



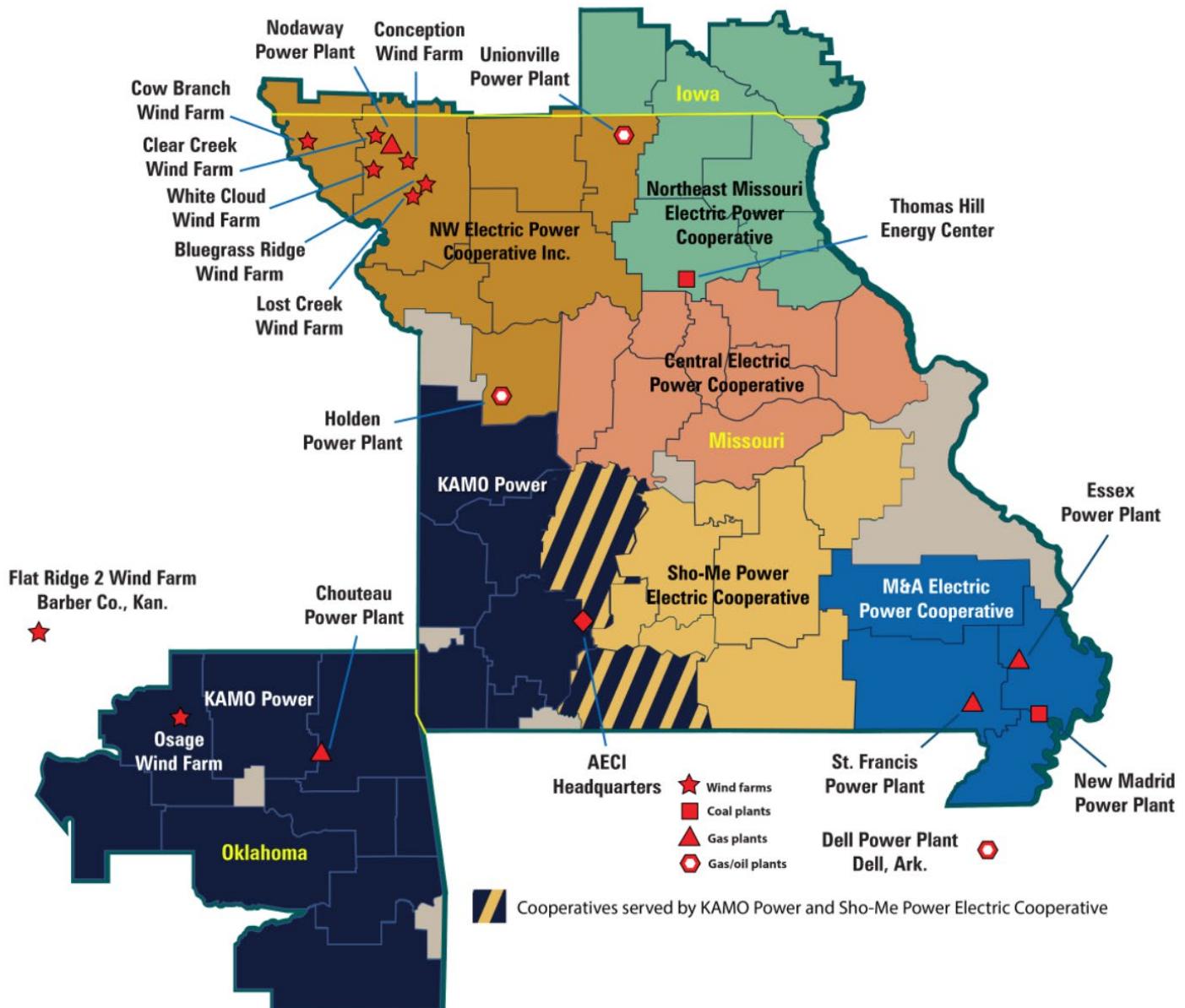
A Touchstone Energy® Cooperative 

The Touchstone Energy logo consists of three stylized human figures in red, orange, and yellow, standing together with their arms around each other. Below the figures is a green horizontal swoosh.

