2025 LTLF Pilot Survey Results Summary

Summary of Responses & Lesson Learned

February 12th , 2026

Purpose:

Share results of 2025 Load Pilot Survey, highlight year-over year survey results, and discuss next steps

Why MISO initiated this effort?

To collaboratively improve load forecasting and planning by incorporating more granular load data from stakeholders, enabling better decision-making, increased transparency, and improved system reliability through collaborative forecasting.

This effort aims to:

- Understand stakeholder readiness to share detailed load data, including large loads like data centers and industrial facilities.
- Explore and incorporate granular load insights into forecasting such as with LRTP load siting and Long-Term Load Forecasting.
- Streamline future stakeholder data collection process to reduce burden and increase value for stakeholders.

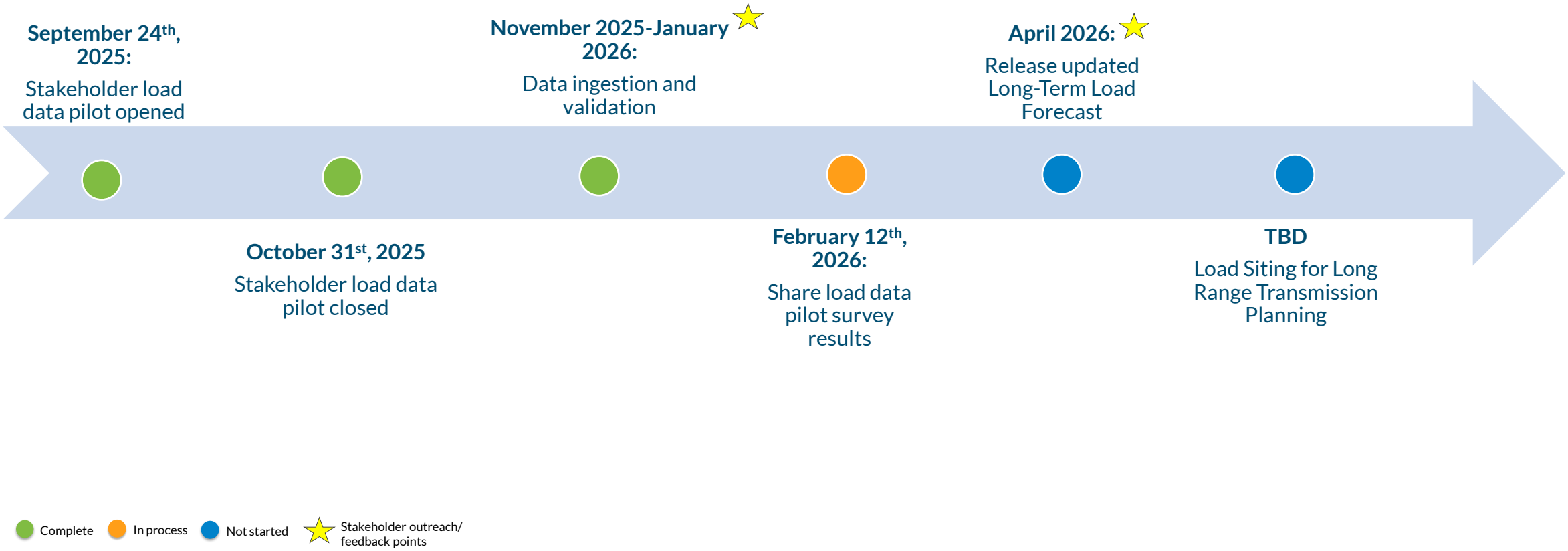
Background: MISO published its Long-Term Load Forecast in December 2024

Highlights:

- Forecast load across a range of three scenarios, considering industry drivers such as data centers, new domestic industry, and green hydrogen.
- Incorporated stakeholder-submitted load forecasts and Expedited Project Review Requests to guide load projections.
- Signaled MISO's intention to improve future load forecast iterations by including **"more granular stakeholder inputs to gain valuable insights into large load behaviors and better align forecasts with industry needs."**

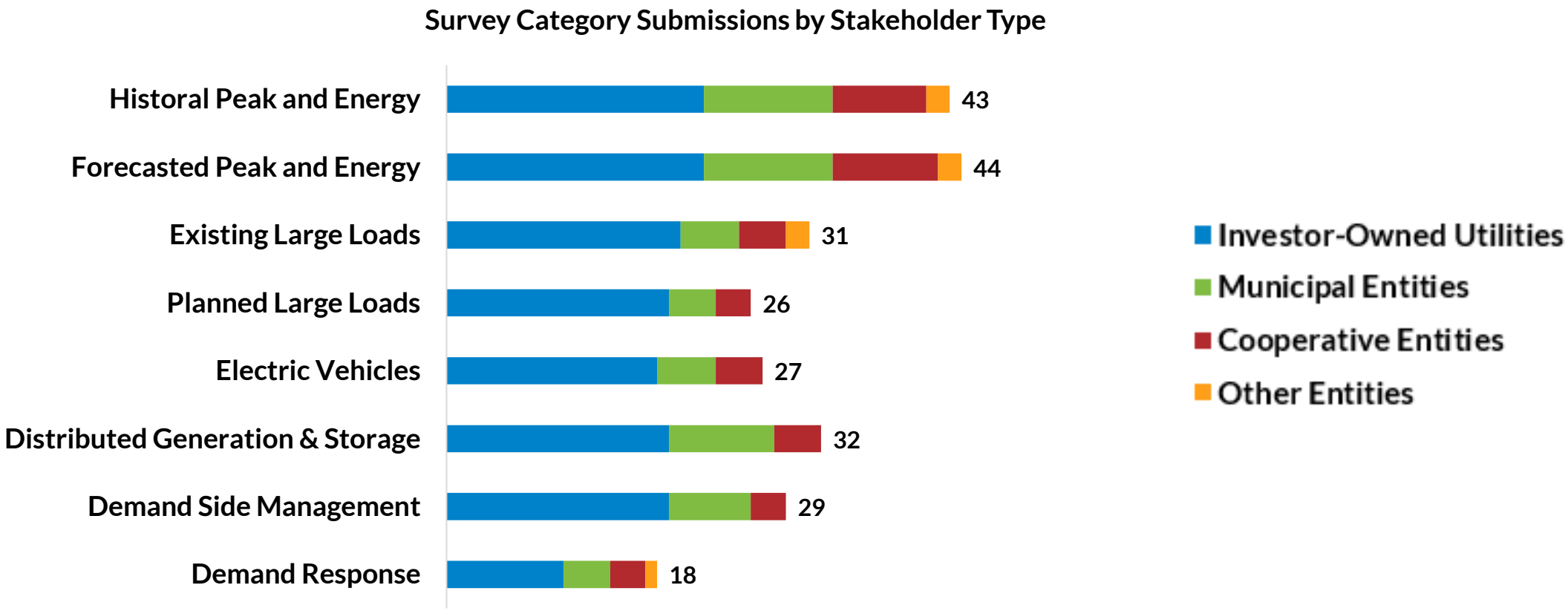
Link to 2024 Long-Term Load Forecast Whitepaper: (misoenergy.org)

