UNITED STATES OF AMERICA
BEFORE THE
DEPARTMENT OF ENERGY

Accelerating Speed to Power/Winning	**)**	
the Artificial Intelligence Race: Federal	**)**	**DOE_FR DOC. 2025-18058**
Action To Rapidly Expand Grid	**)**	
Capacity and Enable Electricity	**)**	
Demand Growth	**)**	

RESPONSE OF THE MIDCONTINENT INDEPENDENT SYSTEM OPERATOR, INC. TO REQUEST FOR INFORMATION

The Midcontinent Independent System Operator, Inc. ("MISO") respectfully submits the following comments in response to the September 18, 2025 Request for Information ("RFI") inviting public input on: (1) large-scale generation, transmission, and grid infrastructure projects that can accelerate speed to power to support manufacturing, industrial, and artificial intelligence/data center electricity demand growth; and (2) how to best utilize its funding programs and authorities to rapidly expand energy generation and transmission grid capacity to meet electricity demand growth across the country in a reliable and affordable manner.

MISO is the nation's first Federal Energy Regulatory Commission ("Commission") approved Regional Transmission Organization ("RTO") and is responsible for operating the electric grid and administering wholesale electricity markets for the central United States.[1] MISO is a non-stock, not-for-profit corporation. MISO operates independently of any market participant and is a "public utility" under the Federal Power Act, with its activities and Tariff subject to the Commission's exclusive oversight and regulation.[2] Within its geographical footprint, MISO is responsible "for planning, and for directing or arranging, necessary transmission expansions, additions, and upgrades . . . and [to] coordinate such efforts with the appropriate state authorities."[3]

MISO appreciates the Department of Energy's ("DOE") efforts to help facilitate efficient large load interconnections and provide speed to power. As an RTO, MISO leverages technology and ongoing process improvements, and conducts long-term planning, to support the states' resource adequacy role and the obligation of load serving entities ("LSEs") to serve their end-use customers. MISO has worked constructively with its members, states and new large loads to develop numerous process improvements that work effectively within the MISO's region, leveraging its unique circumstances and characteristics. MISO has been informed by actions across the nation and has observed how differing infrastructure planning processes, as well as state retail regulatory environments and resource adequacy constructs have impacts on the challenges for integrating large loads onto the system.

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1 *See* Midwest Indep. Transmission Sys. Operator, Inc., 97 FERC ¶ 61,326 (2001).

2 *See* 18 C.F.R. § 35.34(j)(1); 16 U.S.C. § 824(e).

3 18 C.F.R. § 35.34(k)(7).

In the MISO region, states are primarily responsible for resource adequacy, which involves overseeing LSEs and ensuring LSEs plan for and secure enough power to meet their customers' demand. LSEs in the MISO region, which operate under their respective state's jurisdictional authority, typically work directly with new large loads to bring them online. Additionally, once MISO's annual transmission planning process is complete, MISO members are given notices to construct the approved transmission projects; MISO members then petition their respective states for approval(s) for permitting, siting, and construction. Consequently, MISO does not have access to some of the information requested in the five enumerated questions in the RFI. Nonetheless, MISO has attempted to provide information that is responsive to the RFI. As a part of its response, MISO:

- Provides background on its existing processes that effectively facilitate large load interconnections, explains why the continuation of those processes is critical, and discusses ongoing efforts to develop enhancements for large load interconnections.

- Discusses the MISO-Southwest Power Pool ("SPP") Joint Targeted Interconnection Queue ("JTIQ") Portfolio #1, which: (1) are five high voltage transmission projects located along the SPP-MISO seam that address significant barriers to the development of new generation along the MISO-SPP seam; (2) were approved for $464.5 million in Grid Resilience and Innovation Partnerships ("GRIP") program funds, enabling approximately 28.6 gigawatts ("GW") of generation to interconnect; and (3) the continuation of the GRIP program funds is key to enabling this significant generation to interconnect.

I. The Efficient Integration Of Large Loads Depends On MISO Being Able To Continue Using Its Existing Processes, As Well As Work With MISO Stakeholders To Develop Potential Enhancements For Commission Acceptance.

In this section, MISO first provides an overview of its existing processes that effectively facilitate additions of large loads and support MISO's unique infrastructure and regulatory environment. Since 2022, these processes have approved approximately 17 GW of new large load additions in MISO.[4] MISO also provides a summary of current efforts to develop potential enhancements.

A. MISO's existing processes effectively facilitate interconnection of large loads.

Transmission and generation are critical enablers to facilitate the interconnections of large loads. MISO has updated and enhanced its processes across the transmission and resource planning horizons to efficiently support large load additions and improve the integration of large loads. Below MISO provides a summary of its existing processes.

[4] For comparison purposes, the net summer peak load for the state of Arkansas in 2025 was 15.9 GW. https://www.eia.gov/electricity/state/.

i. MISO has enhanced its generator interconnection processes to help bring new generation online more quickly.

One of the challenges of large load additions is that typically large loads desire to be served quickly, so any delays in generation interconnection analysis or the construction of necessary transmission upgrades can create challenges. Therefore, MISO has undertaken several enhancements to its generator interconnection process to allow generation to come online more quickly and better align with the time frames for large load additions in the MISO regions. Those unique regional efforts include:

- The Expedited Resource Addition Study ("ERAS") process, which is a temporary, targeted process that allows certain generation projects to utilize ERAS instead of the standard, often backlogged, interconnection queue to obtain a Generator Interconnection Agreement faster and connect to the grid in significantly less time. MISO has 52 active ERAS applications across 12 states for approximately 26 GW of proposed new generation capacity. The studies for the first 10 applications have been completed and are now in the generator interconnection agreement phase. Figure 1 provides a map of the active ERAS applications.

