# 2011 NERC Long-Term Reliability Assessment

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SPP Southwest Power Pool

# Reporting Area Changes

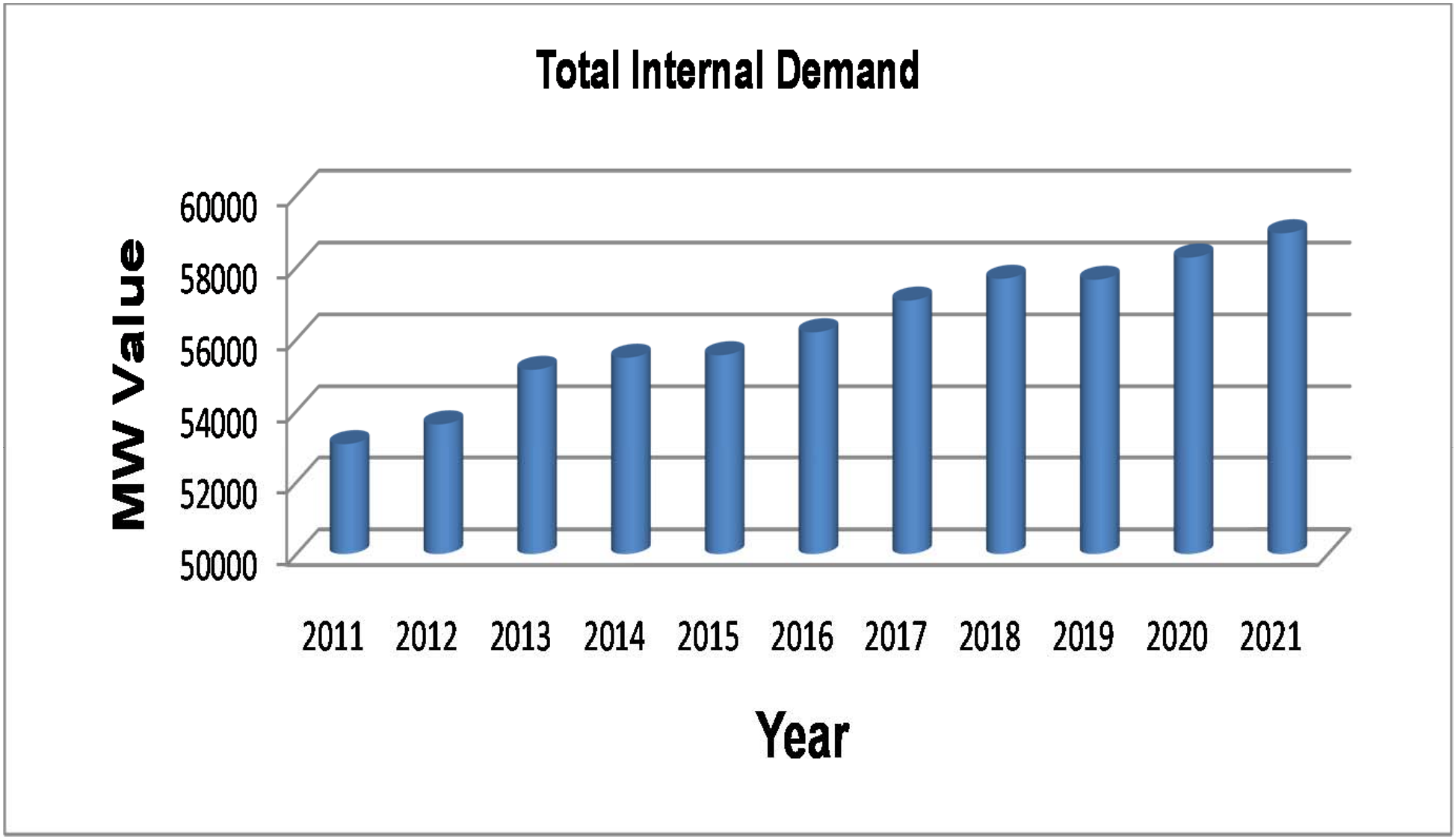
- Traditional SPP RTO Footprint, plus
  - Nebraska Members (combined 2011 peak demand of 6,101 MWs)
    - Omaha Public Power District
    - Nebraska Public Power District
    - Lincoln Electric System