The pilot survey revealed opportunities to streamline load forecasting inputs and improve data accuracy through better alignment



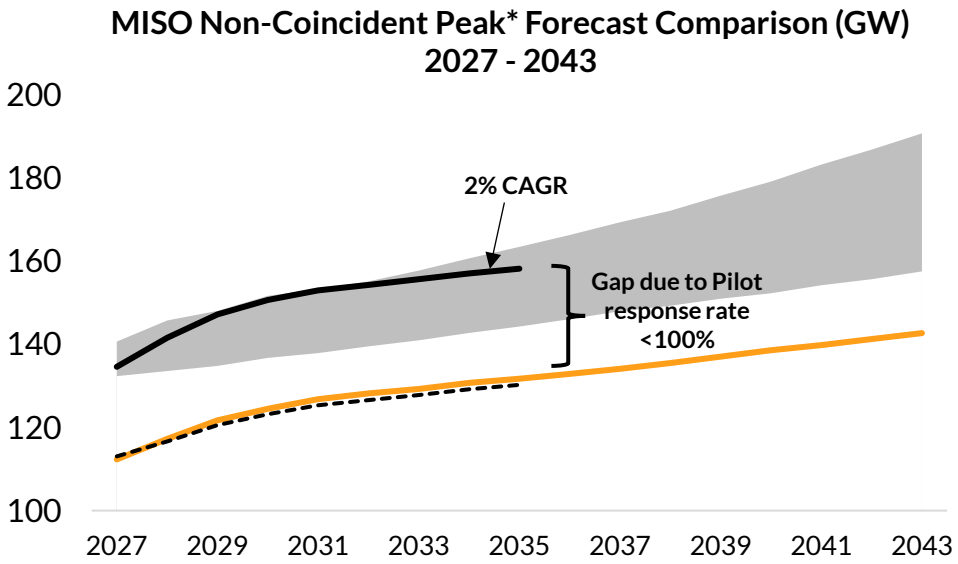
Long-Term Load Forecast Pilot Survey_FAQ720857.pdf

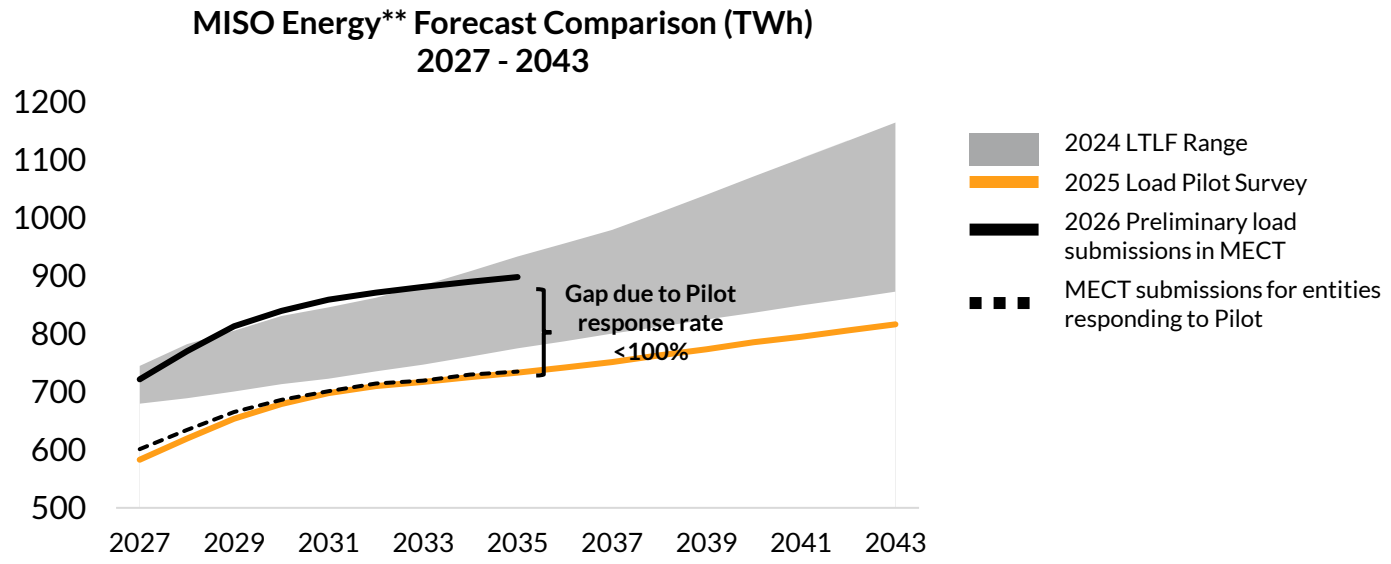
MISO received submissions to the pilot survey from 44 distinct entities which are responsible for approximately 80% of MISO's total load*



*80% refers to the share of MISO system load represented by responding entities, not the percentage of survey questions answered.

