

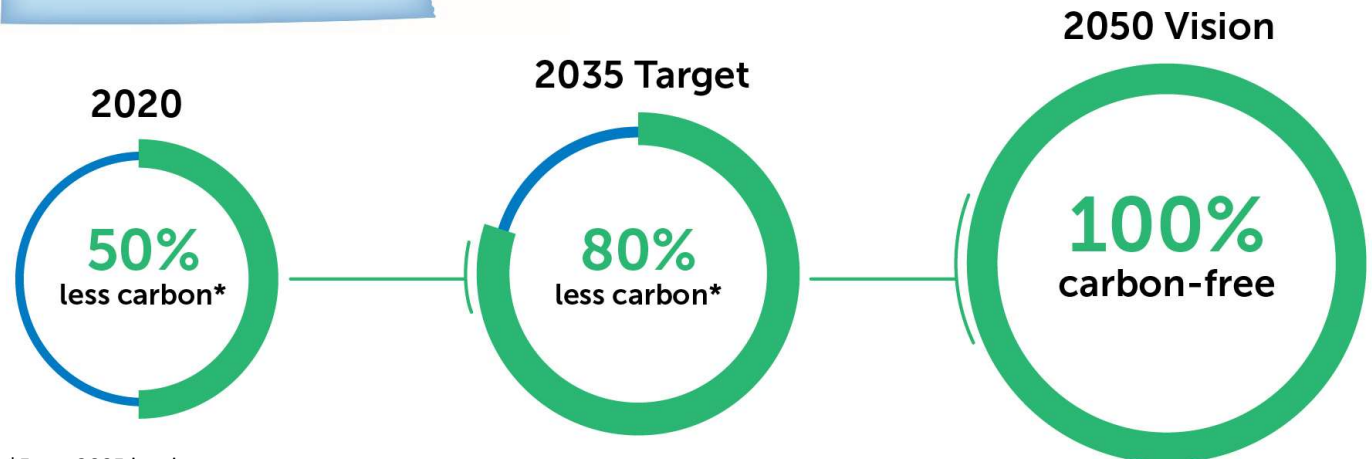
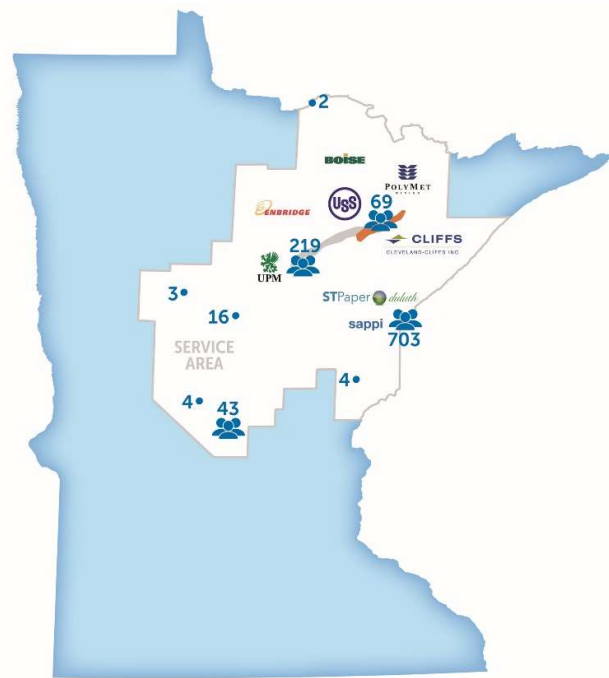