  - Arkansas Electric Cooperative Entergy footprint (2011 peak demand of 1,740 MWs)
- 2011 Peak Demand Forecast 18.5% higher than previous assessment

# Demand

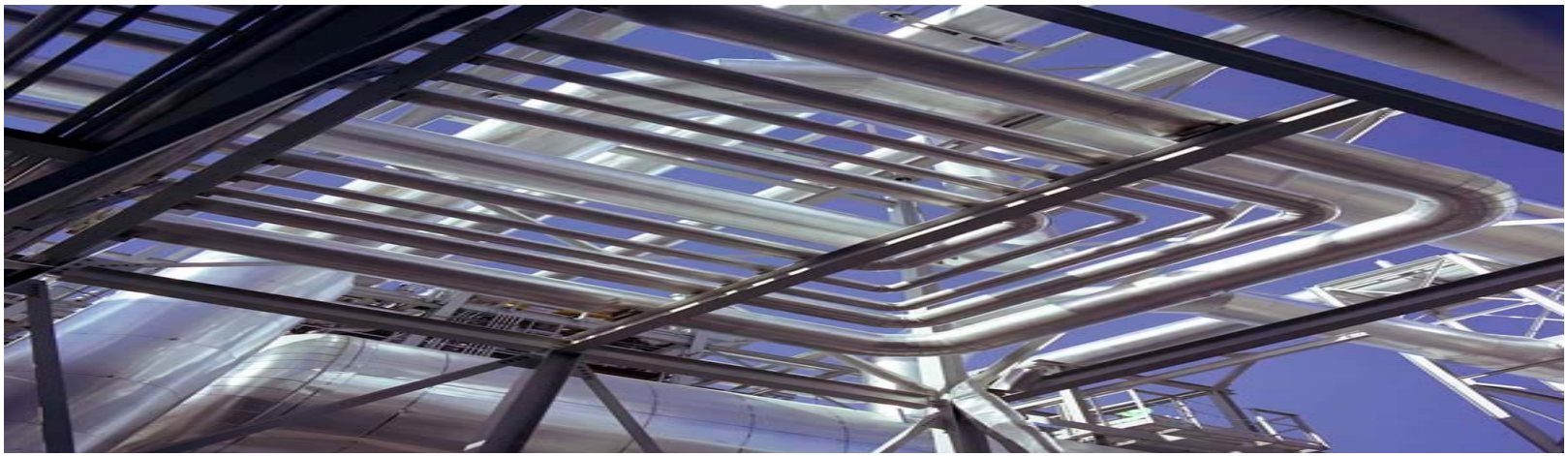
- 1% Demand growth projected over next ten years
- Peak Demand projected 58,948 MWs in 2021
- Approx. 153 MWs of Energy Efficiency programs in 2011, increasing to ~300 MWs in 2021
- Interruptible load projected to increase from 1,300 MWs to 1,420 MWs over next 10 years
- No organized demand response programs, although OG&E has a 2-year smart meter test program through 2012