Preliminary 26/27 Module-E Capacity Tool (MECT) load submissions^ are directionally aligned with the higher range of the 2024 Long-Term Load Forecast (LTLF)





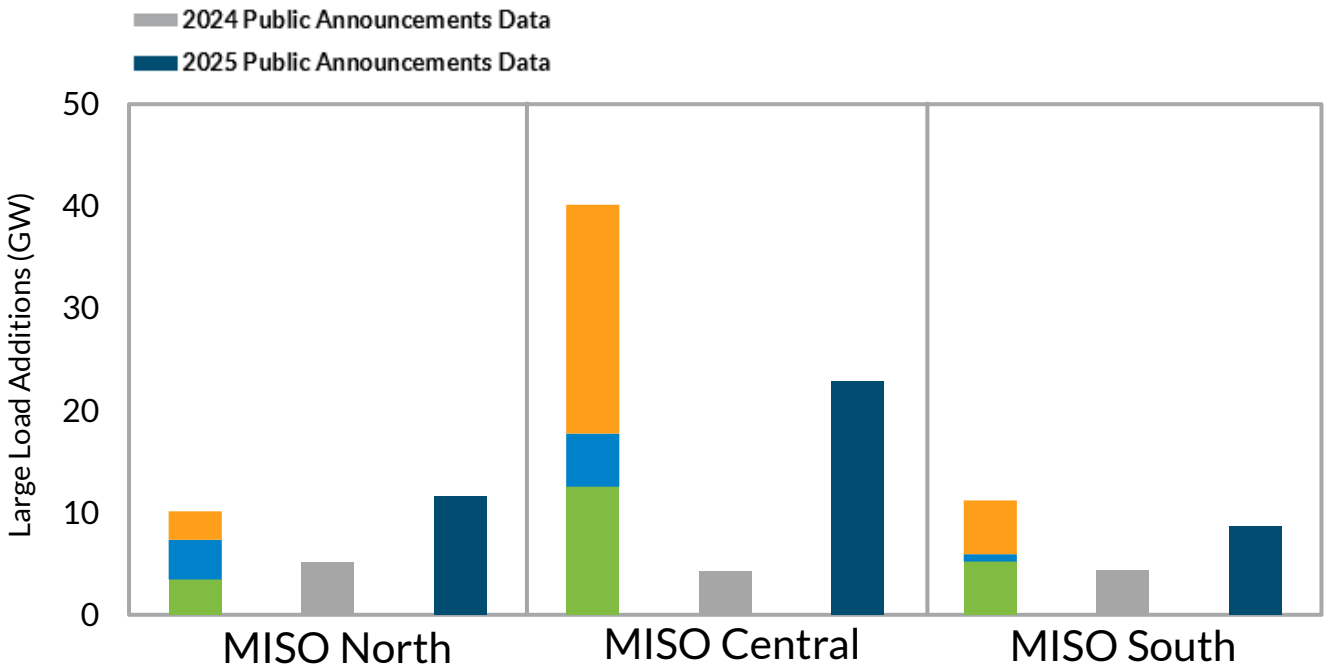
Insights

- Comparisons with MECT submissions enabled validation of pilot survey data. After adjusting for response rate, results are well-aligned with opportunity to clarify accounting assumptions for transmission losses, pseudo-tied loads and demand response.
- Voluntary Pilot captured 80% of MISO load, while MECT (Tariff-required) covered 100%.
- Validating and aligning pilot survey data with MECT submissions supports use in long-term load forecasting.

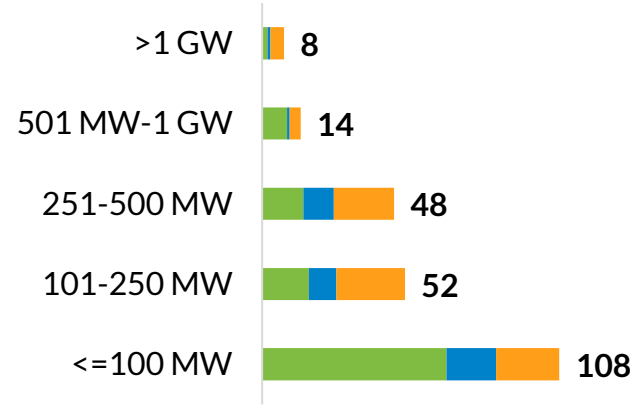
^MECT load submissions are load forecast submissions required as per the MISO Tariff
*Non- Coincident Peak = Sum of annual peaks of each submitted member (MECT data converted to calendar year)
**Energy= Sum of monthly energy values of each submitted member (MECT data converted to calendar year); accounting assumptions vary for transmission losses, pseudo-tied loads and demand response programs in MECT vs Pilot Survey

Public announcements of large load* forecasts for 2030 have doubled from last year, but do not necessarily reflect firm commitments

2030 Regional Cumulative Large Load by Survey Confidence Level vs. Public Announcement Data^ (GW)



No. of Planned Large Loads Project Phase Submissions By Confidence Level and Size by 2030



- **Low Confidence:** Project has not been submitted through a MISO planning process; it may be reflected IRPs or remain at a conceptual stage
- **Medium Confidence:** Project has been submitted through a MISO planning process, or has been publicly announced, but construction has not yet begun
- **High Confidence:** Interconnection agreements are in place, regulators are aware, and project construction is underway.

