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**VIA ELECTRONIC Submission and Email**

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**Re:** Comments from the Midcontinent Independent System Operator, Inc. (MISO) Regarding the United States Environmental Protection Agency’s Request for Comment re Docket No. EPA-HQ-OAR-2023-0072, 88 Fed. Reg. 33,240 (May 23, 2023) and (June 16, 2023).

The Midcontinent Independent System Operator (“MISO”), a not-for-profit, member-based regional transmission organization (“RTO”), offers these comments on the United States Environmental Protection Agency’s (“EPA”) New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule (“Proposed Rule”).<sup>1</sup>

By way of background, MISO<sup>2</sup> delivers power from the high-voltage transmission grid to local distribution utilities, which then are responsible for delivery to end-use customers. MISO is authorized by the Federal Energy Regulatory Commission (“FERC”) to exercise “functional control” over the high voltage transmission system and otherwise administer the bulk electric system in its region. One of MISO’s critical functions is to facilitate and maintain the reliable delivery of electricity.

MISO acknowledges and appreciates the role that EPA and other governmental agencies play in addressing environmental matters, including grid reliability issues. MISO understands that

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<sup>1</sup> EPA-HQ-OAR-2023-0072, 88 Fed. Reg. 33,240 (May 23, 2023) available at <https://www.regulations.gov/docket/EPA-HQ-OAR-2023-0072> and <https://www.regulations.gov/document/EPA-HQ-OAR-2023-0072-0001>.

<sup>2</sup> MISO is an independent, not-for-profit, member-based organization responsible for managing the power grid across 15 U.S. states and the Canadian province of Manitoba. MISO is both fuel- and technology-neutral. Today, 45 million people depend on MISO to coordinate the generation and transmission of the right amount of electricity every minute of every day. MISO is committed to delivering electricity reliably, dependably and cost effectively. In addition to managing the power grid within its region, MISO administers the buying and selling of electricity at the wholesale level, and partners with members and stakeholders to plan the grid of the future.

some commenters may argue that certain aspects of this Proposed Rule are unlawful and exceed EPA's legal authority. MISO's comments are not aimed at such legal arguments. Instead, MISO's comments focus on the fact that the Proposed Rule as currently written has the potential to trigger material negative impacts to grid reliability. Further, these material negative impacts will likely be amplified by the additive effects of other regulations that EPA has proposed and finalized in the past few years. Accordingly, from MISO's standpoint as a fuel- and technology-neutral system operator, MISO urges EPA to address grid reliability issues that would be caused by the Proposed Rule and exacerbated by other EPA air regulations. These actions to address reliability concerns should occur with the robust and thorough input of affected stakeholders and states as the Proposed Rule and the associated efforts to decarbonize the nation's electric power section extraordinary and technically complex.

### **1. EPA needs to consider reliability impacts related to the Proposed Rule individually and in conjunction with other proposed, pending, or existent regulations.**

The electric grid is undergoing significant fleet changes that creates an immediate need for stakeholders to work together to address and maintain electric reliability. MISO and its counterparts face increasing challenges to system reliability and the ability to commit sufficient resources to supply electricity to customers.<sup>3</sup> Even with the recognized growth of alternative and renewable energy sources, MISO continues to be concerned about the risk of a looming shortfall of resources and attributes needed to ensure grid reliability in the region. Within the MISO region, MISO has seen an increasing trend of retirements of generation that will be needed to provide critical grid services into the near future. These retirements are occurring far faster than new