Roger Clark, Senior Vice President & Chief Commercial Officer

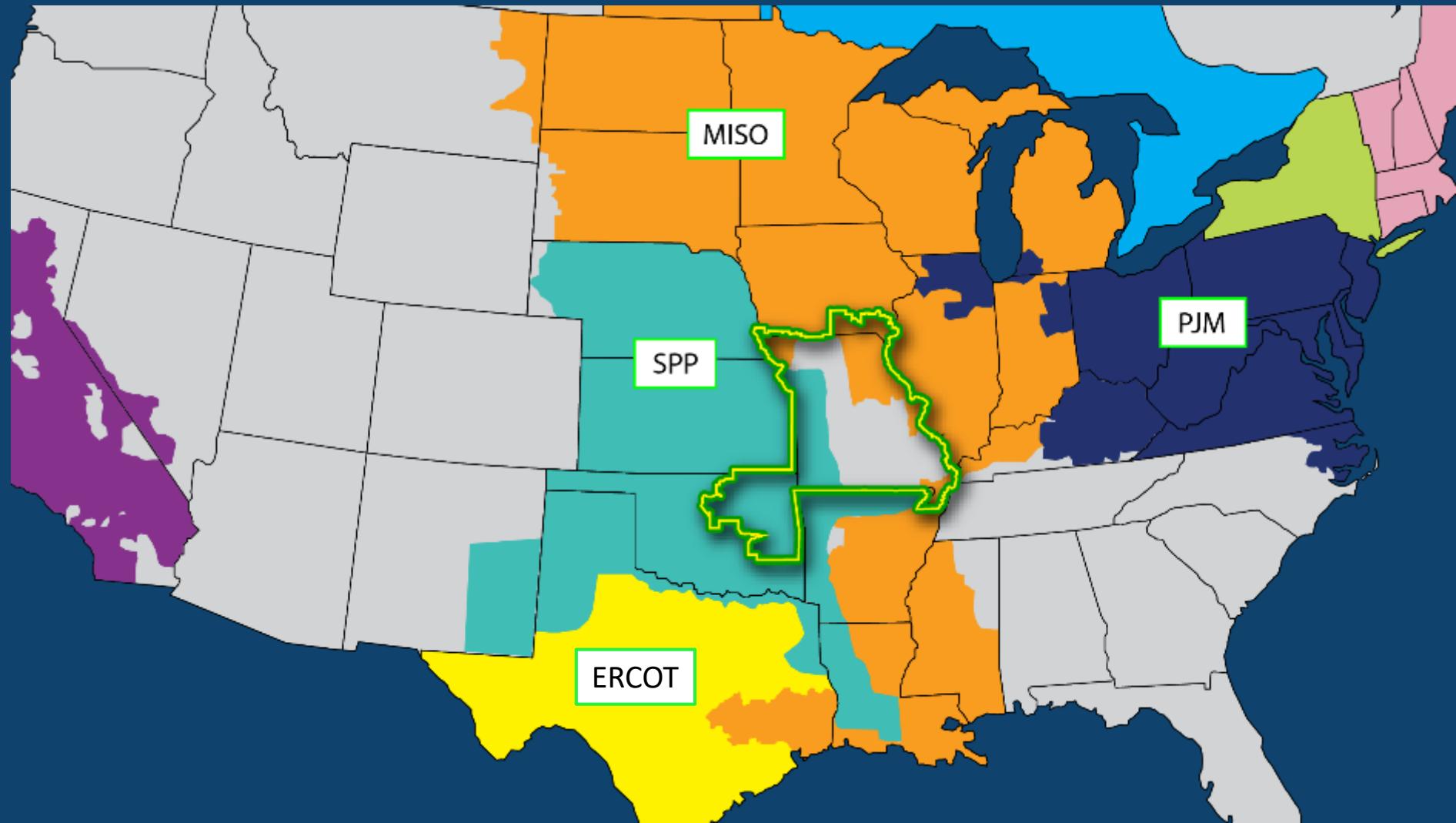
August 13, 2024

AECI Service Territory



Associated's Regional Footprint

AECI service area in green