- The MISO-Southwest Power Pool JTIQ Study, which is an innovative study process that facilitates more timely interconnection study processes and identifies larger, more comprehensive transmission projects to allow future interconnection requests to occur at lower costs than what would be achieved through the ordinary process of studying individual groups of Interconnection Requests for the smaller upgrades that those projects typically require. The JTIQ portfolio of upgrades[5] are scoped to enable multiple clusters of generation and are included in going forward models for transmission planning and generation interconnection, including the models for the DPP 2023 cycle[6] and ERAS studies. JTIQ will enable generation to come online faster, provide greater upfront cost certainty for the resources needed to enable large load additions, and provide millions of people across the SPP/MISO seam more affordable, reliable and abundant power.

- Revisions to MISO's standard interconnection process, including: (i) increased milestone payments; (ii) automatic withdrawal penalties; (iii) increased withdrawal penalty provisions; and (iv) expanded site control requirements for interconnection facilities. These enhancements significantly improve queue speed by deterring speculative projects and streamlines the process for those projects that are viable and needed.

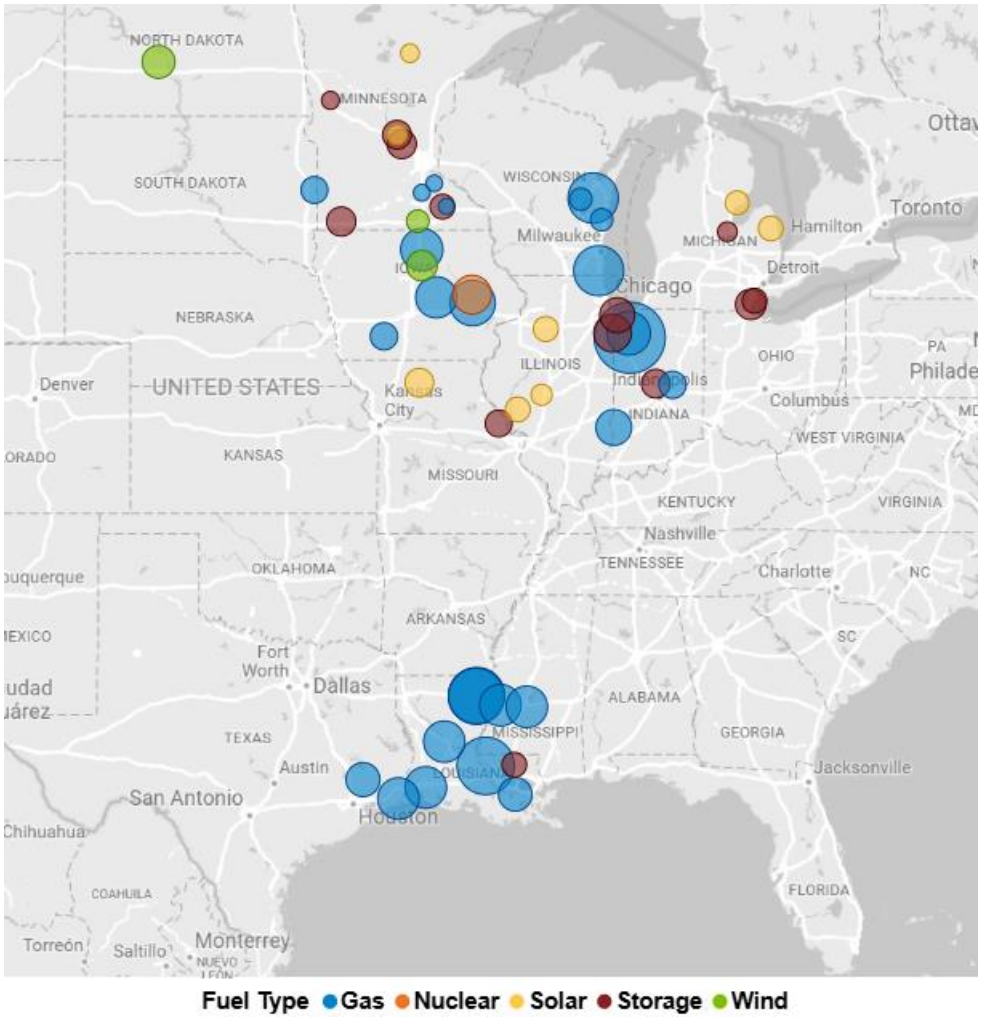
[5] As discussed further below, this portfolio is referred to as JTIQ Portfolio #1.

[6] DPP 2023 began on September 30, 2025.

Additionally, starting with the 2025 DPP cycle, MISO will begin limiting the amount of interconnection requests that will be studied in any given DPP cycle. Reducing the amount of new generation studied at a time will result in more realistic study results and cost estimates, less constraints that require new network upgrades, and faster study results.

- Utilization of the Suite of Unified Grid Analyses with Renewables or "SUGAR" platform from Pearl Street Technologies to process and speed up the large backlog of generator interconnection studies. SUGAR automates the creation and operation of power flow models, and identifies transmission constraints and potential mitigation solutions, significantly reducing the time needed for the initial phases of the interconnection study. This technological integration helps MISO better manage the high volume of interconnection requests and will assist in meeting the goal of achieving a one-year study timeline for new generation projects.

Figure 1 – Map of Active ERAS Applications



ii. MISO's existing transmission planning processes help facilitate large load additions in a timely manner.

While discussion of generation needs associated with large loads has gotten significant attention, it is critical not to overlook the role a robust transmission system plays in ensuring a resilient and cost-effective foundation to meet this new load growth. The robust MISO transmission system allows these new loads to leverage the efficiencies associated with demand and supply side diversity across a wide footprint resulting in lower energy costs, lower required resource planning reserve margins and increased reliability of supply. On the transmission planning side, MISO currently has three avenues to determine the necessary and most cost-effective transmission system improvements for large load interconnections:

1. The annual MISO Transmission Expansion Plan ("MTEP"), where MISO reviews both NERC driven and Transmission Owner projects to ensure reliability is maintained.