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<sup>3</sup> Studies conducted by MISO and other Regional Transmission Organizations (RTOs) have verified that their transmission systems are at their capacity and there are financial and other impairments currently impacting the ability to address this lack of capacity issue. MISO's Long Range Transmission Plan details interconnection issues<sup>3</sup> and its Planning Resource Auction (PRA) process shows strains in the availability of sufficient generating capacity to meet the region's needs. *See* MISO's 2022/2023 PRA resulted in a capacity shortfall for the MISO North/Central Regions despite the fact that MISO was able to import over 3,000 MW from neighboring regions. *See, e.g.,* MISO 2022/2023 Planning Resource Auction (PRA) Results, April 14, 2022, *available at* <https://cdn.misoenergy.org/2022%20PRA%20Results624053.pdf>. *See also* MISO 2022/2023 Planning Resource Auction (PRA) Results, Revised May 3, 2022, *available at* <https://cdn.misoenergy.org/20220420%20RASC%20Item%2004b%20PRA%20Results%20Supplemental624128.pdf>. *See* MISO 2022 Regional Resource Assessment (Nov. 2022), *available at* <https://cdn.misoenergy.org/2022%20Regional%20Resource%20Assessment%20Report627163.pdf> (noting an overall decline in accredited capacity in 2022 and near term capacity risk as well as increased complexity of reliability operating and planning the electric system due to changes in generator sources); MISO's Response to the Reliability Imperative (Jan. 2023), *available at* <https://cdn.misoenergy.org/MISO%20Response%20to%20the%20Reliability%20Imperative504018.pdf> (addressing the shared responsibility of shareholders to address the urgent and complex challenges to electric system reliability and noting that the MISO region has been inching ever closer to experiencing a shortfall in electricity-generating capacity due to widespread retirements of conventional resources, not enough replacement capacity coming online, and other factors). FERC also notes backlogs of more than three years in the interconnection queue. *See* FERC Proposes Interconnection Reforms to Address Queue Backlogs, *available at*, <https://www.ferc.gov/news-events/news/ferc-proposes-interconnection-reforms-address-queue-backlogs> (noting significant current backlogs in the interconnection queues of more than three years).

energy sources with equivalent attributes, whatever the fuel source, can be developed, constructed, and brought online. While MISO is both fuel- and technology-neutral, it needs to preserve the best options to provide these needed resource capabilities and attributes to bridge the gap between retirements and replacement capabilities and attributes.

MISO also is concerned about impacts from the Proposed Rule on grid reliability and resource adequacy<sup>4</sup> as MISO is experiencing a trending decline in reserve margin and fewer dispatchable “baseload” resources” (*i.e.*, currently in the form of coal and natural gas). Distinct types of resources are accredited, or count, for different amounts of capacity depending on how reliable they are to be able to generate at the time they are needed. Traditional dispatchable generators like coal and natural gas, tend to have much higher accredited capacity than the replacement capacity that has been brought online in recent years. Replacement of retiring generation with new, mostly intermittent facilities (*i.e.*, solar and wind) that are not installed at the same time or valued at the same output presents its own risks. Moreover, new capacity from these resources is not always available to provide energy during times of need.

Meanwhile, baseload resources with high accreditation values and needed system attributes are being significantly impacted by regulations such as EPA’s Coal Combustion Residuals (CCR) rule. For instance, in the MISO region, the CCR rules is impacting the Dallman, Erickson, Meramec, Ottumwa, Sioux, Belle River, Monroe, and Rainbow Energy Center power plants, which collectively total approximately 9 GW of generator capacity. In comments MISO previously provided to EPA, MISO noted that the potential loss of generation from these resources could be significant given that in the MISO region there is very little excess generating capacity (or none at all) to cover demand for electricity, plus the required reserve margin, in the immediate future.<sup>5</sup> It takes time to obtain the required regulatory approvals to construct new generation and especially any needed transmission facilities to connect that generation to the grid. In the interim, resource adequacy must be maintained, and reliability standards met during this period. Accordingly, the future of the electric grid and associated electric markets depend upon resource availability, flexibility, and visibility. This means that until technology and infrastructure have advanced EPA must acknowledge that there will always be some need for units providing attributes needed for grid reliability, which are currently provided by sources such as coal and natural gas generation units.

The Proposed Rule includes decarbonization goals (*i.e.* a carbon-neutral electricity sector) and relies on fundamental conclusions that carbon capture and sequestration/storage (CCS) and low-greenhouse gas (GHG) hydrogen have advanced to the point where they have been

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<sup>4</sup> Resource adequacy, in general terms, is achieved when the accredited megawatt capacity of the generators in a particular region meets or exceeds the forecasted load, plus reserves, for that region.