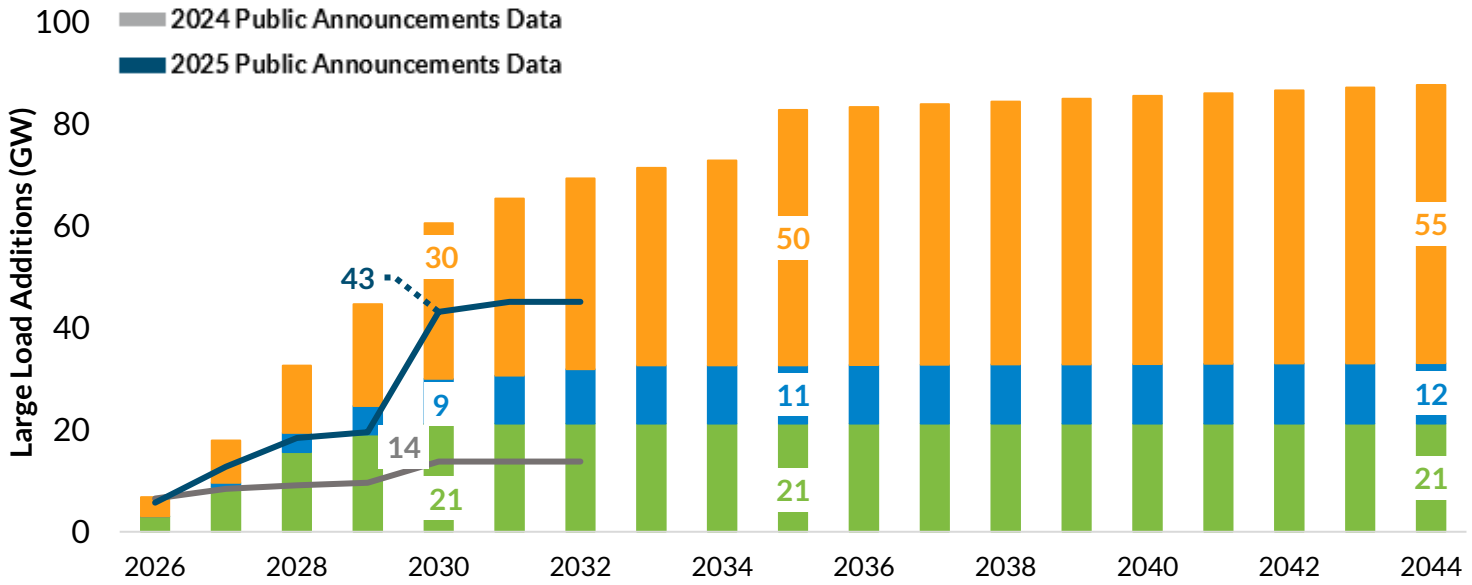
Insights

- Project confidence provides important insight as public announcements do not always reflect firm commitments.
- Limited response rates and confidentiality constraints may have impacted visibility and overall accuracy.
- Ongoing collaboration and tracking is critical to strengthen confidence in large load forecasting.

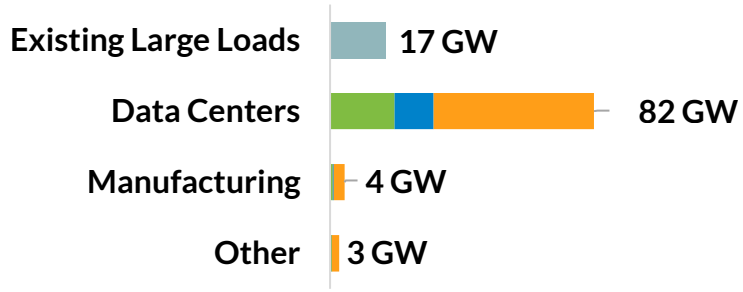
*Large Load = Load > 20 MW
^Public announcements are for regional wide, while Survey data is just for those that responded
Large Load Siting Methodology details discussed in November 2025 workshop

The continued low confidence on large loads* shows the need to recognize the uncertainty in long-term load forecasts

MISO Year-over-Year & Cumulative Large Load Growth by Survey Confidence Level vs. Public Announcement Data^ (GW)



2044 System Large Load Composition By Confidence Level



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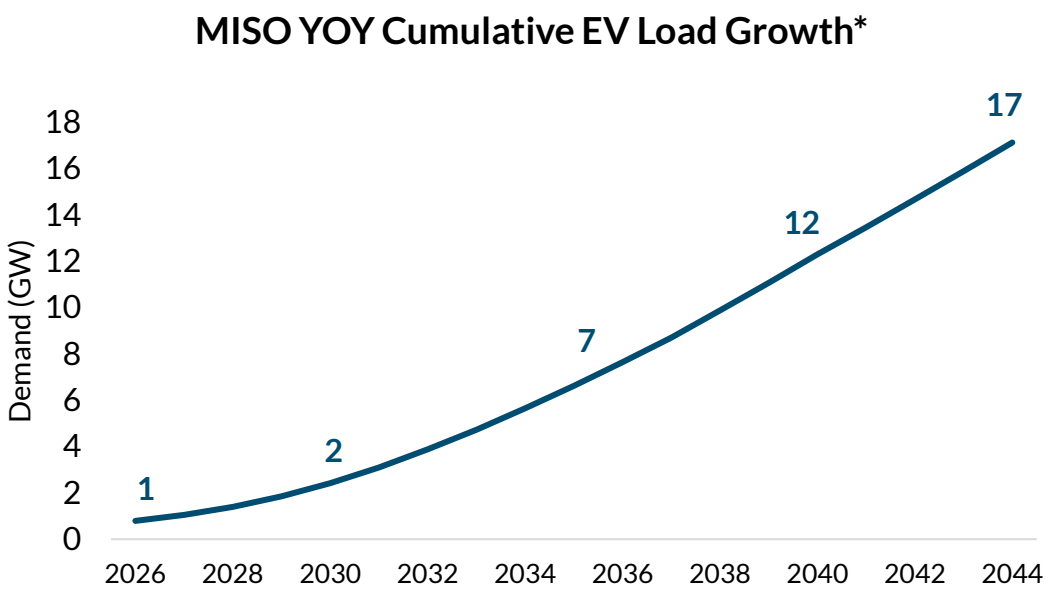
- **High Confidence:** Interconnection agreements are in place, regulators are aware, and project construction is underway.