2. The Expedited Project Review ("EPR") process, which allows an expedited review for Transmission Owners who must start construction on the transmission projects to support large load additions more quickly than would be enabled under normal MTEP timelines; and

3. MISO's Long Range Transmission Planning ("LRTP"), which takes a long-range (roughly 20- to 40-year) view of the system to address future issues and provides flexibility to the electrical grid by enabling the integration of diverse energy sources and creating a robust, resilient system capable of adapting to future changes, including the implementation of large load additions.

These processes work in conjunction with, and build upon, each other. For example, the results of one MTEP cycle, build on the next. Additionally, large loads may site where backbone transmission developed through the LRTP process will be built; these loads would then be able to rely on the LRTP transmission as they build their site-specific upgrades through the MTEP or EPR processes.

These processes form a solid foundation, and one which MISO continues to enhance in coordination with our stakeholders. For example, in 2024 and 2025, MISO collaborated with stakeholders to implement enhancements to the existing EPR process due to the consistent increase in EPR applications (as depicted in Table 1), which reflects the increased proliferation of data centers and other large loads.

Table 1 – Approved EPRs

Cycle	Projects	Load (MW)	Investment ($M)
2021	17	229	233

Cycle	Projects	Load (MW)	Investment ($M)
2022	16	570	215
2023	36	1231	570
2024	23	3391	947
2025	49	9704	5035

The EPR enhancements:

1. Provide consistent reliability analysis while recognizing the overall impacts of multiple large loads to our system through appropriate clustering;

2. Enable MISO to create sequential and well-defined study cases for EPRs on an every-other-month basis, including prior-approved EPRs, generators with interconnection agreements, and new EPRs requesting approvals; and

3. Enable MISO to quickly approve new requests, with opportunities for EPRs to potentially be recommended for approval monthly, depending on the complexity of the study and the solutions identified to support the new load.

B. <u>MISO efforts to develop potential enhancements</u>.

As demonstrated above, MISO's existing processes are effective at integrating new large loads onto the system. MISO also consistently works with stakeholders to ensure such processes continue to meet the needs of MISO's system, its states, and members. MISO is able to tailor effective solutions based on MISO's unique infrastructure and retail regulatory environment. To that end, MISO is currently working on several efforts to potentially enhance its existing processes. Those efforts include:

- Refining load forecasting and utilizing more granular information for large loads;
- Expanded outreach to members to help facilitate the addition of new large loads;
- Identifying a minimal set of reliability requirements needed for large loads to reliably materialize within the MISO footprint; and
- Creation of flexible and timely interconnection options to support interconnection of large loads, including:

    - Developing a "zero-injection generator interconnection agreement" proposal for generation co-located with load, which

would allow: (1) a generator to serve load directly but grants no interconnection service and would prevent the generator from injecting onto the transmission system; and (2) allow processing of the generator request outside the standard queue process, since the transmission system would not be utilized by the generator.[7]

- Developing other solutions to allow partial interconnection and more efficient solutions to generation and load co-location.

While these efforts are ongoing, on October 23, 2025, the DOE issued a letter to the Commission, requesting the Commission to implement potential reforms to standardize interconnection procedures and agreements for large loads, including large loads that seek to share a point of interconnection with new or existing generation facilities, to ensure the timely and orderly interconnection of large loads to the transmission system. While MISO appreciates the DOE's goal to help facilitate large load interconnections and deliver "speed to power", given the effectiveness of MISO's existing processes, as well as the ongoing enhancement efforts, MISO is concerned that standard large load interconnection procedures would be counterproductive by: (1) implementing a "one-size fits all" process that does not reflect the unique facts and circumstances of MISO's system, its states, and members; (2) introducing new work and obligations for large load customers and MISO that does not currently exist today; and, consequently, (3) resulting in *delays* in interconnecting large loads.

In lieu of requiring a standard large load interconnection process, MISO respectfully recommends that the DOE and Commission support: (1) MISO utilizing existing processes that effectively integrate new large loads; as well as (2) the development of timely regional solutions effectively tailored to meet identified challenges within each region's unique regulatory and infrastructure environment. MISO has already commenced discussions to address these issues, and is developing appropriate solutions, through its stakeholder processes.[8] The flexibility for MISO to continue to utilize processes that reflect the unique circumstances of MISO's members, states, stakeholders, and transmission systems will allow the most efficient interconnection of large load additions.

II. MISO RESPONSES TO RFI QUESTIONS

1. Large-Scale Generation and Transmission Projects To Enable Load Growth

a. Please identify any specific large-scale generation, transmission, and grid infrastructure proposed projects (under development, in planning, or construction-ready) that should be considered and prioritized by DOE for

[7] MISO notes that its Board of Directors has also made commitments to implementation of enhancements for large load interconnections. The commitments include: (1) strategic priorities of the Markets Committee to address operational risks from large load additions on ramp, adequacy, and stability; and (2) addressing Market Participation and Registration of Co-Located Load and Generation as a part of the Planning Subcommittee.

[8] MISO currently envisions making a filing in 2026 to request Commission acceptance of Tariff revisions to implement enhancements for large load additions.

siting and permitting support, technical assistance, and/or Federal funding (see Section V of this document, "Confidential Business Information," regarding protection of information and how to submit confidential or proprietary information).

i. **Project region, name, geographical location, and description, including detailed maps or geospatial data of the project, if available.**
ii. **Project type and size (*e.g.,* 100-mile 500 kV transmission line, 1.1 GW nuclear plant, 20 GW data center/grid corridor, etc.).**
iii. **Current development stage (*e.g.,* conceptual, environmental planning and permitting, financing, construction-ready).**
iv. **A description of how the project is critical to meeting confirmed or anticipated large electric loads.**
v. **A description of how DOE financial assistance, loan guarantees, or technical assistance could support the project.**
vi. **Estimated cost and project timeline.**
vii. **Any prior tribal engagements (if applicable).**
viii. **Size and characteristics of the load(s) the project is intended to serve.**
ix. **Likely clients/project partners.**
x. **Amount of funding/capital raised.**
xi. **Siting and permitting status.**
xii. **Interconnection status.**
xiii. **A description of any Federal, state, or local barriers or dependences to project completion.**
xiv. **A description of whether the project has engaged with any DOE programs (*e.g.,* LPO financing, GRIP, TFP, etc.).**

