



## MISO’s Emissions Estimates Initiative

### Key Takeaways:

- Increasingly stringent regulations, member goals and customer needs are driving requests for MISO to leverage its operational data to provide credible emissions data estimates
- The project’s key objectives are matching methodology, quality and security of data to use cases to create an impartial, credible, useful suite of solutions
- MISO is introducing these offerings in a staggered approach as data products are ready, building stakeholder engagement with successive introductions of increasingly granular data

### Drivers:

MISO stakeholders are increasingly interested in emission tracking estimates. Drivers for this interest include meeting and reporting emission reduction goals, creating new tariffs to support end use customer demands, increased visibility for operational decisions making and information to aid investment decisions. These drivers coupled with MISO’s access to detailed power system data has resulted in increasing requests for MISO to leverage its operational data and expertise to provide credible estimates.

### Objectives and Strategic Considerations:

This project is tasked with creating impartial, credible, and useful emissions tracking solutions for internal and external stakeholders. Key considerations include:

- The accuracy and quality of the data, recognizing that MISO does not have and will not acquire access to all point source data (heat rates, startup rates, etc.)
- How publishing emissions may have diverse impacts to stakeholders
- Maintaining data securely to protect against exposing confidential or market-sensitive data
- Ownership of the data used and produced

These considerations influence the final deliverables, determining the data output for average and locational marginal emissions.

### Background:

MISO’s first project to report emissions began in 2021 with the creation of a pilot [emissions dashboard](#) that displays historical generated emissions compiled from Energy Information Administration (EIA) and Environmental Protection Agency (EPA) data for the entire U.S. In 2022 future projected emissions for the MISO footprint were published, based on simulations from the Regional Resource Assessment (RRA). This dashboard enables MISO stakeholders to explore emissions trends by time, fuel type, season, and local resource zone (LRZ), both historically and into the future.

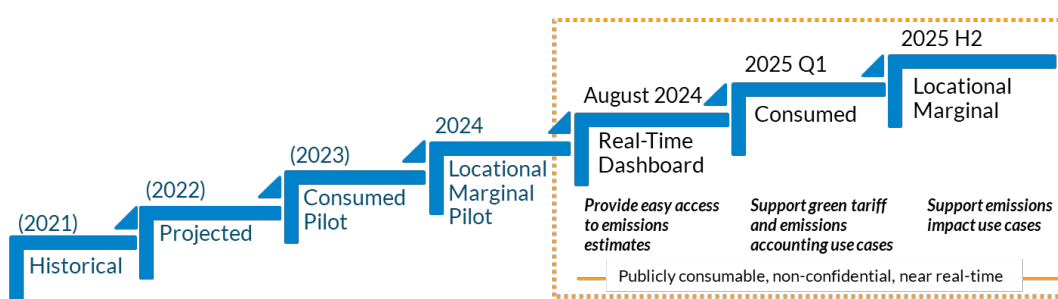
This emissions tracking project kicked off in 2022 based on increased stakeholder requests with a series of internal pilots to explore consumed emissions tracking. A second phase of the work explored Locational Marginal Emissions one year later. The goal of the piloting work is to mature the business case in consideration of a rollout to the membership.

Initial consumed emissions pilot data has since been reviewed with several customers, demonstrating feasibility, credibility, and usefulness. Design is in process for the locational marginal emissions (LME) pilot. Several strategic questions are still in consideration prior to a full rollout. These questions include finalizing data parameters for reporting in balance with data quality and credibility to maximize value to MISO and its members.

### Scope of Work Underway:

#### Staggered MISO wide rollout of real-time emissions estimates deliverables

The differing maturity of each project creates an opportunity for a staggered rollout of emissions products.



In addition to the tasks in workstreams 1 to 3 below, work to roll out these emissions projects includes:

- Identifying data parameters for each release (locational and temporal granularity, reporting lag)
- Creating educational materials and a stakeholder facing FAQ
- Defining storage and retention of emissions output data
- Creating a feedback loop to identify reporting gaps and improvements

#### Deliverable 1: Near real-time footprint wide generated emissions and marginal emissions rates

These new dashboard pages will go live on August 1, 2024, as part of a dashboard refresh, with a new Quick Link on MISO's [Markets & Operations landing page](#) for easier access. The "Near Real-Time" page uses MISO's real-time fuel mix report to generate footprint-wide near real-time generated emissions estimates. The "Marginal" page uses MISO's fuel on the margin report to generate a footprint-wide locational marginal emissions rate on a one-day delay.

#### Deliverable 2: Average consumed carbon emissions integration

This method uses MISO State Estimator and topography data to track power flows from generators to load nodes across the entire MISO footprint and calculates the amount of carbon dioxide emitted by the power consumed at that node. This data is aggregated spatially with delayed reporting as needed to maintain confidentiality. The scope of work of this phase includes:

- Validating methodology and outputs internally and with customers
- Designing dedicated emissions dashboard page to maximize usability
- Identifying optimal, non-confidential locational and temporal granularity for MISO members
- Completing technical documentation for customer support
- Establishing data history beginning Q1 2025

#### Deliverable 3: Locational Marginal Emissions (LME) integration

Locational Marginal Emissions is an estimate of the change in emissions that results from an increase or decrease in load determined by the response of system level generation. The more the LME signal reflects real-time operations and granular locations the more useful it is for operational decision making. LME rates are non-confidential including (load) nodal, real-time rates. Following completion of the internal pilot, the scope of work for implementation includes the following:

- Incorporating pilot learnings to optimize usefulness and scalability
- Identifying data architecture for hosting and delivering a scaled solution
- Implementing and validating automated data integration
- Designing dedicated emissions dashboard page to maximize usability
- Identifying optimal, non-confidential locational aggregations for MISO members
- Completing technical documentation for customer support
- Establishing data history beginning with launch Q4 2025

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