MISO Transmission Planning and Cost Allocation

2020 IURC Contemporary Issues Technical Conference

August 25, 2020

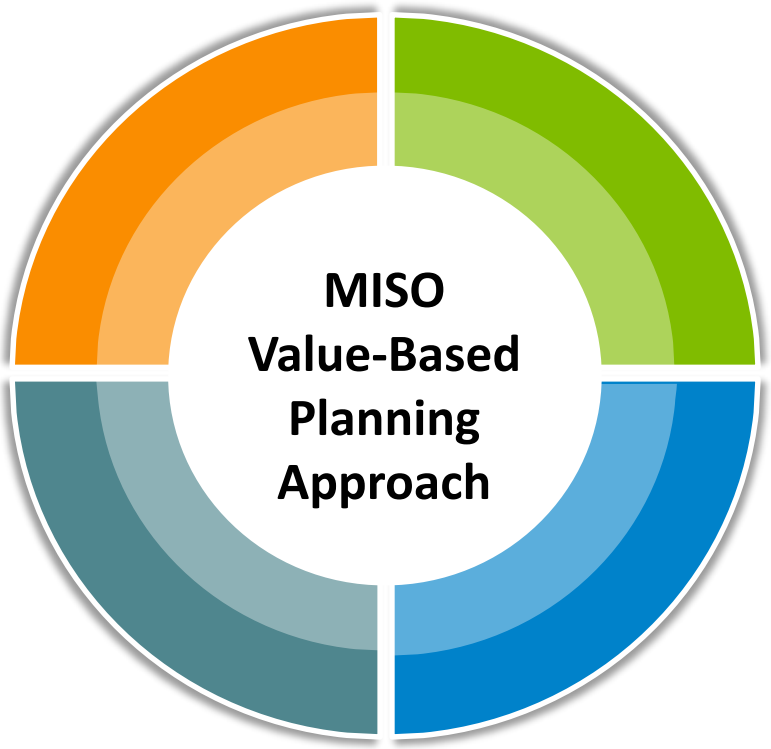
The transmission planning process provides a comprehensive approach to identify grid needs

Regional Planning

Long-term regional planning based on future scenarios

Policy Assessment

Analyze policy change; determine transmission required to support policies



Resource Planning

Evaluate long-term interconnection queue requests; identify upgrades to integrate into base expansion model

Local Planning

Validate plan needs identified by Transmission Owners; seek efficiencies in planning; evaluate system against reliability standards

MISO's transmission planning process is executed according to a set of guiding principles

Develop a transmission plan that meets all applicable NERC and Transmission Owner planning criteria and safeguards local and regional reliability through identification of transmission projects to meet those needs

Make the benefits of an economically efficient electricity market available to customers by identifying transmission projects which provide access to electricity at the lowest total electric system cost expansion plan that meets reliability needs, policy needs, and economic needs

Analyze system scenarios and make the results available to state and federal energy policy makers and other stakeholders to provide context to inform regarding choices

Fundamental Goal

The development of a comprehensive expansion plan that meets reliability needs, policy needs, and economic needs

Provide an appropriate cost allocation mechanism that ensures that costs of transmission projects are allocated in a manner roughly commensurate with the projected benefits of those projects