<sup>5</sup> MISO refers EPA to its prior comments regarding the impacts from the loss of generation from these generators. See Comments of Midcontinent Independent System Operator (MISO) related to EPA-HQ-OLEM-2021-0588, EPA-HQ-OLEM-2021-0589, EPA-HQ-OLEM-2021-0592, EPA-HQ-OLEM-2021-0593, and EPA-HQ-OLEM-2021-0594, available at <https://www.regulations.gov/comment/EPA-HQ-OLEM-2021-0588-0010>; Comments of Midcontinent Independent System Operator (MISO) related to EPA-HQ-OLEM-2021-0283, EPA-HQ-OLEM-2021-0282, EPA-HQ-OLEM-2021-0280, available at <https://www.regulations.gov/comment/EPA-HQ-OLEM-2021-0283-0016>.

“adequately demonstrated.”<sup>6</sup> Under the Clean Air Act (CAA) to show that a system of emissions reduction is “adequately demonstrated” to be an achievable emission limitation, the system must be “one which has been shown to be reasonably reliable, reasonably efficient, and which can reasonably be expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way.” *See Essex Chemical v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973), cert. denied, 416 U.S. 969 (1974). Yet, these technologies are not yet widespread and are costly. In the Proposed Rule, the EPA justifies its reliance on new technology that is not yet in widespread commercial use on the grounds that the EPA may “hold the industry to a standard of improved design and operational advances, so long as there is substantial evidence that such improvements are feasible.” Proposed Rule, 88 FR 33240 (May 23, 2023) at 33272 (citing *Sierra Club v. Costle*, 657 F.2d 298, 364 (D.C. Cir. 1981)). In this regard, EPA has laid out timelines for the implementation and adoption of low-GHG hydrogen co-firing and CCS technologies at regulated emission units that the EPA projects will provide sufficient time to manufacture the necessary control equipment and ensure that the necessary infrastructure upgrades are made to support these technologies. In essence, EPA assumes that (1) either the development of new technologies will substitute for the resources presently providing these necessary grid services or (2) the retrofitting of these fossil-based resources with either CCS or hydrogen co-firing to control CO<sub>2</sub> emissions will be able to be accomplished in an economic manner within the timeframes specified for compliance in the Proposed Rule. None of the proposed timeframes adequately consider the great risk related to EPA’s assumptions as to technology timelines. In fact, the Proposed Rule’s Best System of Emission Reduction (BSER) determination seems overly optimistic regarding the commercial viability of CCS and hydrogen co-firing today and downplays the cost<sup>7</sup> and practicalities of developing entirely new supporting infrastructure within the time frames and at the costs projected. EPA’s Proposed Rule thus could, and likely will, undermine the mission of providing reliable power to the communities and consumers that MISO and others serve.

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<sup>6</sup> Clean Air Act (CAA) section 111 outlines a two-step process for establishing a standard of performance for emissions from electric generating units (EGUs). Under the first step, EPA determines the “best system of emission reduction” (BSER) for the relevant pollutant that is “adequately demonstrated,” taking into consideration cost, any non-air quality health and environmental impacts, and energy requirements. EPA then sets a standard that quantifies the “degree of emission limitation achievable through the application” of the BSER. Sources subject to the standard of performance can use any system of reduction to meet the limit; they are not required to use the system EPA determined is the BSER.

<sup>7</sup> MISO acknowledges that while the federal government has made a significant and welcomed contribution to the development of new technologies that would provide equivalent grid services, there is not sufficient demonstration in the record of their economic viability at reasonable cost to customers to address the reliability impacts identified herein. In this regard, the EPA’s heavy reliance on the recently enacted Inflation Reduction Act and Infrastructure Investment Jobs Act (the “Acts”) to satisfy the “adequately demonstrated” requirement and determine feasible timelines is misplaced. While MISO acknowledges that these laws will provide tax credits and funding for some CCS and low-GHG hydrogen production, there is much unknown as to infrastructure needs and timing, technology development time frame, as well as ultimate costs for necessary work. Overall, the Proposed Rule gives inadequate consideration of the significant cost and difficulty of building out entirely new infrastructure to support either the delivery of hydrogen as a fuel at the levels called for or the sequestration of carbon at levels called for in the Rule.