MISO Response:

Below MISO describes two large scale portfolios of transmission projects that resulted from comprehensive, stakeholder driven, and collaborative transmission planning processes and will provide significant reliability and economic benefits. In addition, these portfolios of transmission projects are critically needed to help ensure the success of the United States in the global competition for economic development, such as in artificial intelligence and creating manufacturing and industrial jobs.

a. JTIQ Portfolio #1

The transmission system is at its capacity along the SPP-MISO seam. As a result, the network upgrades needed to accommodate new resource additions to the MISO system—including affected systems network upgrades—have become increasingly large and difficult to predict. At the same time, SPP and MISO are experiencing significantly increasing demand from resources seeking to interconnect to their respective transmission systems—including along the SPP-MISO seam—as well as extremely large increases in interconnection queue size and overall demand for electricity. For example, demand for thermal capacity has been surging in both SPP and MISO. MISO has seen more requests for thermal capacity in 2024 and 2025 (35,610 MW) than in the previous 10 years combined. In addition to the increase in generation requests, increasingly

volatile weather patterns have led to more frequent extreme weather events making load more difficult to forecast and adding more strain to the existing transmission system. These factors have combined to increase the cost, study time, and uncertainty for generation interconnection on this part of the transmission system. This creates challenges especially for the larger loads and generation interconnections that are often the greatest drivers of network upgrade costs. MISO and SPP have been proactive in addressing these challenges through the JTIQ effort.

In mid-2020, SPP and MISO began working together to jointly identify transmission projects required to address significant transmission limitations restricting the opportunity to interconnect new generating resources near the SPP-MISO seam. The goal was to identify large scale transmission projects that could unlock capacity for significant new generation additions more efficiently than the one-off solutions for individual projects that often drove lengthy affected system study delays. Through this collaboration, the RTOs identified numerous potential JTIQ projects and ultimately resulted in five 345 kilovolt (kV) transmission projects, referred to as JTIQ Portfolio #1:

JTIQ Portfolio #1 Projects	**Location by RTO**
Bison – Hankinson – Big Stone South 345 kV	MISO
Lyons Co - Lakefield 345 kV	MISO
Raun – S3452 345 kV	MISO - SPP
Auburn – Hoyt 345 kV	SPP
Sibley 345 Bus Reconfiguration	SPP

The JTIQ Portfolio #1 projects are located in the MISO Midwest and SPP North subregions. The estimated cost of JTIQ Portfolio #1 is $1.6 billion. JTIQ Portfolio #1 addresses significant barriers to the development of new generation along the MISO-SPP seam, enabling approximately 28.6 GW of generation to interconnect.[9] JTIQ will enable generation to come online faster, provide greater upfront cost certainty for the resources needed to enable large load additions, and provide millions of people across the SPP/MISO seam more affordable, reliable and abundant power. In addition, the JTIQ Portfolio #1:

- Improves upfront cost certainty for generator interconnection projects in MISO and SPP.
- Improves timing certainty for generator interconnection projects in MISO and SPP by eliminating the most common sources of delays—affected system studies.
- Shortens processing time, and reduces potential for delays.

[9] In summary, the JTIQ framework assigns Interconnection Customers a per-MW charge to help build these large upgrades at the time they enter the queue and in exchange excusing those Interconnection Customers from ordinary affected systems studies between MISO and SPP.

- Optimizes network upgrades along the MISO-SPP seam through transmission upgrades that can do more than benefit only a specific generation project or small group of such projects.
- Supports resiliency during extreme weather events through increased regional transfer.
- Provides significant estimated market savings.

In April 2023, the Minnesota Department of Commerce, as lead applicant, along with SPP, MISO, and the Great Plains Institute applied for a grant under DOE's GRIP Program under the Bipartisan Infrastructure Law, section 40103(b),[10] that would help enable the construction of the JTIQ projects. On October 18, 2023, DOE selected the JTIQ application under the GRIP Program.[11] DOE announced that it would grant up to $464.5 million in matching federal funds for the construction of these projects.[12] On November 13, 2024, the Commission accepted revisions to the SPP and MISO joint operating agreement, which formally established the JTIQ framework.[13]

Because the GRIP funding provides approximately 25% of the total JTIQ project costs, continuation of the GRIP funding: (1) would be a significant offset of capital costs that otherwise would be paid by customers, and (2) is a meaningful way for the DOE to support manufacturing, industrial, and artificial intelligence/data center electricity demand growth. Given that the first generators are only now subscribing to JTIQ, MISO and SPP are at the beginning of realizing the JTIQ benefits and the DOE's support will have a present and measurable impact. Consequently, MISO requests that the $464.5 million in GRIP funding continue to be applied towards JTIQ Portfolio #1.

b. LRTP Tranche 2.1

Pursuant to its Tariff, MISO undertakes long range transmission planning (as noted above, also referred to as "LRTP") that focuses on the development of robust solutions that proactively address future reliability challenges posed on the system, including those driven by load growth, resource plans, and member policy objectives. LRTP provides a comprehensive, forward-looking assessment of future needs based on a range of anticipated future conditions that identify the "least regrets" regional transmission expansion providing a range of benefits to maintain reliable performance under a range of operating conditions, cost efficient energy delivery, accessibility to

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[10] Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021).

[11] *Biden-Harris Administration Announces $3.5 Billion for Largest Ever Investment in America's Electric Grid, Deploying More Clean Energy, Lowering Costs, and Creating Union Jobs*, United States Department of Energy (Oct. 18, 2023), https://www.energy.gov/articles/biden-harris-administration-announces-35-billion-largest-ever-investment-americas-electric?utm_campaign=&utm_content=1697666221&utm_medium=U.S.+Department+of+Energy+%28DOE%29&utm_source=linkedin.