Generation & Load

Associated's Evolving Resource Mix



2,353 MW
COAL



2,795 MW
GAS



478 MW
HYDROELECTRIC

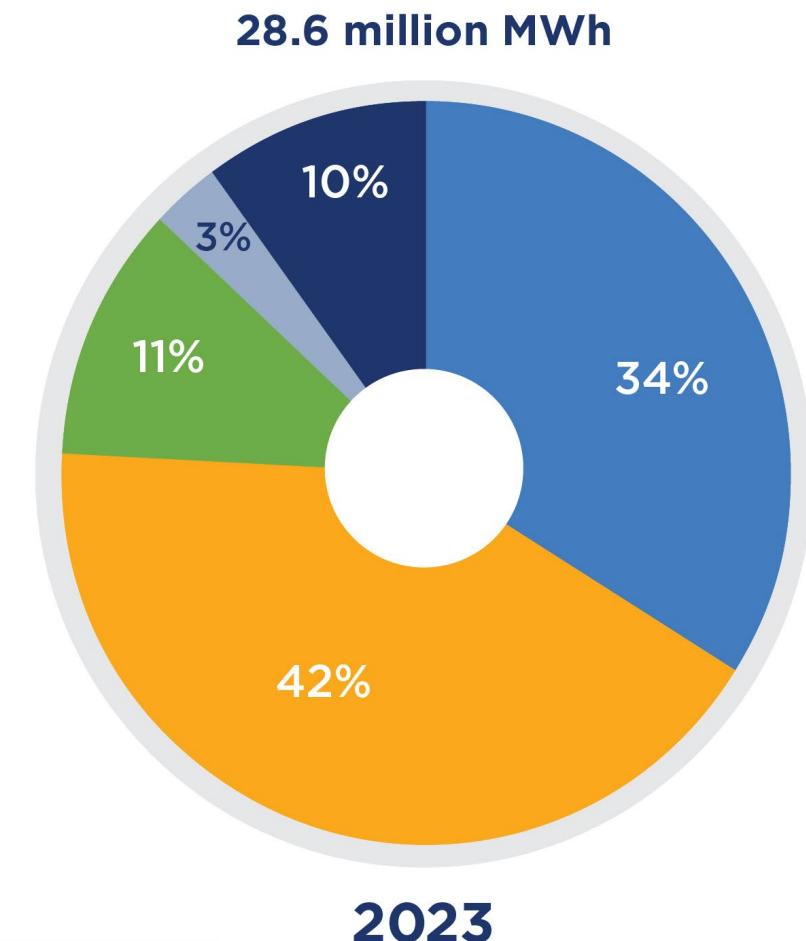
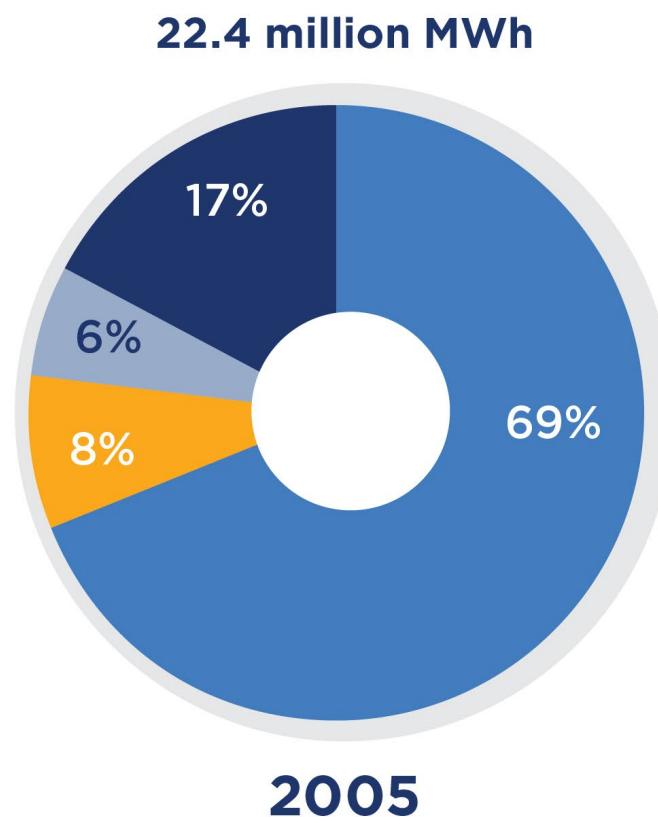