While MISO refers EPA to its joint comments with other grid operators<sup>8</sup> for additional flexibility considerations and thoughts as to the concerns regarding EPA's assumptions and proposals, MISO will note here that EPA's underlying assumptions for the Resource Adequacy Analysis are extremely dependent on modeling the Inflation Reduction Act (IRA) in the base case, which masks the impact of the Proposed Rule by assuming that the retirements have occurred independent of the Proposed Rule. Because the base case shows significant coal and nuclear retirements, renewable and storage additions, and a significant decline in energy generated from natural gas while natural gas capacity significantly increases, the resulting comparison to the modeled proposal shows negligible impact to the system. This ignores the cumulative impact of the various EPA rules and their intertwined nature, leaving an incomplete picture of the impact of the Proposed Rule on unit retirement decisions and resource adequacy.

## **2. Flexibility and Adjustments are Needed to the Proposed Rule for Grid Reliability and to Support Decarbonization Goals**

It is imperative that EPA revise the Proposed Rule to further consider the need for reliable generating resources for the regional reliability value provided to customers. MISO is concerned that the Proposed Rule may force the premature closure of dispatchable power plants while also making it harder to fund, permit, site, and build critical new resources. MISO has already observed the retirements of generators well before the end of their useful lives as a result of reluctance of investors to make the commitments needed to keep these capital-intensive resources operating. There is true concern regarding the chilling impact of the Proposed Rule (and the cumulative effect of all of the recent EPA rulemakings) on attracting investment to maintain existing units within the current fleet as well as planned or proposed resources. Furthermore, this chilling effect extends to investment in maintaining a reliable fuel supply chain. A reliable fuel supply is just as necessary as a reliable generation fleet.

Given the changes to the generating fleet, the potential shortfalls in generating capacity, and the existing regional supply situation, resources need to remain online and available to provide the necessary grid attributes including critical capacity and transmission grid stability to meet the system's needs until sufficient replacement capability is brought online. Furthermore, the current exceptions provided by EPA for reliability fail to address the chilling effect on investment in needed current — as well as planned or proposed — resources that occurs months and years before based on investors' assessment of the long-term financial viability of the resource. Certainty is needed for adequate investment to occur.

Robust grid reliability considerations need to be further built into the Proposed Rule, and subsequent regulations, which go beyond EPA's past attempts to address grid reliability solely through limited workarounds like commitments to enforcement discretion or the scheduling of compliance dates. Such considerations must integrally take into account the need for generation

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<sup>8</sup> See Joint Comments of Electric Reliability Council of Texas, Inc.; Midcontinent Independent System Operator, Inc.; PJM Interconnection, L.L.C; and Southwest Power Pool, Inc., available at EPA Docket No. EPA-HQ-OAR-2023-0072.

unit certainty as investment decisions are made months if not years ahead of time based on the forward forecast of the viability (*i.e.*, lifespan of operation) of a given set of units. While recent legislation will provide funding for the development of new technologies, it is not enough to support all the changes that are needed.

Furthermore, the future of the electric grid and associated electric markets depend upon resource availability, flexibility, and visibility. This means that until technology and infrastructure have advanced, EPA must acknowledge that there will always be some need for dispatchable, or flexible, units to ensure grid reliability and adequacy. MISO's information (Future 2A)<sup>9</sup> demonstrates that a significant amount of flexible capacity must remain as part of the portfolio through the next 20 years to support the goals of our footprint. Studies conducted on integrating increasingly higher penetrations of renewable resources into the grid have found that as the resource mix continues to evolve, it is crucial for reliability purposes to maintain certain levels of resources with attributes such as firm fuel supply, quick start-up and ramping capabilities, synchronous connection to the grid, and ability to operate for both short and long periods of time. Currently, natural gas-fired combustion turbines, and at times coal, are a major source of these needed reliability attributes. Someday, other types of resources such as long-duration battery storage may become commercially and economically viable enough to provide these critically needed attributes at grid scale. But until that happens and to support the energy transition and policy goals, the only current sources of these needed attributes—such as existing natural-gas combustion turbines—must be maintained for reliability purposes to address the intermittent nature of renewables. Additionally, there may also be a need to build new natural gas combustion turbines in the coming years to ensure that grid reliability is not jeopardized as emerging technologies with needed reliability attributes continue to mature towards grid-scale viability.