[12] *Fact Sheet: Grid Resilience and Innovation Partnerships Program*, United States Department of Energy (Oct. 2023),https://www.energy.gov/sites/default/files/2023-10/DOE-GRIP-Minnesota-Department-of-Commerce.pdf.

[13] *Midcontinent Independent System Operator, Inc.,* Order on Tariff Revisions, Docket Nos. ER24-2797-000, ER24-2871-000, ER24-2798-000, and ER24-2825-000, 189 FERC ¶ 61,108 (2024), *order on reh 'g*, 190 FERC ¶ 62,015 (2025).

resources, and flexibility in resource mix. MISO's LRTP process is a partnership with the MISO members and states to identify a transmission system that can reliably and efficiently serve load with the resources identified in the MISO Futures. The LRTP process results in portfolio of projects, which are a group of transmission projects whose benefits are spread broadly across the MISO footprint or subregion and whose benefits exceed its costs at a cost-benefit ratio of 1.0 or greater.

Development of LRTP portfolios takes years to complete and follows a comprehensive, stakeholder-driven, seven-step process that defines a range of potential snapshots, or future scenarios, of what the transmission system may look like 20 years in the future, to identify issues in the reliable and efficient transmission of energy from generation to load in these scenarios, and to propose solutions that maintain reliability while lowering total delivered wholesale energy costs. At the end of the stakeholder-driven process, the MISO Board of Directors independently reviews and considers whether to approve the portfolio of projects. There have been two LRTP portfolios approved by the Board of Directors – Tranche 1.0 in July of 2022 and Tranche 2.1 in December of 2024. The portfolio of projects from Tranche 1.0 is nearly complete in terms of certification proceedings by state jurisdictions.

LRTP Tranche 2.1 reflected 40,000 hours of staff work, more than 300 meetings and discussions with stakeholders. LRTP Tranche 2.1 consists of a 3,631-mile 345 kV and 765 kV backbone that ensures future reliability while providing benefits that exceed costs. It includes a $21.8 billion (in 2024 dollars) investment for 24 projects and 323 facilities across the MISO Midwest subregion. The benefit to cost ratio of Tranche 2.1 is 1.8 – 3.5 – meaning that for every dollar spent on Tranche 2.1, benefits of $1.80 - $3.50 are estimated to be received.

Tranche 2.1 will provide significant reliability and economic benefits. Additionally, Tranche 2.1 strengthens the region's competitiveness in attracting energy-intensive industries—such as manufacturing and data centers—positioning the transmission investment as a driver of long-term economic development. LRTP works in conjunction with other MISO transmission planning processes to facilitate the siting of large load additions where the backbone transmission developed through the LRTP process will be built; these loads will be able to rely on the LRTP transmission as they build their site-specific upgrades.

On July 30, 2025, nearly eight months after LRTP Tranche 2.1 was approved by the Board of Directors, a complaint was filed at FERC by five state commissions, who disagreed with various models and planning assumptions that MISO used to study and develop Tranche 2.1. MISO, as well as numerous entities in support of LRTP Tranche 2.1, filed responses to the Complaint demonstrating, among other things, that Tranche 2.1: (1) was developed through a comprehensive, multi-year, seven-step iterative process that relied upon extensive, significant stakeholder input and review; and (2) provides backbone transmission infrastructure with significant reliability and economic benefits, including assisting with meeting load growth from data centers, AI, cryptocurrency, and reindustrialization. The responses to the Complaint demonstrated the significant disruption and far-reaching consequences that would result if the Complaint is upheld and Tranche 2.1 is eliminated; including delays to the ERAS and EPR processes described above; disruption of prospective transmission planning in MISO; as well as the nullification of significant

time, resources, work, and expenditures undertaken by MISO members to pursue the portfolio of projects.

MISO members are adept at efficiently seeking and receiving state regulatory authorizations to site and construct new transmission projects, such LRTP Tranche 2.1. Therefore, DOE assistance with local or state siting or permitting is not needed. However, the Complaint could delay (and potentially eliminate) the implementation of critical transmission infrastructure, as well as creates a chilling precedent not only in MISO, but across the nation, as transmission investment will be a key enabler of the robust energy future needed to support America's leadership in artificial intelligence and industry more broadly. Urgent action is needed to ensure all parties can move forward with these critical projects.