# Demand 2011-2021



# Capacity

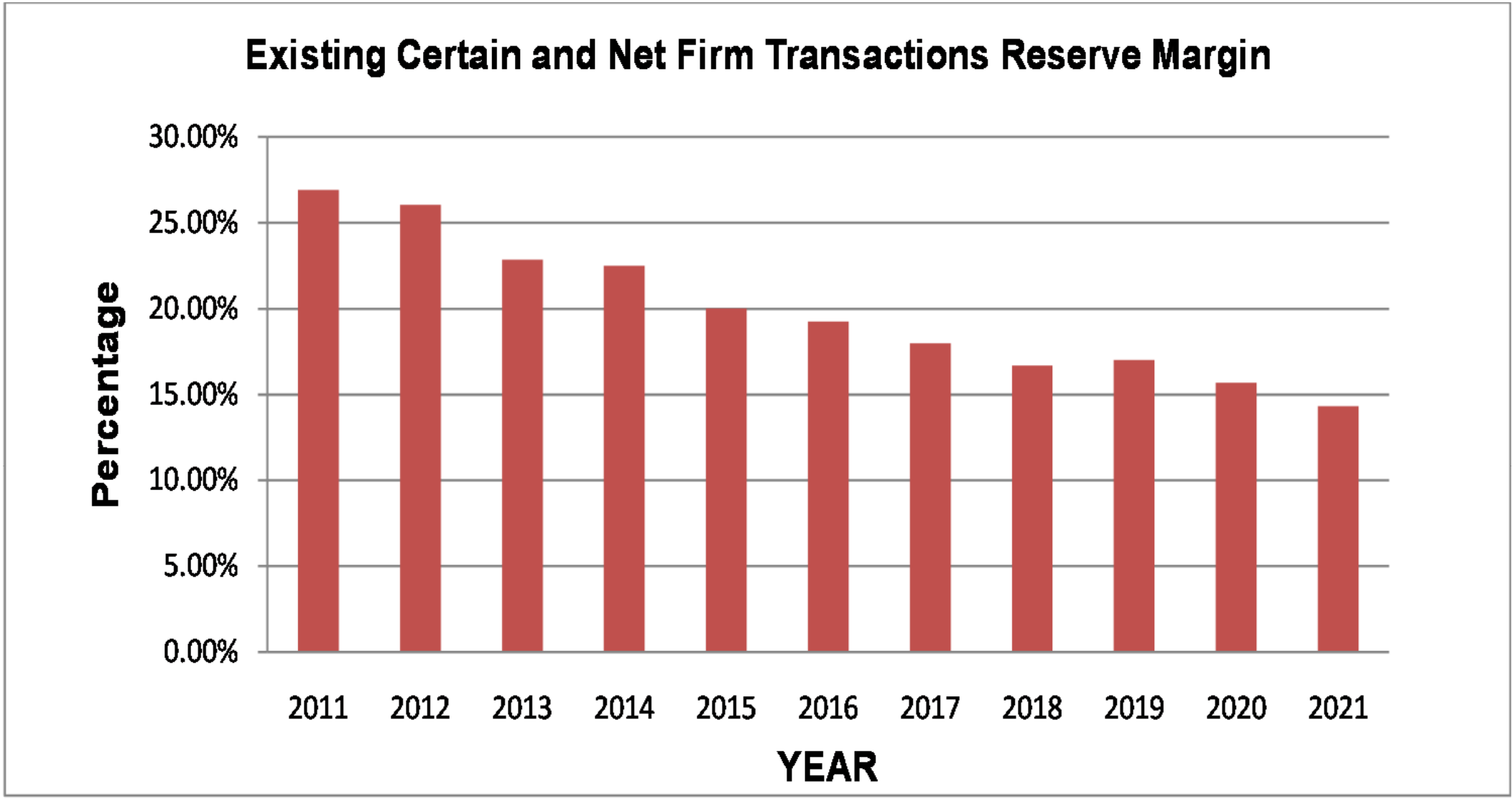
- Total Internal Capacity of 75,834 MWs in 2011
- Total Internal Capacity of 82,038 MWs in 2021
  - Includes 5,437 MWs Future Capacity Additions
- 28, 164 MWs of generation (mostly wind) in Generation Interconnection queue



# Reliability Assessment

- Reliability issues not expected
- Reserve margins are adequate
  - SPP members required to maintain 12% capacity margin, which translates to a 13.6% reserve margin
  - Forecasted reserve margin is 26.9% in 2011, decreasing to 14.3% in 2021