# IECA – ELECTRICITY PANEL

Frank Frederickson  
Vice President – Customer Experience  
September 14, 2022

**Currently**  
**50% Renewable**  
 ~35% Coal  
 ~30% Wind  
 ~20% Hydro  
 ~15% Gas, Market,  
 Biomass & Solar

**2050 Vision**  
**100% Carbon Free**

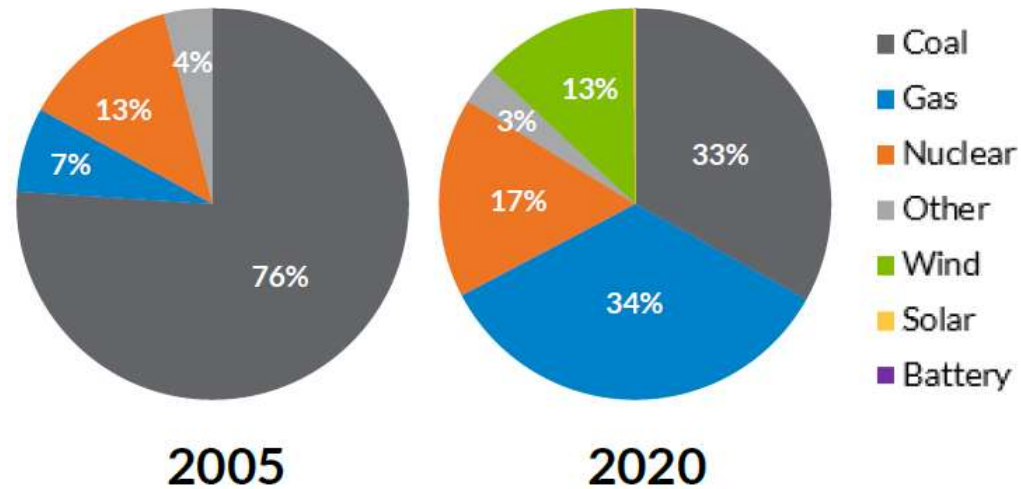


\*From 2005 levels

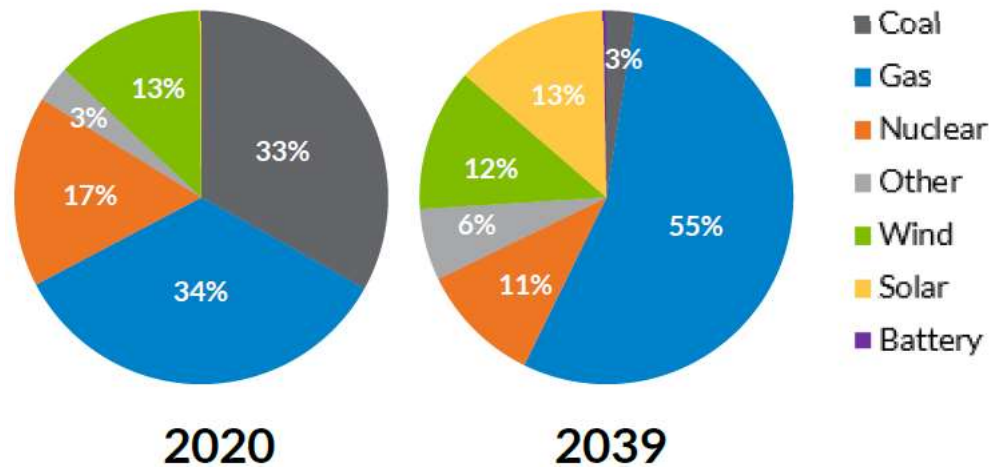
**MISO Historical  
Generation Mix...**  
Less Coal...  
More Gas...  
More Wind.

**MISO Future  
Generation Mix**  
No Coal...  
More Gas...  
More Solar.

**Historical Changes in Energy Generation across the MISO footprint**

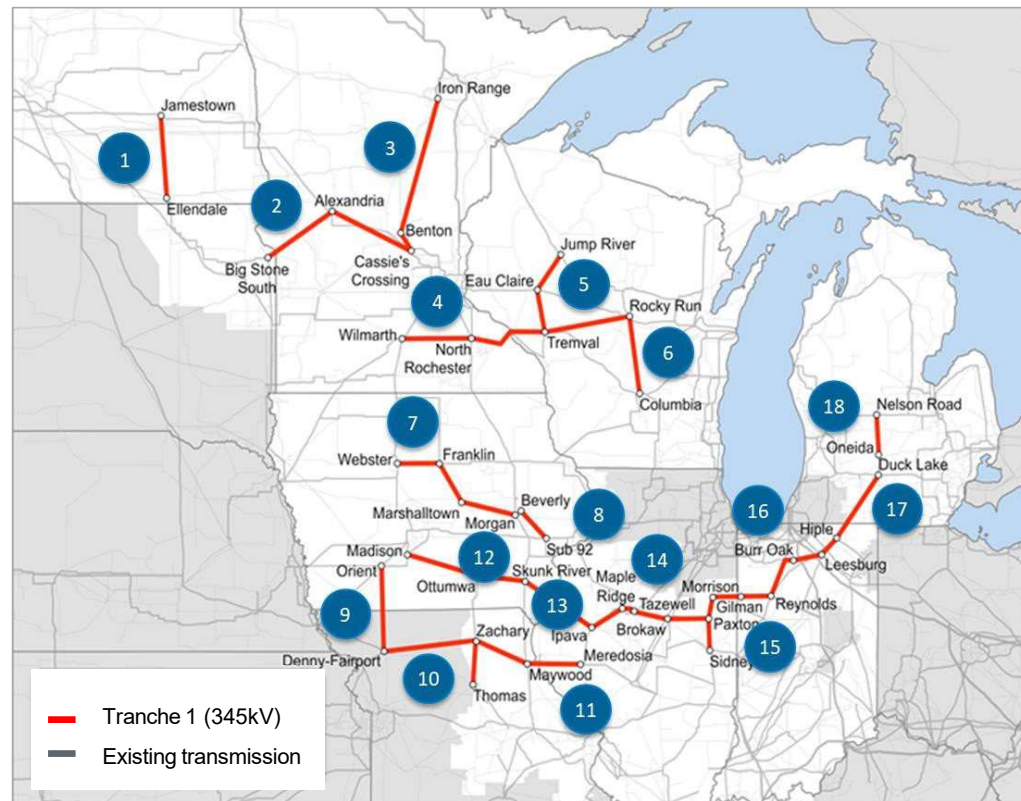


**Anticipated Changes in Energy Generation across the MISO footprint in "Future 1"**



# Expanding Renewable Generation is Driving Transmission Expansion to Alleviate Congestion.

**MISO Tranche 1 represents the first of what is expected to be four iterations and is estimated to require over \$10.3 billion of investment**





**National  
Generation Mix  
has also evolved...  
Less Coal...  
More Gas...  
More Wind...  
More Solar.**

**...Resulting in  
Rates that are  
more Sensitive to  
Natural Gas  
Prices.**

eia Source: U.S. Energy Information Administration