2. **High-Priority Geographic Areas for Targeted DOE Investment**

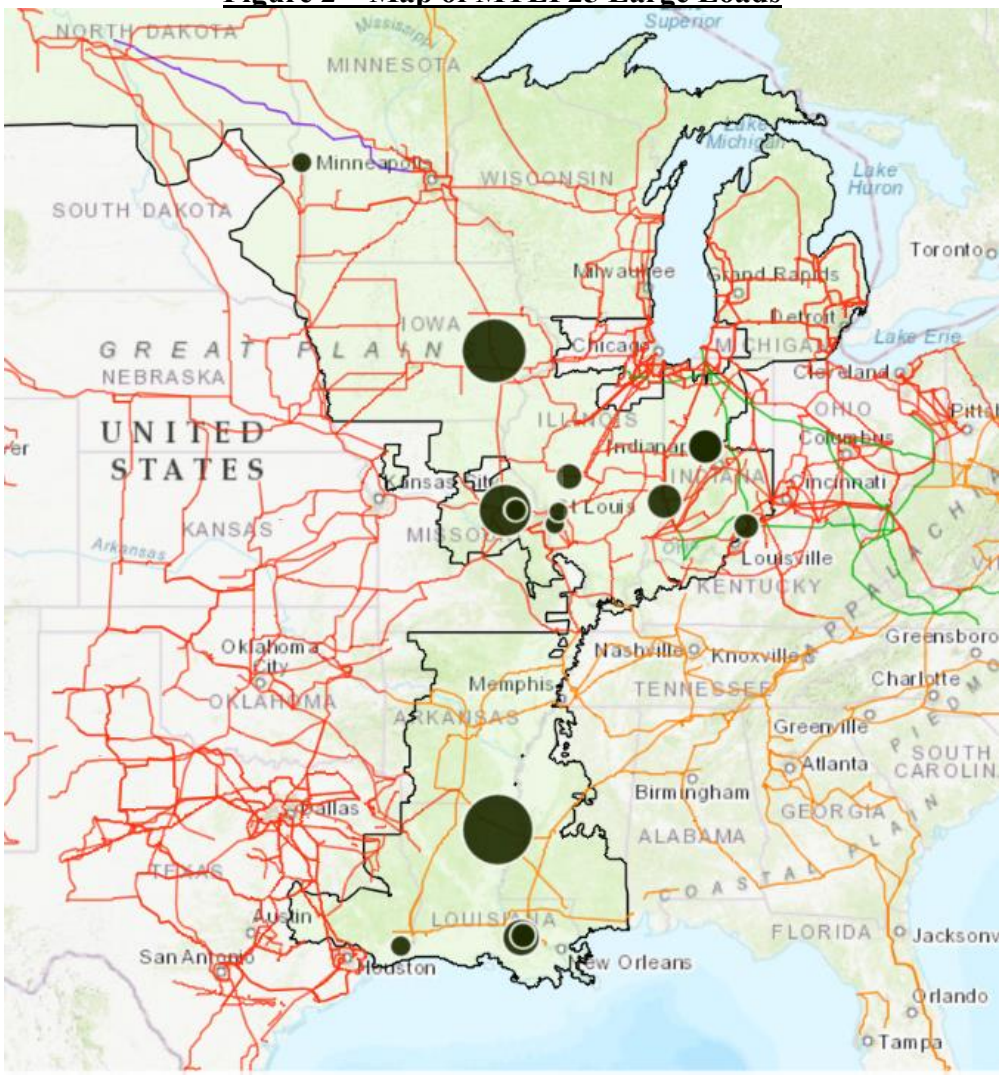
   DOE is interested in identifying geographic areas or zones where targeted Federal investment in transmission, generation, or grid infrastructure could unlock or accelerate large-scale economic activity tied to electric load growth. These may include regions experiencing substantial near-term demand from data centers, manufacturing, or other large load users, as well as areas with untapped development potential constrained by inadequate grid infrastructure.

   a. **Are there specific geographic areas or high-priority zones (*e.g.,* data center corridors, semiconductor clusters, industrial parks, port complexes, etc.) where:**
      i. **Major electric loads are expected or already committed?**
      ii. **Grid constraints (transmission, generation, or other grid infrastructure) are limiting or delaying economic development?**
      iii. **DOE investment (financial assistance, loan guarantees, siting and permitting support, technical assistance, etc.) could be targeted to unlock high-value or private investment?**
   b. **For each specific high-priority zone, please identify the characteristics of the geographic area that support prioritization by DOE, including:**
      i. **Amount of confirmed or anticipated electric load.**
      ii. **Availability of energy supply and electricity generation capacity.**
      iii. **Generation, transmission, or grid infrastructure projects in development that could serve large electric loads.**
      iv. **Grid constraints that may be alleviated with DOE investment and technical assistance.**
      v. **Existence of other infrastructure to support build out (*e.g.,* water resources, telecommunications, etc.).**
      vi. **Any existing planning efforts by states, local jurisdictions, electric utilities, grid operators to identify and designate investment zones or corridors.**

   MISO Response:

In response to this question, MISO provides a map of the large loads that have been studied in its footprint (through the MTEP and the EPR process). The map illustrates where large-scale economic activity tied to electric load growth is occurring in MISO, as reviewed in the 2025 cycle of the MTEP.

Figure 2 – Map of MTEP25 Large Loads



Circles represent loads between 100 – 1,800 MW

3. **Use of DOE Funding, Financing, and Technical Assistance**

   a. **In what specific ways can DOE support the development and deployment of large-scale generation and transmission projects? Please provide concrete examples and suggestions in areas such as:**
      i. **Financial incentives (*e.g.*, grants, loans, tax credits, etc.).**
      ii. **Technical assistance and expertise.**
      iii. **Research and development.**
      iv. **Streamlining environmental review and permitting processes.**
      v. **Facilitating stakeholder collaboration.**

vi. **Addressing supply chain and workforce vulnerabilities.**

b. **What specific authorities, programs, or initiatives within DOE are best positioned to provide this support?**
c. **How should DOE prioritize or structure its financial and technical support to advance high-impact generation, transmission, and grid infrastructure projects to serve large electric loads?**
d. **How can Federal support best de-risk early-stage infrastructure investment to attract private or other public capital?**
e. **Are there gaps in capital availability (*e.g.,* for utilities, project developers, or certain types of infrastructure) that DOE funding could help bridge?**
f. **What forms of technical assistance or planning support (*e.g.,* power flow modeling, capacity expansion planning, load forecasting, interconnection studies, technology operational assessments, technology implementation roadmaps, etc.) would help states, utilities, and project developers more effectively use Federal funding to meet demand?**
g. **How should DOE coordinate funding across its offices to support large-scale electric load growth?**
h. **What additional coordination is needed between DOE and other Federal agencies (*e.g.,* U.S. Department of Agriculture, Department of Commerce, Department of Interior, Environmental Protection Agency, the Department of Defense, Department of the Treasury, Department of Transportation, the Federal Energy Regulatory Commission, etc.) to align funding, permitting, or policy with emerging electric load challenges?**
i. **Are there successful examples of interagency coordination that should be expanded to address grid capacity and load growth?**
j. **How can DOE effectively leverage public-private partnerships to accelerate the development of these projects?**
k. **What are the most critical data gaps or information needs that DOE should address to better understand and support these projects?**

MISO Response:

Regarding DOE funding, financing, and technical assistance, please see the JTIQ discussion in response to RFI Question #1 above. MISO respectfully requests that the $464.5 million in GRIP funding continue to be applied towards JTIQ Portfolio #1.