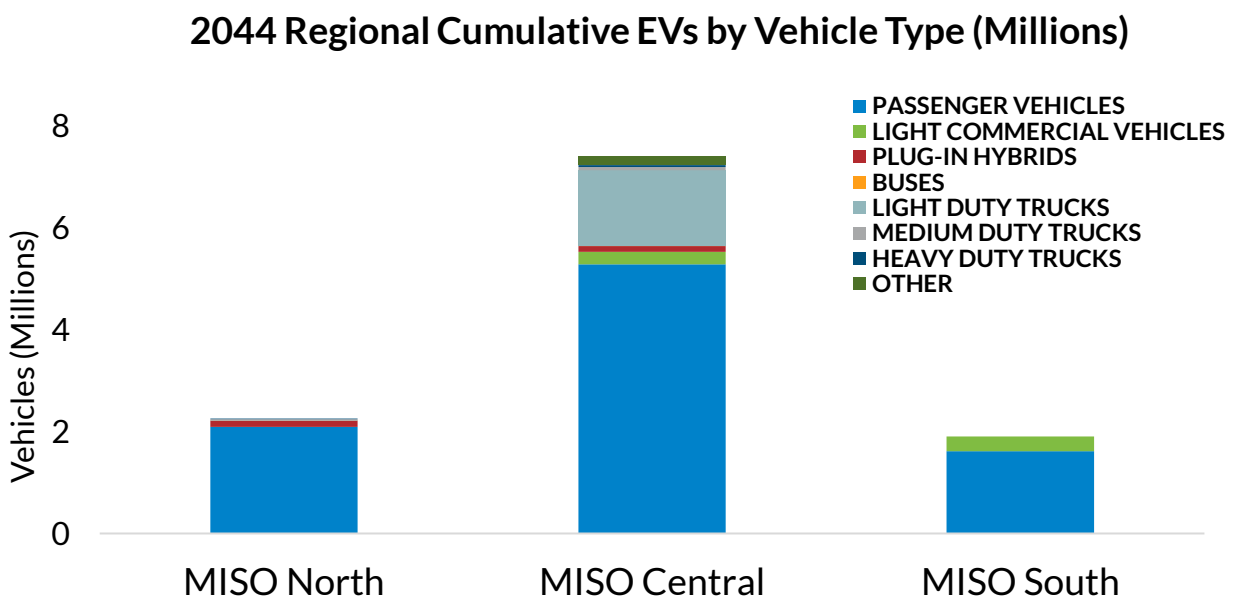
Insights

- Of the total survey responses received, only 60% responded to the planned large load section. Confidentiality limits reduced data sharing and response rates, complicating double-counting checks and mapping large load submissions.
- Most submissions end in 2035, leaving long-term growth uncertain and requiring assumptions beyond the 10-year horizon.
- Varying phasing assumptions across stakeholders highlight an opportunity to align large load accounting methodologies for greater consistency.

*Large Load = Load > 20 MW
^Public announcements are for MISO wide, while Survey data is just for those that responded

Responses on forecasted Electric Vehicle (EV), while incomplete, suggest approximately 17 GW of load growth by 2044, primarily driven by anticipated passenger vehicle adoption



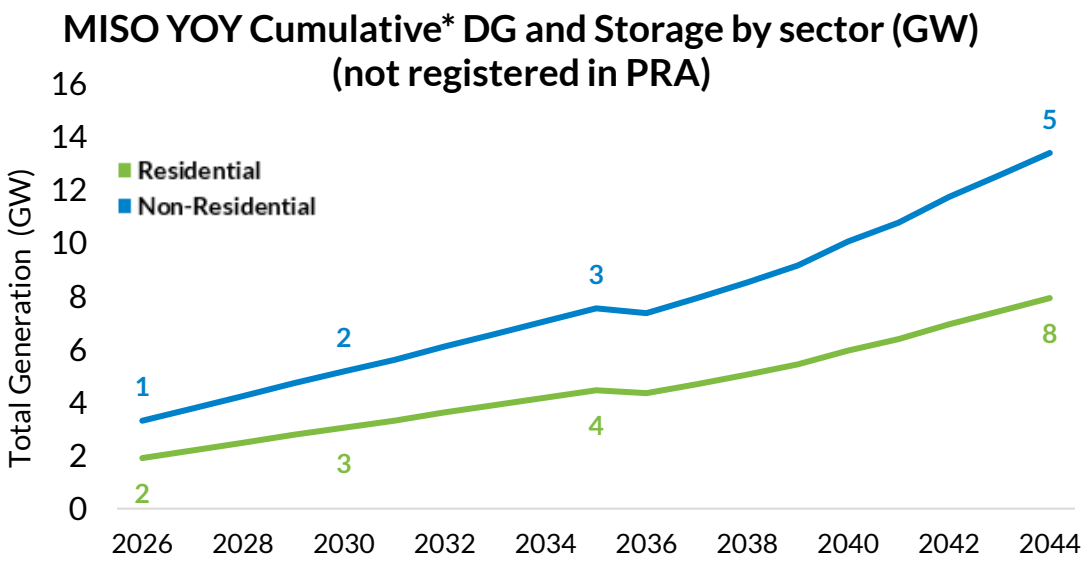


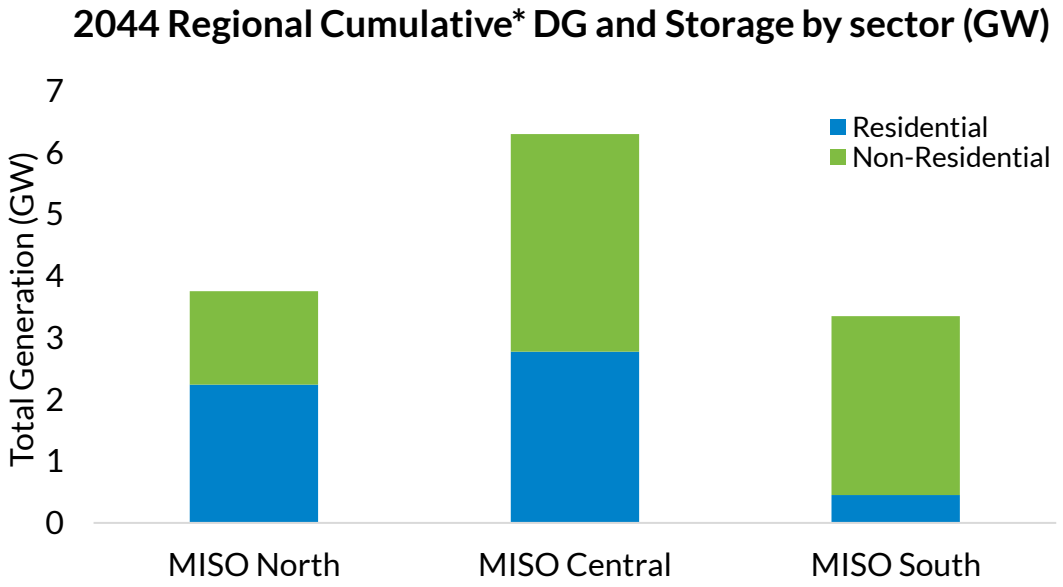
Insights

- Stakeholder data indicates electric vehicle adoption is expected to occur most prominently in MISO Central.
- MISO's ability to draw firm conclusions is limited by inconsistent stakeholder classification of electric vehicle types.
- To improve forecast comparability, future data collection efforts will emphasize clearer guidance and communication regarding electric vehicle classification categories.