1,240 MW
WIND



44 MW
LIQUID FUEL

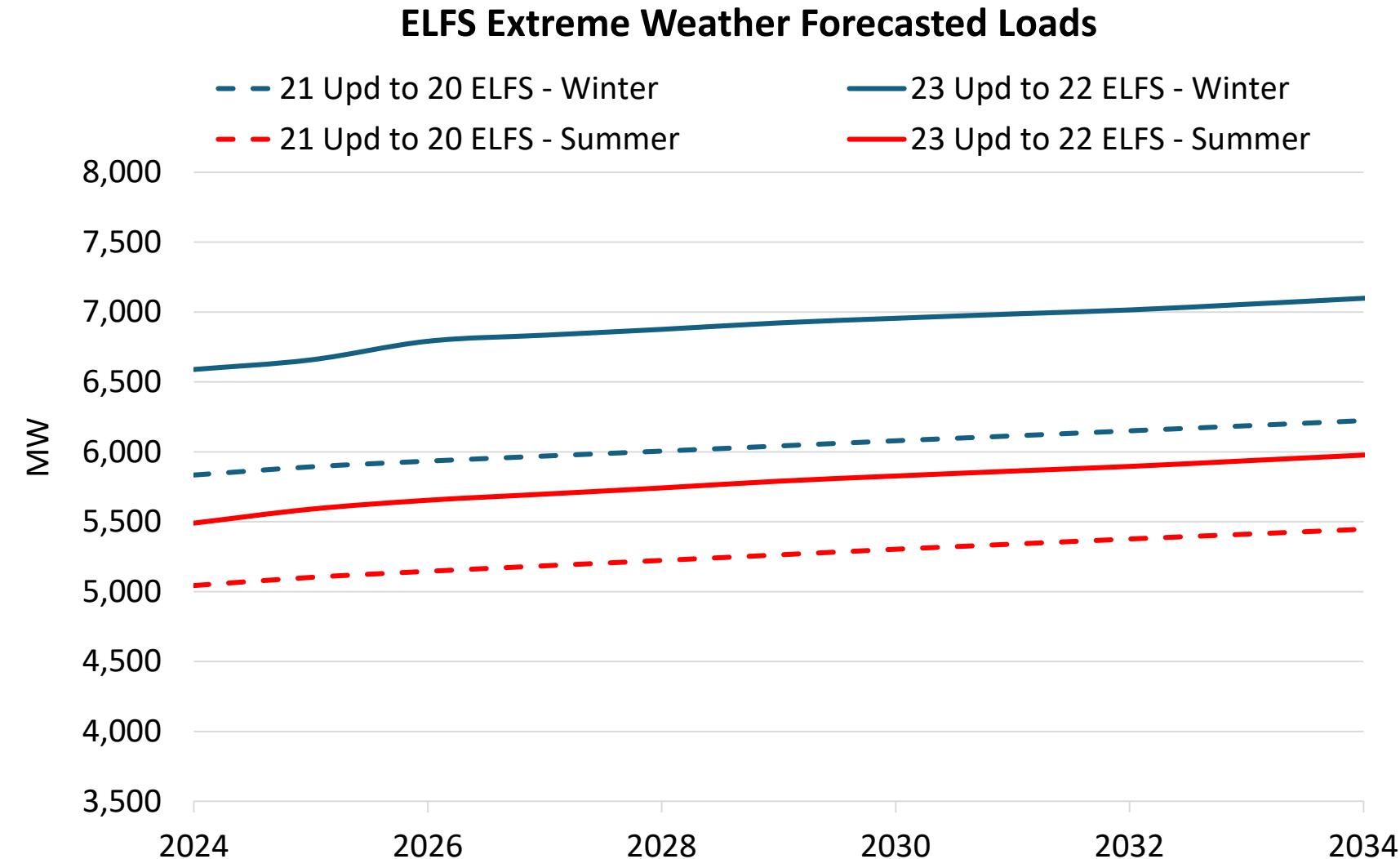
TOTAL NAMEPLATE - 6,910 MW
TOTAL CAPACITY - 5,670 MW



