Executive Summary

- A key part of MISO’s Reliability Imperative is the urgent need for transmission across the MISO footprint as plant retirements and increasing renewables continue to transform the grid.

- MISO is responding to this urgent need with the Long Range Transmission Planning effort.

- Long Range Transmission Planning provides a road map for investment decisions as the grid evolves.
MISO’s actions as part of the Reliability Imperative address emerging operational needs on the system.

MISO is actively pursuing multiple workstreams to ensure on-going reliability and value creation.

List is not representative of all efforts.
MISO’s Regional Reliability Imperative “living” report will describe how we are evolving our markets, operations, planning processes and systems to address the urgent threats to the system.

**PURPOSE OF REPORT**
- Lay out context for critical reliability imperative initiatives
- Describe interdependencies & timing
- Provide clear path for stakeholder participation and tracking

**INITIAL PUBLISH DATE:** December 2020

**MARKET REDEFINITION**
Aims to ensure resources with the capabilities and attributes the system needs will sufficiently be available all hours of the year

**LONG RANGE TRANSMISSION PLANNING**
Identifies investment in all types of transmission projects the region will need as the resource fleet continues to evolve

**MARKET SYSTEM ENHANCEMENTS**
Transforms MISO’s legacy system platform into a flexible, upgradeable, and secure system that will be able to evolve with the industry for years to come

**OPERATIONS OF THE FUTURE**
Ensures MISO will have the skills, processes, and technologies needed to effectively manage the grid into the future

Workstream matrix will be attached to this report, mapping specific MISO initiatives to the Reliability Imperative.
Long Range Transmission Planning is designed to assess the region’s future transmission needs holistically, in concert with utility and state plans on where to site and build new generation resources.

MISO developed three robust Futures for planning based on stakeholder input; MISO will prioritize Future 1, while ensuring the outcome aligns with Futures 2 and 3.

MISO’s near-term focus is to help stakeholders assess generation and transmission costs on a holistic basis while we continue to develop solutions through targeted studies.

MISO will work with OMS and stakeholders to develop and/or adjust cost-allocation methodologies that may be needed to support projects identified by Long Range Transmission Planning.
There is an urgent need for Long Range Transmission Planning (LRTP) as customer preferences, decarbonization goals and economics are accelerating fleet transition.
The ability of our members to achieve decarbonization or renewable goals reliably and efficiently is dependent on addressing rapidly worsening deliverability.

Required renewable capacity to meet goals with minimal new transmission.

Required renewable capacity to meet goals with integrated new transmission.
The Long Range Transmission Planning effort will also consider significant transfer limitations that persist even without portfolio change.
The Long Range Transmission Plan serves as a roadmap to guide the optimization of near-term needs that are compatible with long term drivers and adaptable to future changes.

- Informs future investments as transmission needs mature
- Periodic reevaluation will support alignment with fleet transition and policy changes
- May change as transmission needs change
- Coordinates with other planning efforts
Identification of transmission needs follows MISO’s standard regional planning process, which identifies grid needs based upon Futures, is multi-step and considers subregional needs and solutions.

**PROCESS**

1. Determine Futures resource forecast and siting
2. Test system performance against Futures
3. Identify transmission issues
4. Determine appropriate cost allocation based on values
5. Consider long range plan when choosing solutions
6. Integrate subregional issues and solutions
7. Long Range Transmission Planning

**GOALS**

- Grid Reliability / Resilience
- Policy Goals
- Economic Development
- Energy Costs
- Resource Adequacy
All three Futures have been finalized to develop conceptual flow patterns and enable a robust future long range transmission road map.

Total Resources by Futures Assumption Set

Possible Near-Term Solutions to Test
Results from recent Generator Interconnection Queue studies also provide insight for the Long Range Transmission Plan

Observing the active queue and the heavy activity in West and other sub-regions identify areas of potential build-out
The Long Range Transmission Plan will be developed over several MTEP cycles as transmission needs are identified and prioritized.

**LRTP**

**MTEP 23 & Beyond**

**MTEP 22**

**MTEP 21**

**MTEP21**
- Future 1 assumption set
- Initial conceptual road map and project recommendations

**MTEP22 & Beyond**
- Futures 1, 2 and 3 assumption sets
- Periodic road map review
- Additional project recommendations