*EV Demand Calculation Methodology: EV Demand Calculation Methodology: Energy demand was estimated by multiplying survey-reported vehicle counts by assumed annual mileage and per-mile energy consumption by vehicle class (passenger vehicles, plug-in hybrids, light commercial vehicles, light-duty trucks, medium-duty trucks/other; heavy-duty trucks; and buses). Peak load contributions were derived assuming a 50% load factor across all vehicle segments.

Stakeholder submissions indicate a gradual growth in non-registered Planning Resource Auction (PRA) distributed generation (DG) and storage; however, assumptions and reporting practices varied across respondents



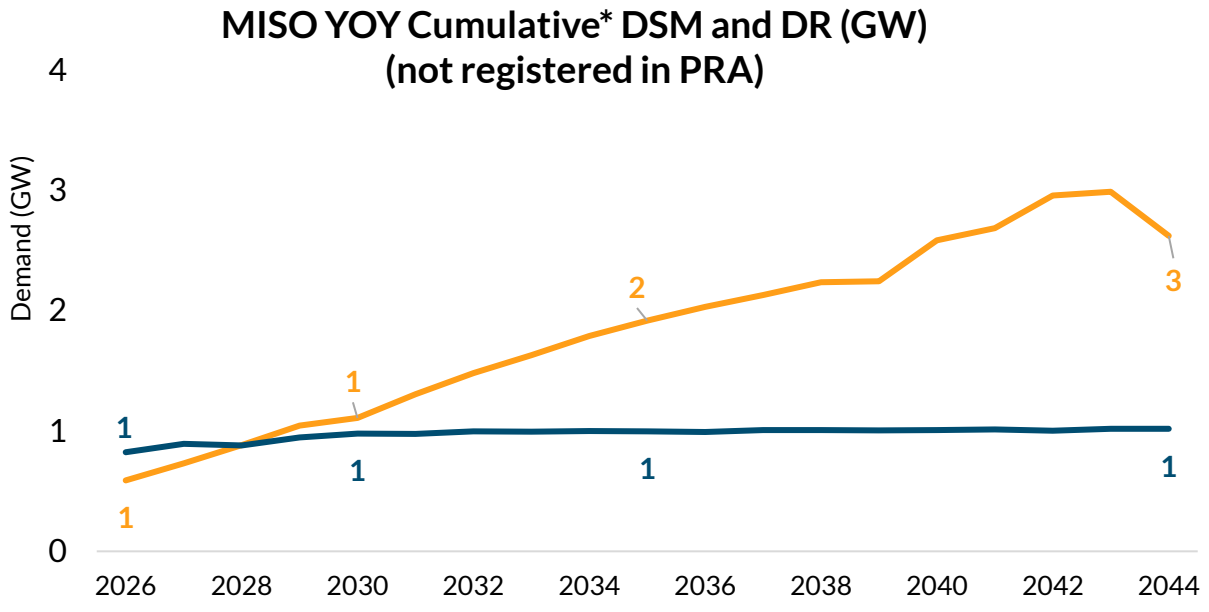


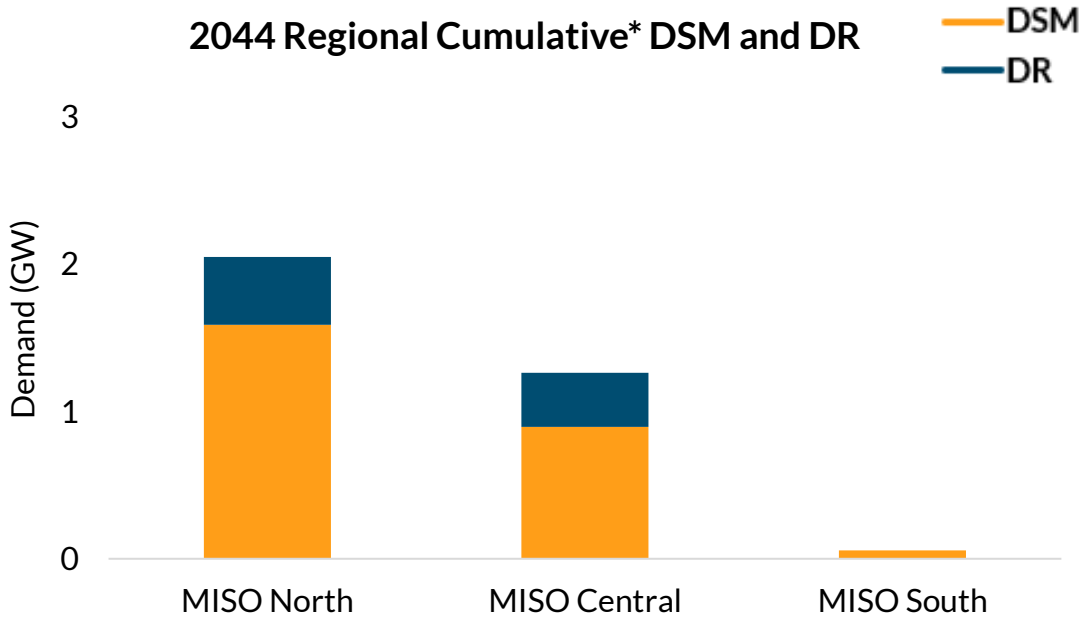
Insights

- Some stakeholders reported they do not forecast DG or storage resources that are not registered in the PRA.
- While limited, survey responses provide a baseline for non-registered DG and storage and offer visibility into DER projections may vary by location.
- Uncertainty remains regarding whether reported figures represent incremental additions, total values, or cumulative sums, highlighting the need for standardized reporting formats and clear data labeling in future surveys.

*Includes existing and forecasted DG and storage not registered in MISO PRA

Stakeholders indicated they generally do not forecast unregistered Demand Response (DR) or Demand Side Management (DSM) programs in PRA; registered DR and DSM are included in the PRA, providing the most accurate expected near-term capabilities





Insights

- Some stakeholders reported future DR pilot programs or limited non-registered participation, including seasonal smart thermostat programs.
- Demand Response and Demand-side management forecast will require reliance on assumptions.