COAL • GAS • WIND • HYDRO • PURCHASES

Electric Load Forecast Study

- Extreme weather forecast based off 50-year weather
- Exceeds historic extreme weather events
 - Uri – 5,549 MW
 - Elliott – 5,899 MW
 - Gerri – 5,716 MW
- 15% increase in P50 base load over the last 4 years

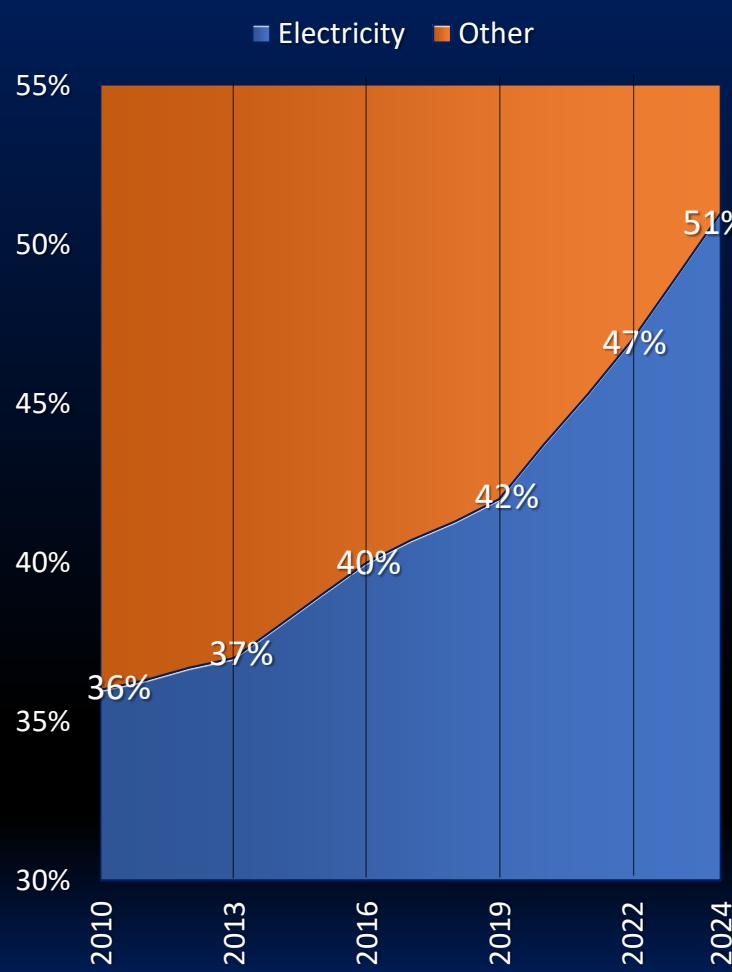


Shifting Load Profile