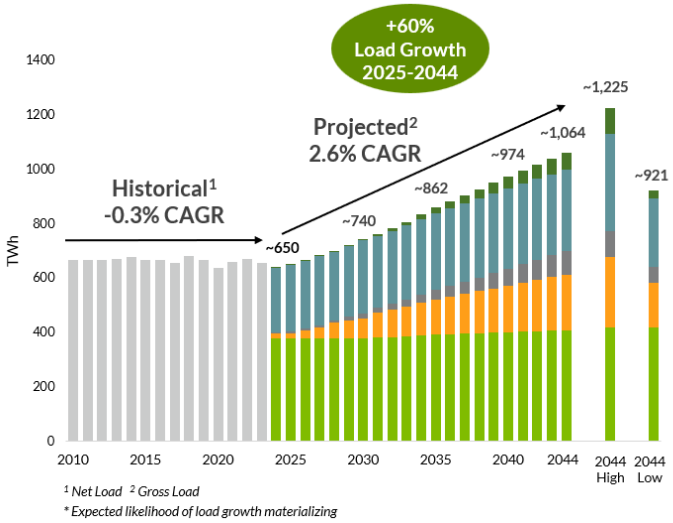
4. **Load Growth Trends**

a. **What types of new electric load are driving demand increases in your service area or region?**
b. **Please provide any available projections or forecasts of the scale, timing, and location of this expected growth.**

MISO Response:

a. In December 2024, MISO published its Long-Term Load Forecast Report, which identified data centers as the primary driver of demand growth across the MISO footprint.[14] Figure 2 below depicts the forecasted load growth.

Figure 2 - Forecasted Load Growth



	CAGR % Low-High (2024-44)	Growth TWh Low-High (2024-44)	Level of Certainty*
Hydrogen	27-32	26-95	Low
Industry Development & Reshoring	3-7	21-105	Medium
EVs	14-17	54-91	Medium-High
Data Centers	12-15	149-241	Medium-High
Building Electrification	0.45-0.54	36-43	High

In addition, MISO has observed a rise in EPR requests associated with large load additions, further reinforcing this trend as a key contributor to increasing demand. The MISO EPR process allows an expedited review for transmission owners who must start construction on the transmission projects to support large load additions more quickly than would be enabled under normal transmission planning timelines. As depicted above in Table 1, in 2022, 17 EPR requests were approved and in 2025, 49 EPR requests were approved.

MISO is working to update its forecast again in early 2026. Indications are showing that large load growth continues to accelerate from previous forecasts, which continues to highlight the importance of developing processes to find the best way to reliably and efficiently integrate new large loads.

b. In parallel with the Long-Term Load Forecast Report, MISO provided Local Resource Zone ("LRZ")[15] Annual Energy and Peak Demand Forecasts, which provides directional insight into where and how demand growth is expected to occur over time. As depicted in

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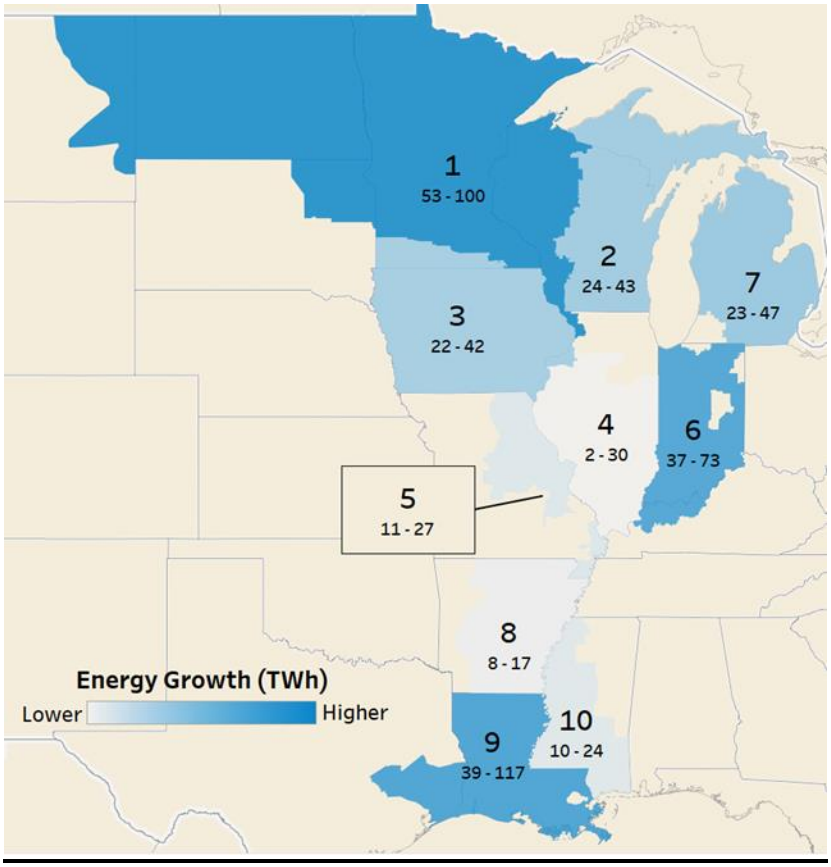
[14] Other key drivers of load growth are: (1) Building Electrification; (2) Electric Vehicles; (3) New Industry Development and Reshoring; (5) hydrogen; and (6) distributed energy resources. *See* https://cdn.misoenergy.org/MISO%20Long-Term%20Load%20Forecast%20Whitepaper_December%202024667166.pdfhttps://cdn.misoenergy.org/MISO%20Long-Term%20Load%20Forecast%20Whitepaper_December%202024667166.pdf

[15] MISO is organized into Local Resource Zones, which are geographic areas within MISO's footprint that help manage resource adequacy and reliability. There are 10 LRZs in MISO, which are part of three larger reliability subregions: North, Central, and South.