*Includes existing and forecasted DSM and DR not registered in MISO PRA

Lessons Learned

- All survey respondents provided monthly peak and energy forecasts, establishing a strong foundation for comparison with other surveys and data sources.
- Aligned timing between the 2025 Load Pilot Survey and MECT submissions enabled cross-validation, targeted stakeholder outreach, and adjustments that improved data accuracy and consistency.
- Stakeholder participation will continue to be essential for long-term forecasting and increased automation will help improve survey results and usefulness for load forecasting.
- Clarifying definitions of 'High,' 'Medium,' and 'Low' confidence projects will help ensure consistent submissions and distinguish firm commitments from early-stage scouting.
- Unregistered DR/DSM is not generally forecasted by stakeholders, and most resources are already registered in MISO PRA, suggesting limited additional value in continuing surveys on this data. In addition, OMS DER survey provides insights to what is currently available for not registered resources
- MISO should continue to work with stakeholders to clarify how survey information will be utilized.
- MISO can further strengthen its survey process by clarifying how essential load forecast information will be collected and represented, while continuing to honor the proprietary nature of submitted stakeholder data through aggregated views.

How will stakeholder load submissions be integrated within the 2026 Long-term Load Forecast?

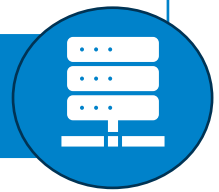
MISO will integrate complementary sources to develop a complete and internally consistent set of forecast assumptions, combining stakeholder input (where coverage allows), third-party research, and public disclosures.

Stakeholder forecasts are used to benchmark MISO's total peak and energy outlook and are used to ensure the accuracy of state and regional load growth trends.

Total Peak & Energy

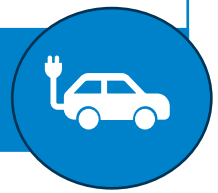
Stakeholder-reported projects, by confidence level, are combined with internal research, public disclosures, and third-party research (Landgate) to produce best-available large load estimates, with duplicates removed and timing and efficiency assumptions applied.

Large Loads



Stakeholder submissions are benchmarked against MISO's EV adoption model informed by publicly available forecasts (Dept. of Energy) and updated policy assumptions, with adjustments for state-level adoption and charging behavior.

Electric Vehicles



Third-party consultant (Kevala) analysis estimates DER impacts, with stakeholder inputs used to validate assumptions and define gross versus net load differences.

Distributed Energy Resources

Next Steps

- Complete in-depth footprint load growth analysis to produce updated load forecast scenarios.
- Publish updated Long-Term Load Forecast in April 2026.
  - Long-Term Load Forecast Report
  - MISO level and Zonal Level Driver* breakdown calculations with assumptions
- Evaluate and implement transparency measures that protect confidentiality while fostering stakeholder alignment and confidence in the process.
- Explore ways to improve alignment, granularity and consistency of MISO's load data collection efforts based on lessons learned.
- Going forward, we expect the Long-Term Load Forecast to inform Futures. We are considering their use to inform a potential Integrated Forward Assessments process

*Exact locational granularity will be determined based on MISO's ability to balance transparency, and the proprietary nature of the underlying data

Thank You!

For additional comments, feedback or questions, email:
StrategicInsights@misoenergy.org

Diverse levels of detail received across the submitted data categories

Information Type	Lessons Learned and Key Takeaways
Stakeholder Email Themes	• Requests for clarity on completing the survey, interpreting data requirements, and instructions on where/how to submit responses. • Questions and concerns about data confidentiality, intended use, and reporting, along with suggestions to improve clarity and ease of future data collection efforts.
Historical Data	• Stakeholders reported historical load with varying granularity and methods, typically including transmission and distribution losses. • Some use hourly load inclusive of losses; others separate generation-level data from gross load, excluding behind-the-meter generation (BTMG). Exclusions for certain contracts, DER metering limits, and adjustments for non-coincident peak with distributed solar are also noted.
Forecasted Peak and Energy	• Peak load forecasts vary in assumptions and inclusions. Some include distribution losses and weather normalization; others add context for transmission losses and planned large loads. Certain forecasts exclude DSM/EE/DR impacts, while some noted the phasing assumptions for data centers. • Energy forecasts generally include transmission and distribution losses, with adjustments for weather normalization, contract expirations, and large load impacts. Detail and methodology vary across utilities.
Existing and Planned Large Loads	• Stakeholders with existing large loads emphasize confidentiality; customer data cannot be shared without consent. Many identify large customers using a 20 MW billing demand threshold, noting whether they are interruptible or registered in MISO. • Stakeholders reported a wide range of planned large load and data center projects, often with significant confidentiality constraints and varying levels of forecasting detail. • Many emphasizing that project-specific data is confidential and subject to nondisclosure agreements. • Some provided phasing details while others noted uncertainty around project materialization or pending inquiries.
Electric Vehicles	• Stakeholders are increasingly incorporating electric vehicle (EV) adoption into their load forecasts, though the level of detail and methodology varies widely from IRP-based projections, vehicle registration extrapolation, and regression using rebate data. • Some reported that they often lack vehicle-type detail and focus on passenger vehicles. Rural utilities report low adoption and limited forecasting, while urban utilities use State DOT data and customer share for MW/MWh estimates. • Overall, EV impacts are recognized, but accuracy is constrained by data gaps, regional adoption rates, and modeling limitations.
DG and Storage	• Across stakeholders who responded, distributed generation (DG) and storage planning is primarily focused on solar energy, with varying levels of detail and forecasting methods from extrapolation to regression. Some included behind-the-meter solar; others indicated their reliance on external sources like the OMS DER survey for this data. • A common theme is the lack of granularity in separating residential and commercial solar, and several stakeholders noted that future DG additions are either not forecasted or are treated as static due to data limitations or policy constraints.
DR and DSM	• Stakeholder responses indicated that they are actively engaged in demand response (DR) planning, with most indicating that their DR resources are either already registered in the MISO Planning Resource Auction (PRA) or are expected to be. Some provided detailed residential and commercial DR programs, including smart thermostats, behavioral initiatives, and interruptible load, pilots for opt-out thermostat programs, while others noted limited or non-registered DR participation. Seasonal enrollment and pilot programs show future potential but limited current data. • Stakeholder responses indicated a wide range of approaches to DSM planning, with most relying on historical performance, regulatory filings, or externally coordinated programs to guide future projections. Some provide detailed program categories and savings forecasts; others aggregate residential and commercial data. Modeling methods include exponential regression and end-use models, with some referencing formal filings and programs like Focus on Energy.