Associated Peak Trends



Primary Heat Source

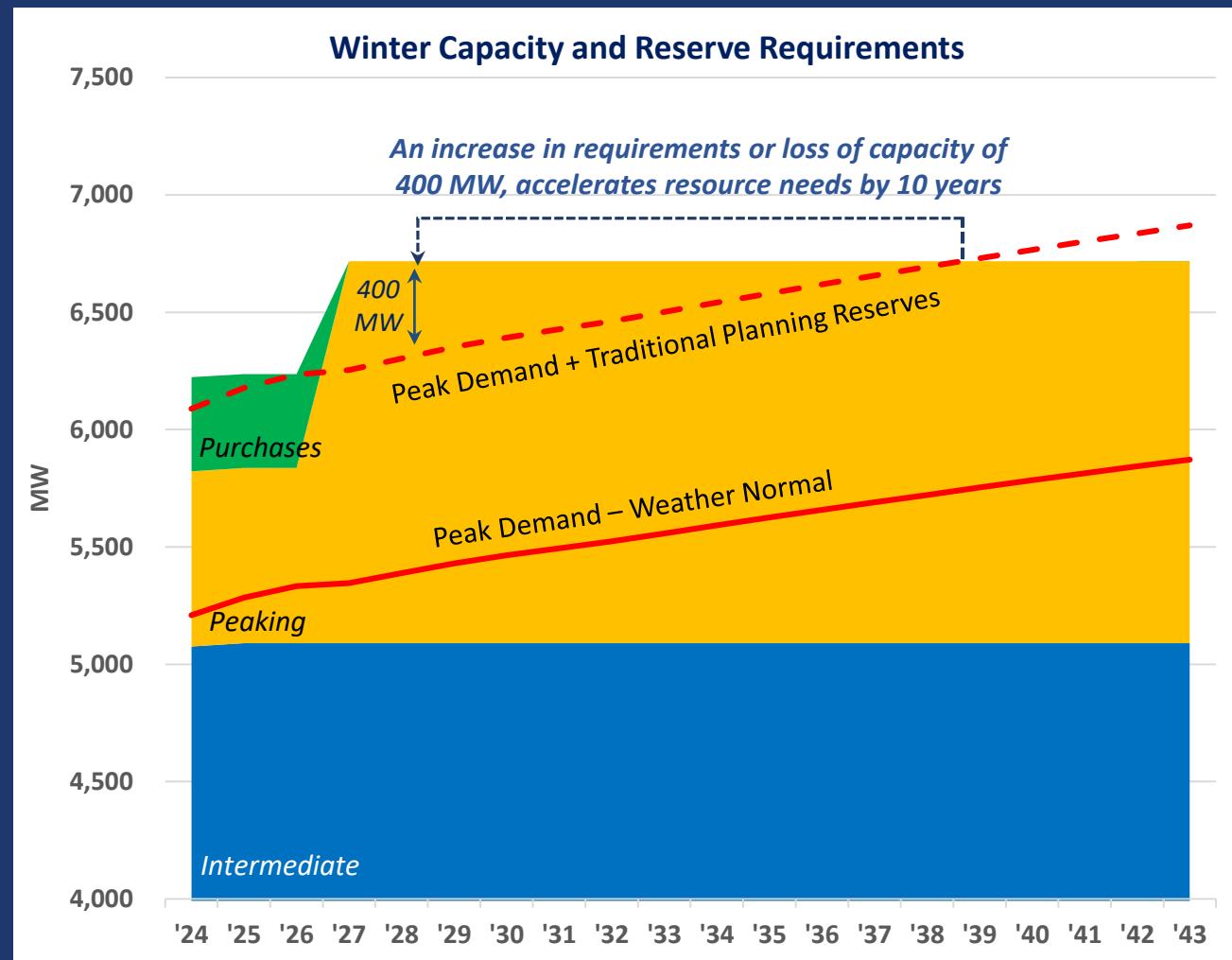


Associated
transitioned to
winter peaking

Winter heating
load has more
volatility

45% increase in
Planning Reserve
Margin over the
last 4 years

Uncertainty in Capacity Requirements



Simple cycle gas generation can take 5 years to complete