Figure 3 below (found on page 12 of the Long-Term Load Forecast Report), by 2044, MISO expects LRZs 1 (Minnesota and North Dakota), 6 (Indiana), and 9 (Louisiana and East Texas) to see the highest demand growth, driven by distinct regional factors. Data center expansion will also drive growth throughout several LRZs.[16]

Figure 3 – Expected Load Growth by MISO Local Resource Zone 2024 – 2044



5. Grid Infrastructure Constraints

a. What generation, transmission, or distribution constraints are limiting the ability to serve this demand?

b. What are the primary challenges and barriers to expanding infrastructure and deploying large-scale generation and transmission projects? Please consider factors such as:

i. Siting and permitting;
ii. Financing and investment;
iii. Construction timelines;
iv. Supply chain constraints;
v. Workforce availability;

[16] MISO plans to update the load forecast in Q2 2026 to incorporate enhanced driver-based growth projections at the LRZ level, which will in turn provide a more detailed view of the scale and timing of expected load additions by driving segment.

vi. **Interconnection queues;**
vii. **State and Federal regulatory and policy uncertainty;**
viii. **Technology integration;**
ix. **Community engagement and acceptance.**

MISO Response:

MISO assessed the future capacity of supply chains and manufacturing for both mature and emerging technologies and summarized its findings in an April 14, 2025, presentation entitled "Supply Friction".[17] The April 2025 Assessment focused specifically on potential constraints that could impact development of MISO's transmission planning Future 4[18], and is subject to ongoing analysis and refinement.[19] Notwithstanding these caveats, MISO believes the April 2025 Assessment is representative of the broader "frictions", or constraints, currently affecting development of both transmission and generation resources facing the electric utility industry, particularly as it faces increasing pressure from large load additions.

Broadly speaking, the April 2025 Assessment found that market factors, such as supply chain and manufacturing readiness, tariff impacts, and skilled labor availability, play a pivotal role in determining how industries adapt to demand shifts, navigate dynamic market conditions, and determine feasibility and scalability of both transmission and generation resource deployment.

More specifically, the April 2025 Assessment reached the following conclusions:

- Domestic solar supply chain constraints and import reliance are expected to limit capacity growth;
- Import reliance, especially for solar modules and cells, continues to shape the economics of solar deployment, with cells representing the greatest constraint for U.S. solar capacity;
- Wind blade plant closures have reduced domestic manufacturing capability, limiting the pace of wind capacity growth;
- Despite overall strong domestic sourcing (~75%), recent plant closures have made blades a key bottleneck—posing a risk to scaling wind deployment until domestic production is expanded;

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[17] *See* https://cdn.misoenergy.org/20250410%20Futures%20Redesign%20Workshop%20Item%2002%20Supply%20Friction690964.pdf The assessment is referred to herein as the "April 2025 Assessment."

[18] Future 4, or the "Supply Shift" scenario, is one of four future planning scenarios developed by MISO to plan its transmission system and represents a future where supply chain issues and other "supply frictions" make it difficult to build new generation, requiring the region to manage load growth by relying more on existing generation and demand-side resources.

[19] For the data underlying the assessment please see https://cdn.misoenergy.org/20250414%20Supply%20Friction%20Framework690965.xlsx.

- Natural gas turbine manufacturers were nearing contraction until surging AI-driven demand for firm generation reversed the trend—creating a backlog;
- The global gas turbine manufacturing industry is experiencing dramatic growth in demand, leading to order backlogs while production ramps up;
- Small Modular Nuclear Reactors demonstration projects have faced a stop-and-start trajectory, marked by cost overruns and project cancellations due to undersubscribed offtake agreements;
- The availability and diversity of lithium-ion battery options are expected to expand as domestic cell and pack manufacturing efforts are reshored. However, this growth may be constrained by tariffs and relatively elastic demand assumptions; and
- Battery cell supply, not pack assembly, is the primary bottleneck in the U.S. lithium-ion supply chain — highlighting a critical dependence on imports and vulnerability to trade policy.

Supply frictions fall outside of MISO's control but pose a significant risk to constructing the generation and transmission facilities needed to cost effectively meet the forecasted rapid load growth and economic development plans by members across the MISO region. DOE can help support the industry by better understanding bottlenecks leading to the frictions, providing funding as needed to help alleviate the frictions, undertaking efforts to make materials available, and support reforms to help reduce delays due to the frictions.

III. Conclusion

MISO appreciates: (1) the opportunity to respond to the DOE RFI, and (2) the DOE's interest in supporting large-scale generation, transmission, and grid infrastructure projects that can accelerate speed to power to support manufacturing, industrial, and artificial intelligence/data center electricity demand growth. MISO share's DOE's desire for ensuring that infrastructure and processes are able to support the speed to power initiative. To that end, MISO's existing processes are effectively interconnecting large loads today and supporting the new transmission and generation and infrastructure needed in the future. These processes provide the framework for our states and members to bring these large loads online in a timely manner. MISO recognizes that continued work is needed to most effectively meet these challenges and is actively working with stakeholders and the industry to continue to enhance its processes to further facilitate cost effective transmission solutions, improve generation interconnection processes, and identify additional reliability tools to support continued new large load integration. These improvements will further leverage MISO's unique regional processes and regulatory framework.

In terms of specific opportunities DOE may consider to support integration of new large loads, MISO respectfully requests that the GRIP funding for the JTIQ Portfolio #1 be maintained to allow those critical transmission projects to efficiently move towards construction, which will help facilitate large load interconnections and provide millions of people across the SPP/MISO seam more affordable, reliable and abundant power. MISO looks forward to continuing the work with DOE to fulfill the shared goal of effectively supporting manufacturing, industrial, and artificial intelligence/data center electricity demand growth.

Respectfully submitted,

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