Why MISO requested this information?

Information Requested	Description	Purpose for Data Request
Historical Load Data	The name and peak yearly demand of the recipient LSE's C&I customers with 2024 hourly peak energy use of at least 20MW to be selected from a list of categories; MISO has not asked for this information in the past.	Collecting historical monthly peak and energy data from the previous ten years (if available) will allow MISO to compare submitted values against actual operational data to identify anomalies and define accurate forecast baselines. This effort will support geographically specific forecasting, enhance confidence in planning assumptions, and improve capacity procurement decisions in the PRA. Once the initial historical dataset is established, the process will transition to a recurring monthly look-back request to monitor ongoing load changes.
Existing Large Loads & Data Centers	Commercial or industrial customers and data centers within a utility's service area with 2024 hourly peak energy demand of at least 20 MW. Understanding their energy use characteristics is crucial for efficient grid management and resource allocation; MISO has not asked for this information in the past.	Gathering data on LSEs' largest customers allows MISO to incorporate regional load shape diversity into forecast models. In addition to informing the scale and magnitude of existing large load and data center penetration in MISO's load forecasts, this data will help to align large load assumptions to operational performance and will inform existing large load siting needs.
Planned Large Loads & Data Centers	Planned large loads and data centers 20 MW or larger with in-service dates expected within 20 years across a range of categories, including information on load certainty, operational flexibility, phase-in information, and locational coordinates; MISO has not asked for this information in the past.	Collecting planned large load and data center information by category will help align assumptions with operational performance. This approach will also enable MISO to develop more accurate, localized projections of data center growth and evaluate whether different data categories exhibit similar patterns in projected load siting needs.
Peak Demand Forecast (MW)	Previous year actual and forecast peak values at a monthly granularity; requested continuously following initial year to gather annual data look-back; new request asks for consistent monthly, as opposed to seasonal granularity as gathered through MECT, or annual as gathered through RRA; MISO asked for monthly peak forecasts in the 2019 MISO Futures DER survey. The survey will not ask for load factor data or forecasts; this information will be deduced by MISO personnel using a using a five-year historical average of NCP values.	Standardizing the collection of peak forecast submissions through direct monthly data collection eliminates the need for weighting assumptions, reduces processing inconsistencies, and improves forecast reliability. This effort enhances long-term planning, facilitates risk identification, and strengthens executive decision-making related to reliability and investment strategies.
Energy Forecast (MWh)	Previous year actual and forecast energy values at a monthly granularity; requested continuously following initial year to gather annual data look-back; new request asks for consistent monthly, as opposed to seasonal granularity as gathered through MECT, or seasonal gathered through RRA; MISO asked for monthly energy forecasts in the 2019 MISO Futures DER survey.	Standardizing the timing and structure of energy forecast submissions improves consistency in data interpretation by removing the need for weighting assumptions and strengthens alignment across planning processes. These improvements increase MISO's ability to assess future risks, evaluate system reliability, and support enterprise-wide prioritization and expansion decisions.

Why MISO requested this information? (continued)

Information Requested	Description	Purpose for Data Request
Electric Vehicles (EVs)	Previous year actual and forecast annual number of electric vehicles across a range of categories; MISO has previously asked for the number of existing, planned and long-term potential of, energy associated with, and program costs associated with EVs in the 2019 MISO futures DER survey.	Forecast yearly penetration of several categories of electric vehicles will allow MISO to refine LSE-specific load factor assumptions and improve visibility into regional variation in EV adoption resulting in more accurate forecasting and transmission planning.
Distributed Generation (DG) & Storage	Previous year actual and forecast annual generation capacity of DG across a range of categories; MISO's Resource Adequacy teams gather 10-years of data on BTMG (which is categorized as either loads or resources) to register resources in capacity market; MISO has previously asked for the existing, planned, and long-term potential of, the energy impacts of, non-coincident load impacts of, and program costs of residential and commercial/industrial BTM energy storage in the 2019 MISO Futures DER survey.	Forecasts of installed distributed generation and storage capacity by type will improve MISO's ability to understand regional load flexibility, project net load at the local level, and evaluate how these technologies influence peak demand and system reliability. This information supports long term risk assessments and planning at the level of individual load serving entities. It will also enhance visibility into real time system conditions and help align economic models with transmission needs in areas with high levels of distributed generation. In addition, collecting this data will help MISO better understand the future potential of aggregated technologies such as storage and distributed generation that are currently present on member distribution systems.
Demand-Side Management (DSM) & Energy Efficiency (EE)	Previous year actual and forecast annual non-coincident peak load reduction from DSM across a range of programs; As part of Resource Adequacy's effort to register BTMG in the capacity market, MISO currently gathers seasonal 10-day hourly metered data tied to LMR registration, although resource type is not always specified.	Collecting region-specific DSM capacity forecasts enables MISO to more accurately model how energy efficiency and load-shifting programs are shaping long-term demand. These insights improve production cost modeling and help to assess future reliability risks. The collection of this information will also help MISO to better understand the possible future potential of aggregated technologies, like DSM and EE, which currently exist on distribution systems.
Demand Response (DR)	Previous year actual and forecast annual non-coincident peak load reduction from DR across a range of programs; As part of Resource Adequacy's effort to register BTMG in the capacity market, MISO currently gathers seasonal 10-day hourly metered data tied to LMR registration, although resource type is not always specified; MISO has previously asked for the existing, planned and long-term potential of the energy impacts of, non-coincident load impacts of, and program costs associated with various demand response programs which were specified by the recipient LSE.	Forecast values of non-coincident peak reduction attributed to several categories of DR will allow MISO to better understand the unique load flexibility characteristics on an LSE-specific basis. Detailed DR data will improve MISO's operational awareness and reliability planning by clarifying how much dispatchable load flexibility is available during peak events, grid emergencies, or periods of high market volatility. The collection of this information will also help MISO to better understand the possible future potential of aggregated technologies, like DR, which currently exist on distribution systems.