As previously stated, MISO is sensitive to and suggests avoiding sending signals to the market that would further discourage the investments necessary to develop new and maintain key flexible facilities and resources during this transition. Capital investments are critical to support reliability, and that must remain in place for the next 20 years. It becomes a *catch-22* when resources needed to facilitate the same decarbonized future do not have the market and/or regulatory certainty to attract and recover capital costs if regulations are eliminating that same certainty needed to facilitate the decarbonization transition. Without flexible capacity, the risk increases to customers and the provision of electric service to industry, business, and residential customers in the

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<sup>9</sup> All transmission planning at MISO, and similar organizations, is dependent upon the type, location, and quantity of future generation. Futures are forward-looking planning scenarios used to understand what generation fleet and load landscapes could look like twenty years into the future. They allow MISO to bookend the uncertainty of the future generation and load portfolio by defining a range of potential plausible outcomes based on resource plans announced by member utilities and states. The Futures development process considers economic, policy and technological changes over time to model economic generation capacity expansion. They allow for multiple rates of change for load growth, generator retirements, fuel prices, pollution reduction, renewable energy levels and other factors. Even then, the Futures process is not perfect and will be impacted by unanticipated events or changes. MISO has three Futures that can be used as inputs in reliability and economic models to see the transmission issues that arise in the base case and to assess potential solutions in the change case studies. Futures 1, 2 and 3 reflect different decarbonization goals, generation mixes, load growth, and levels of achieving state and utility announcements. MISO directs EPA to <https://help.misoenergy.org/knowledgebase/article/KA-01394/en-us> for further information on Futures.

Midcontinent and other regions. These risks are discussed in more detail in the joint comments that MISO and other grid operators submitted on EPA's Proposed Rule.<sup>10</sup> In those joint comments, MISO and other grid operators propose several provisions that EPA could incorporate into the Proposed Rule that would help maintain grid reliability as the fleets of generating resources in the grid operators' respective regions continue to evolve.

Beyond reliability maintenance, MISO and its fellow grid operators also believe their proposed revisions to EPA's Proposed Rule would help the utilities and states in the grid operators' respective regions to make faster and more substantial progress towards achieving their decarbonization goals and other policy objectives. The grid operators' proposals would do that by providing additional regulatory flexibility that utilities and states in their regions could leverage to achieve their decarbonization goals in a reliable manner.

In the MISO region, MISO planning tools such as the studies Regional Resource Assessment, the MISO Futures, and the MISO Generator Interconnection Queue clearly indicate that the region's utilities and states intend to continue to decarbonize their resource fleets going forward—regardless of any EPA rules to compel that course of action. Thus, incorporating regulatory flexibility into the Proposed Rule would not derail the profound energy transition that is already well underway in the MISO region; it would instead help ensure that this transition occurs in a reliable manner.

### 3. Conclusion

In summary, MISO notes that the best course of action for grid reliability and adequacy going forward is for EPA to incorporate changes to the Proposed Rule set out in the joint comments that MISO and other grid operators submitted on EPA's Proposed Rule.

If you have any questions about MISO's comments, please contact Timothy Caister at [tcaister@misoenergy.org](mailto:tcaister@misoenergy.org).

Sincerely,

*/s/ Timothy R. Caister*

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<sup>10</sup> See Joint Comments of Electric Reliability Council of Texas, Inc.; Midcontinent Independent System Operator, Inc.; PJM Interconnection, L.L.C; and Southwest Power Pool, Inc., available at EPA Docket No. EPA-HQ-OAR-2023-0072.