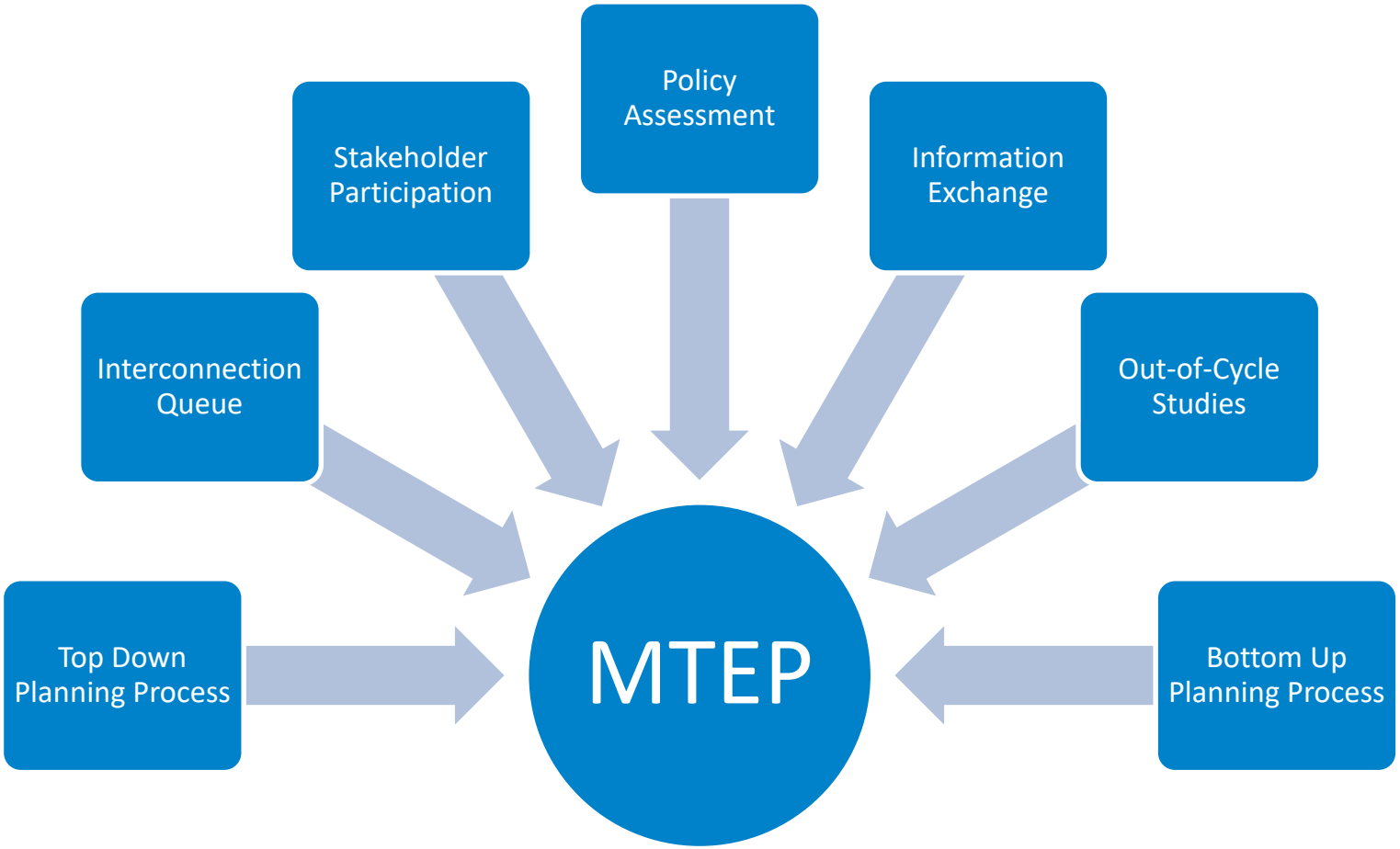
Coordinate planning processes with neighbors and work to eliminate barriers to reliable and efficient operations

Support state and federal energy policy requirements by planning for access to a changing resource mix

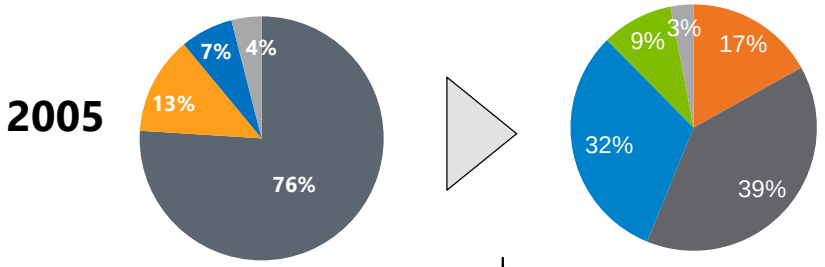
The OMS transmission planning strategic priorities closely align with MISO's guiding principles and value-based planning process

- Support regional, coordinated, long-range transmission planning and provide a leadership role in its development, consistent with the OMS long-range transmission planning principles.
- Engage on the development of scope, key assumptions, and methodology for assessment of regional, coordinated, long-range transmission needs.
- Ensure future uncertainty is properly captured by including state perspectives and appropriate benefit analysis during business case development.
- Study and become more informed on where energy storage fits within the transmission planning process and its connection to resource adequacy, distribution system planning, and grid reliability.
- Identify near-term tasks required for future action related to transmission planning improvements.
- Engage on the scope, key assumptions, methodology and all other relevant elements in the development of the annual MISO Transmission Expansion Plan (MTEP).

MISO Transmission Expansion Plan (MTEP)



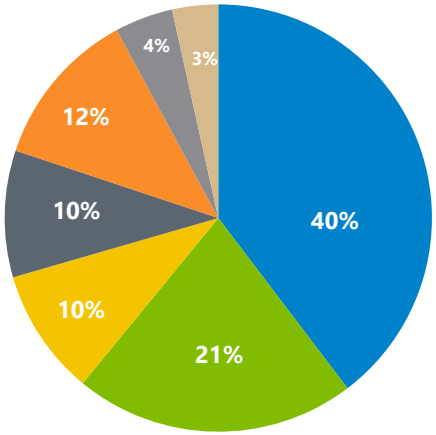
Three MISO Futures are created to be utilized in the MTEP Analysis