# Reserve Margin 2011-2021



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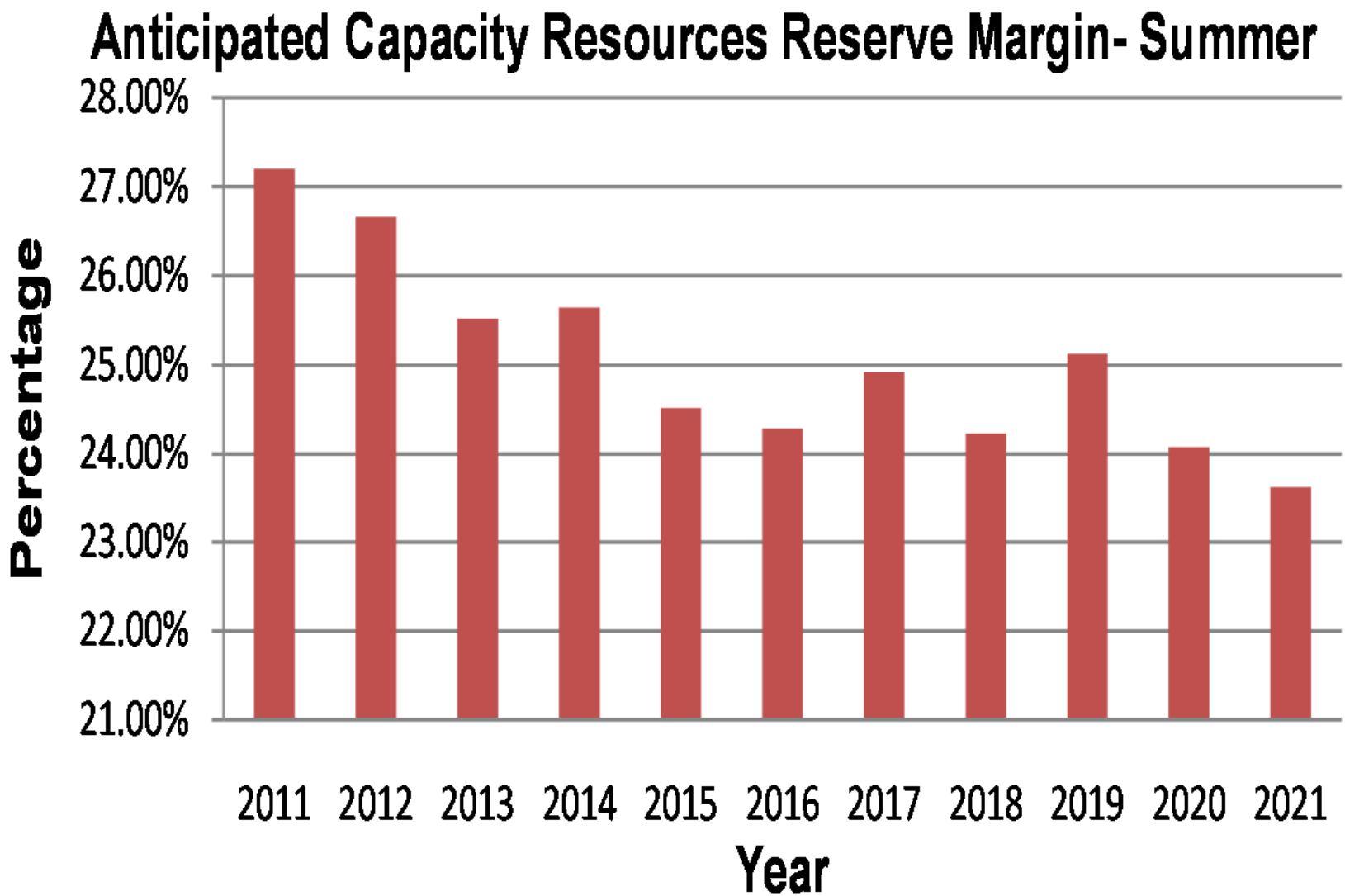

# Transmission

- 255 miles of new transmission added since 2010 assessment
- 2,995 miles expected over the 10-year assessment period
- Particular emphasis on western part of grid due to influx of renewable generation

# Operational Issues

- Systematic outages are not expected to impact regional reliability
- Generation fleet is diverse in terms of location, fuel type, and capability
- Wind generation may create some operational issues in the long-term, such as congestion management in an equitable manner

# Standing and Emerging Issues

- Acadiana Load Pocket
  - New transmission energized in May already relieving limits by 10%; entire project to be complete by summer 2012
- Variable Resource Integration
  - May cause operating challenges and need for new transmission in western SPP region
- HVDC Line Proposals
  - Two Clean Line Energy Projects could add 800 miles and 550 miles of HVDC in different areas of SPP
  - Tres Amigas Project – “super grid” that would connect SPP, WECC and ERCOT

# Standing and Emerging Issues, Continued

- Potential U. S. EPA Regulations
  - SPP has begun to include impacts in 10-year planning studies
  - SPP not projected to have significant impacts to planning reserve margins during next 10 years
  - ~2,500 MWs of generation capacity needed to satisfy 12% planning reserve margin in 2022 due to unit retirements

# Summary

- The SPP reporting area shows modest load growth, sufficient resources and adequate reserve margins for the 2011-2021 assessment period
- Transmission construction projects have not been negatively impacted by near-term economic conditions
- Long-term challenges include integration of variable generation and potential federal environmental regulations