u>have a year-round, must-offer obligation</u> , except for outages reported in the Control Room Operations Window (CROW)	PRA-cleared resources <u>have a must-offer obligation for the seasons for which they are cleared</u> , except for outages reported in the CROW during those seasons

MISO will calculate PRM/LRR requirements on a seasonal basis instead of one annual value for the current annual construct

Seasonal Requirements

Establish RA requirements

- Season definition
- LOLE study requirements
- Seasonal capacity import/export limits (CIL/CEL)

Current Annual Construct

MISO performs annual LOLE analysis to determine annual PRM/LRR requirements with realistic planned outage scheduling.

New Seasonal Construct

MISO will calculate four explicit PRM/LRR requirements on a seasonal basis with flexible planned outage scheduling, while monitoring impacts from accreditation changes and refining planned outage method.

MISO proposes to accredit resources based on availability during times of greatest system need, reducing risk by aligning planning and real-time operations

Resource Accreditation

Register resources and qualification

- Thermal resources
 - Defining RA hour
 - Tiered approach and weighting
 - Deliverability
- Intermittent and LMR resources
- Coordinated planned outage and exemptions

Current Annual Construct

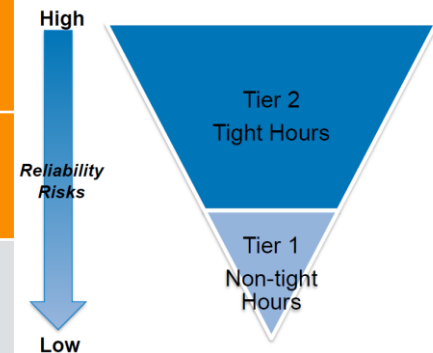
MISO accredits conventional resources annually based on a 3-year XEFORd excluding planned outages

New Seasonal Construct

- MISO will accredit by season based on resources' availability (SAC) with a two-tiered weighting structure to reflect general availability while emphasizing availability during times of need and utilize a UCAP/ ISAC conversion ratio to align requirements and accreditation
- Well-coordinated and long lead planned outages will continue to have exemptions, but accreditation impacts will be strengthened in some circumstances

MISO proposes a three-level exemption process and considers timely submissions and the Maintenance Margin to support reliability

	Maintenance Margin ≥ 0 for duration of outage	Maintenance Margin < 0 for any day in the duration of outage	Tier Exemption
> 120 days, no outage in previous 120 days	Exempt Tier 1 & 2	Exempt Tier 1 Only	Tier 1 & 2 (Full) Tier 1 Only (Partial) No Exemption
> 120 days, outage in previous 120 days, or between 30-119 days	Exempt Tier 1 Only	No Exemption	
14-30 days and no harm*	Exempt Tier 1 Only	No Exemption	
Outage moved per MISO request	Fully Exempt* Rescheduled to a better margin	N/A	



Updates to MISO Publication Plan for RA Hours & SAC Values

Dates	Status as communicated at August RASC	October Status Update
Sep 2022	MISO publishes RA Hours Sept 2018 through Aug 2022	Draft RA hours from Sept 2019 – Aug 2022 posted
Nov 2022	MISO publishes SAC values for Sept 2018 through Aug 2021 (three years)	Sep 2018-Aug 2021 SAC values will not be provided – instead MISO is working on expediting Sept 2019-Aug 2022 SAC values to be available potentially in November.
Dec 2022	MISO publishes initial look at SAC values for Sept 2019 through Aug 2022 (full three years)	
Dec 15, 2022	MISO publishes SAC values for Sept 2019 through Aug 2022 (full three years)	No change

Regulatory filings and resource links

- Seasonal, availability-based accreditation [filing](#)
 - [Answer](#) to comments and protests
 - [Response](#) to FERC Deficiency letter
- Conceptual Design [document](#)
- Posted [Q&A](#)
- Resource Adequacy Subcommittee (RASC) [link](#)



Contact Information

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Appendix

MISO's accreditation proposal reflects findings from impact analysis and stakeholder discussion

Design Elements		Proposal
Hour Selection	Top X% of tightest margin hours	Tier 1: All hours, excluding tight hours in Tier 2 Tier 2: MaxGen hours supplemented with top 3% of tight margin hours per season
	Margin threshold	Yes
	Seasons with no/ limited RA hours to meet 3% per season (65 hours)	Supplement deficient number of hours with annual average offered capacity over top 3% of tightest margin hours per year
	Regionality (N+C/S) (tight margin and MaxGen hours)	Yes
	Leadtime for offline units (tight margin calc)	12 hours
Accreditation Calculation	Annual verses seasonal	4 season
	Tiered weighting	Tier 1 20%; Tier 2 80%
	Leadtime for offline units	24 hours Tier 2 only
	Real-time offer considered	Tier 1 & Tier 2 Emergency Max
Planned Outage Exemption	RAN Phase I Enhancement	Yes, with proposed three-level structure