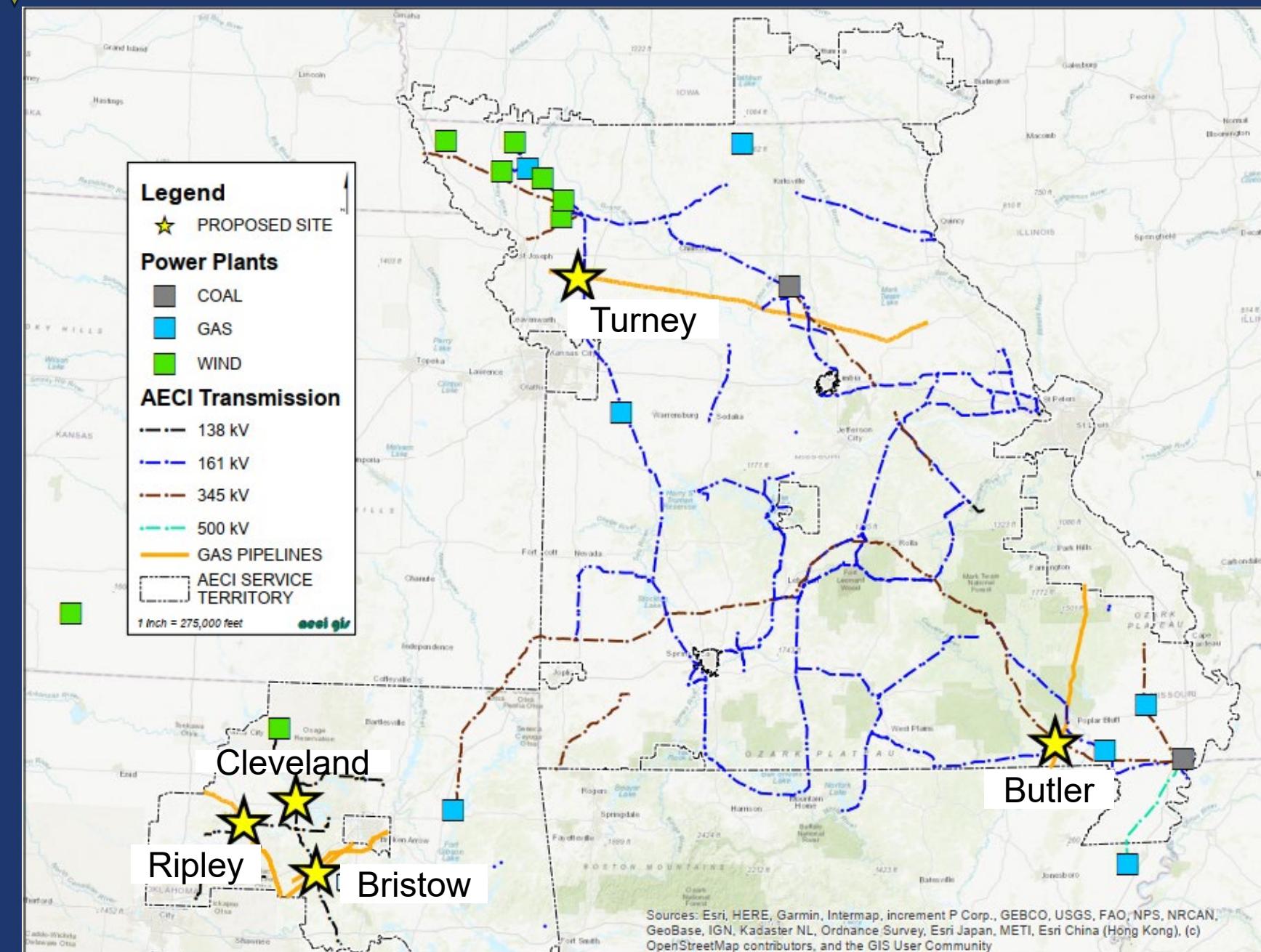
GIA queue study process + transmission upgrades
Environmental site assessments + ROW for trans, pipe, & water

Significant schedule shifts can result from small changes in capacity needs

Associated's commitment to its members under all-requirements contracts requires adequate capacity

