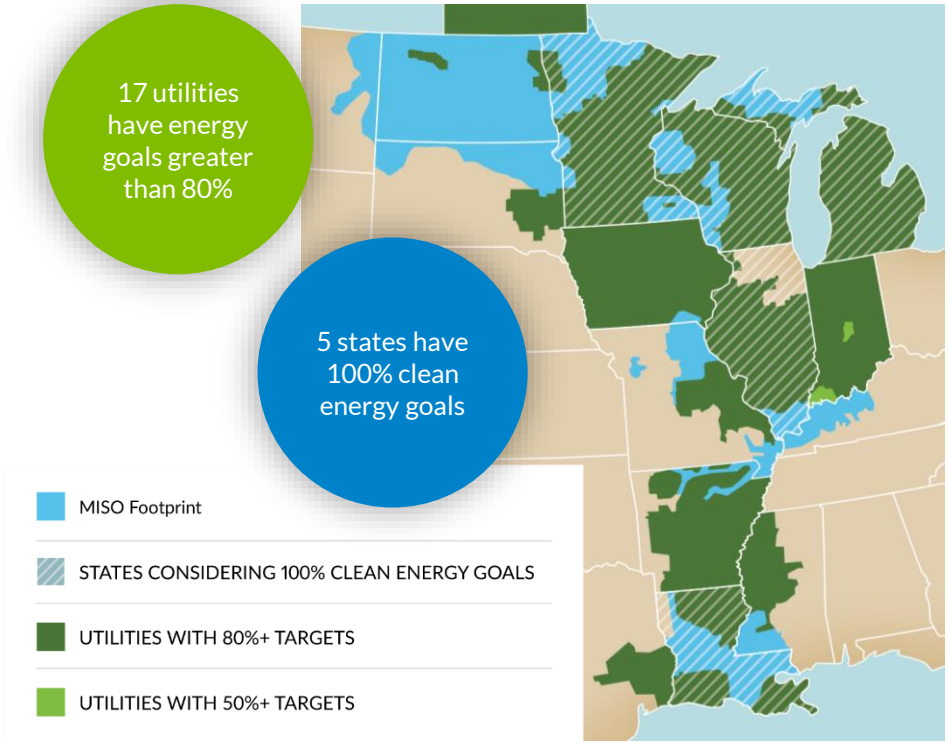
Grid Resiliency Plenary

2021 Midwest Energy Solutions Conference

February 17, 2021

MISO is taking action to ensure the goals / targets set by our states and members can be achieved in a reliable, efficient manner



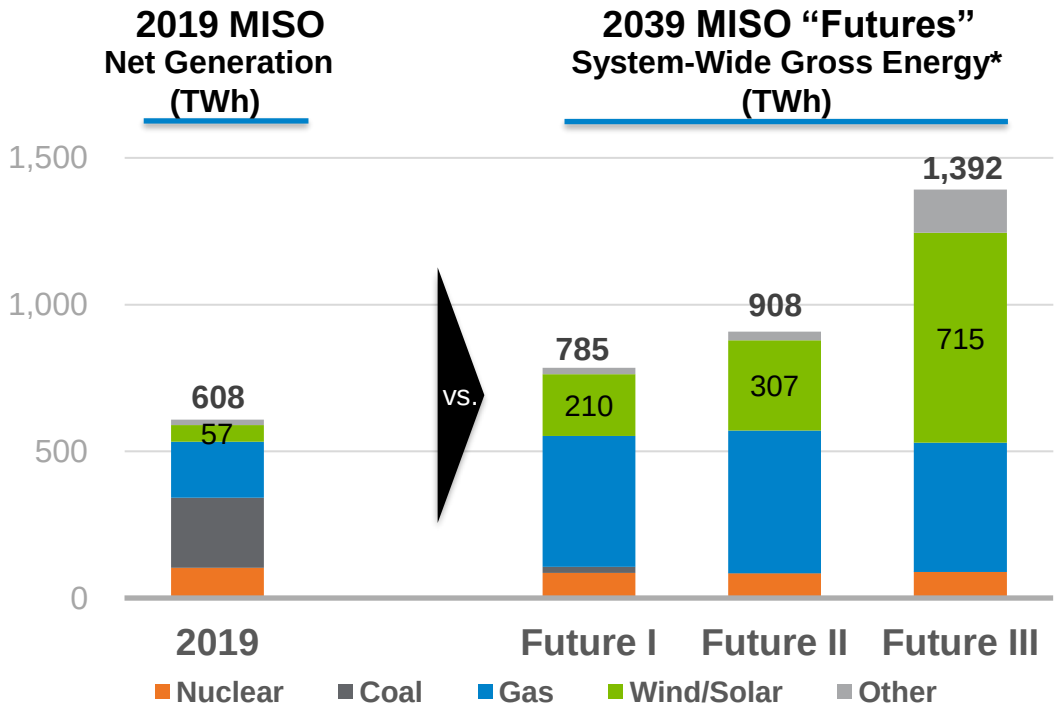
As of late 2020; changing rapidly.

To support our states and members in this transition, we are…

- Making necessary adjustments to our market, planning and operations functions
- Developing "Futures" to help inform transmission planning and other changes to enable the resource transition
- Analyzing future energy demand, including electrification and energy efficiency trends, as important elements of these futures

… as part of the MISO region's "Reliability Imperative".

MISO's "Futures" reflect a broad range of how the fleet evolution may unfold, including large increases in renewables



Future I: The footprint develops in line with 100% of utility Integrated Resource Plans (IRPs) and 85% utility announcements, state mandates, goals or preferences.

Future II: Companies/states meet all their goals, mandates and announcements. Changing federal / state policies support carbon emissions reduction of 60% and electrification drives approximately 1.2% annual energy growth rate.

Future III: Changing federal /state policies support carbon emissions reduction of 80% and electrification drives approximately 1.9% annual energy growth rate.

* System-Wide Gross Energy (from early MISO modeling) includes increasing amounts of dumped (or curtailed) renewable energy and storage fill; Net Generation does not include dumped energy, storage fill or DERs.

Although relatively small, Energy Efficiency comprises a strong majority of demand-side resources added in the Futures

- Energy Efficiency comprised 60% of all demand-side capacity added, and over 80% of all demand-side energy served.

Demand-Side Additions	Future 1		Future 2		Future 3	
	Capacity (GW)	Energy (GWh)	Capacity (GW)	Energy (GWh)	Capacity (GW)	Energy (GWh)
Demand Response (DR)	0.9	118	0.9	118	0.9	118
Energy Efficiency (EE)	7.8	30,801	8.1	31,393	11.7	49,145
Distributed Generation (DG)	3.5	5,709	3.5	5,709	6.2	9,837

- The requirements for more and cleaner energy in Future 3 made EE even more economically competitive against other resources.
- As a result, an additional EE program (Residential Low-Cost EE) was selected in Future 3 for the resource expansion, joining the Commercial & Industrial Low-Cost EE aggregation selected for Futures 1 and 2.

Questions?