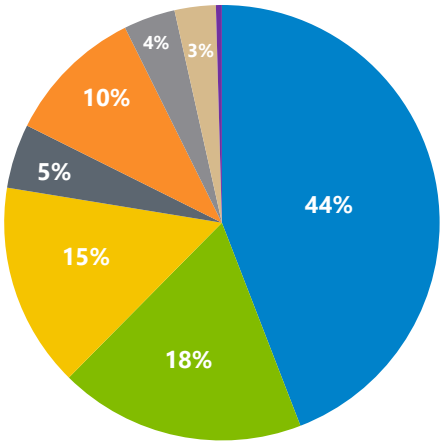


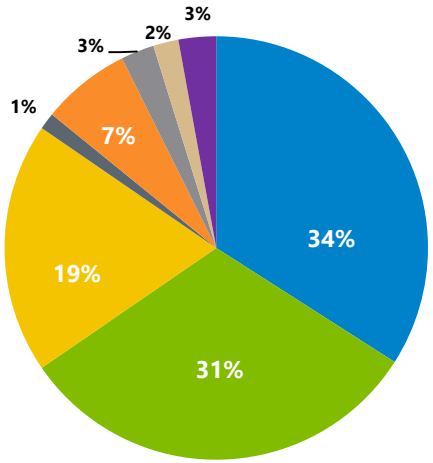
2019

Gas
Wind
Solar
Coal
Nuclear
Other
DER
Battery

2040 Future Scenarios[1]







Future 1
Footprint develops in line with 100% of utility IRPs and 85% of utility/state announcements, etc. Emissions decline as an outcome of utility plans. Load growth consistent with trends.

Future 2
Companies/states meet their goals, mandates, etc. Footprint-wide CER[2] of 60% by 2040. Energy increases 30% footprint-wide by 2040, driven by electrification.

Future 3
Changing federal and state policies support footprint-wide CER of 80% by 2040. Increased electrification drives a footprint-wide 50% increase in energy by 2040.

1. *Energy mix outputs from EGEAS do not consider transmission constraints*
2. *Carbon emissions reduction (CER) from 2005 baseline*

Long Range Planning will identify grid needs based upon Futures, using multi-step process that considers sub-regional needs

GOALS

- Grid Reliability / Resilience
- Policy Goals
- Economic Development
- Energy Costs
- Resource Adequacy

Indiana MTEP Project Highlights

MTEP Approved Projects Not In-Service Summary		
Project Type	**Project Cost ($M)**	**% of Total**
Other	$338.4	78.5%
Baseline Reliability	$13.6	3.2%
Generation Interconnection	$14.5	3.4%
Transmission Delivery Service	$0.0	0.0%
Market Efficiency Project	$30.0	7.0%
Multi-Value Project (MVP)	$34.6	8.0%
Market Participant Funded	$0.0	0.0%
Total	$431.1	100.0%

MTEP20 Indiana Highlights

Project Type	Project Total	Estimated Costs
Baseline Reliability	8	$ 40,450,400
GIP	4	$ 39,642,616
Other	42	$ 260,908,000
Grand Total	54	$ 341,001,016

Recent Notable Indiana Projects

- Duff-Coleman 345 kV
  - MTEP15 MEP (first MISO competitive project)
  - In-service June 2020
- Bosserman – Trail Creek 138 kV
  - MTEP19 MEP/IMEP (First IMEP with PJM)
  - Expected MISO Board approval Sept 2020
  - Expected in-service by 2023

MISO Regional Cost Allocation

Project Type	Description	Allocation to Beneficiaries
Multi-Value Project	Above 100 kV and project cost of $20 million or more, evaluated as part of a portfolio of projects and must meet one of three criteria	100% postage stamp to load
Market Efficiency Project	230 kV and above and project cost of $5 million or more, reduce market congestion when benefits are 1.25 in excess of costs	100% distributed to zones commensurate with expected benefit, based on the benefit metrics described in Attachment FF-7
Baseline Reliability Project	NERC Reliability Criteria	100% allocated to local Transmission Pricing Zone
Generation Interconnection Project	Interconnection Request	Primarily paid for by requestor; 345 kV and above 10% postage stamp to load.
Transmission Delivery Service Project	Transmission Service Request	Generally paid for by Transmission Customer; Transmission Owner can elect to roll-in into local Transmission Pricing Zone rates
Participant Funded	Projects that are funded by a Market Participant	The Market Participant funds the project.
Other	Project that does not qualify under other project categories.	The costs of these projects are recovered in zonal rates.

FERC recently accepted MISO's Storage As Transmission-Only Asset (SATOA) filing which will enable energy storage to be included in MTEP as a Transmission Asset

For more technical details refer to FERC docket ER20-588, which includes MISO Tariff redlines, comments and technical conference information

Questions