Multiple factors can add capacity requirements

Large load addition/expansion
Unrecoverable loss of generation
Change in resource adequacy standards



Strategic Locations

Transmission Analysis

Environmental Analysis

Gas Supply Analysis

Ancillary Considerations



- 9000HL from Siemens Energy
- Output (net) ~ 418 MW
- Heat rate= 8,063 MMBtu/kWh
- 13 min. to full load, 85 MW/min. ramp rate
- Dual fuel capable
- Hydrogen capable
- Wet compression
- Air cooled generator
- -25 °F Design
- Selective Catalytic Reducer (SCR) for NO_x
- Long Term Service Agreement (LTSA)

Transmission

2023–2033 Long-Range Plan Analysis

Core LRP
Analysis

Transfer
Sensitivity
Analysis

\$606M in projects approved

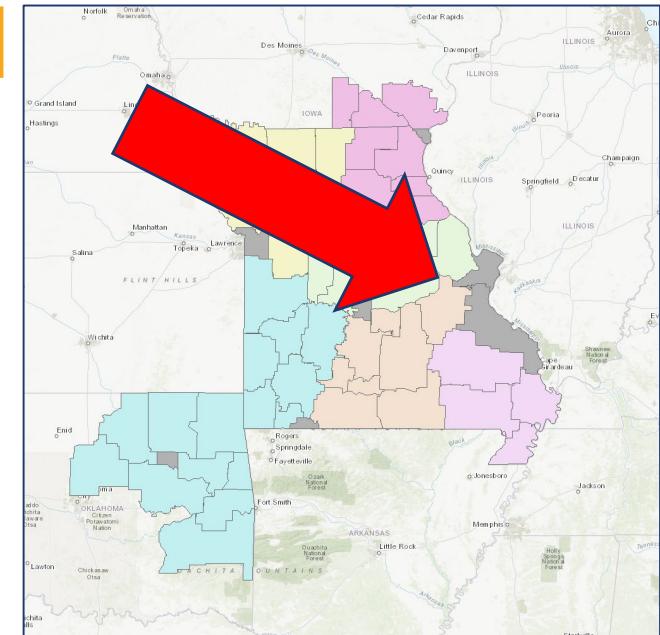
West to East

Cases:

- 2024 Spring
- 2033 Spring

Loads

- ELFS – Non-
Coincident, Base



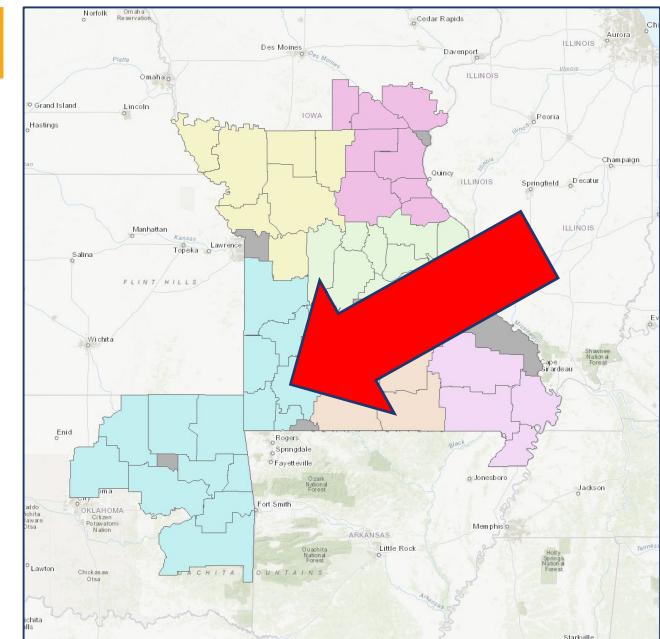
East to West

Cases:

- 2024 Winter Peak
- 2033 Winter Peak

Loads

- ELFS – Non-
Coincident, Extreme
Weather





Associated Electric Cooperative Inc.

A Touchstone Energy® Cooperative

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