Briefing for the Kansas Legislature

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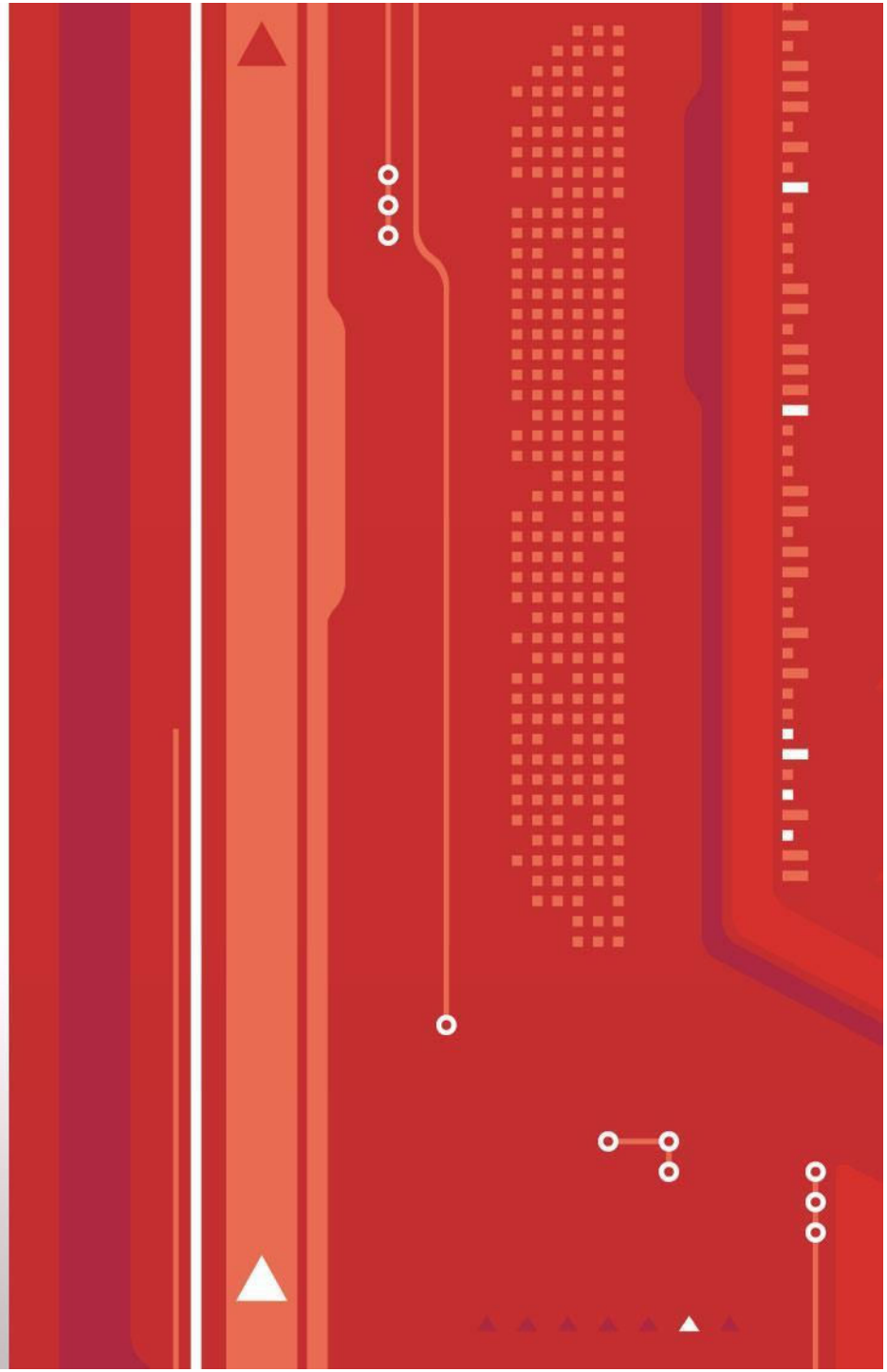
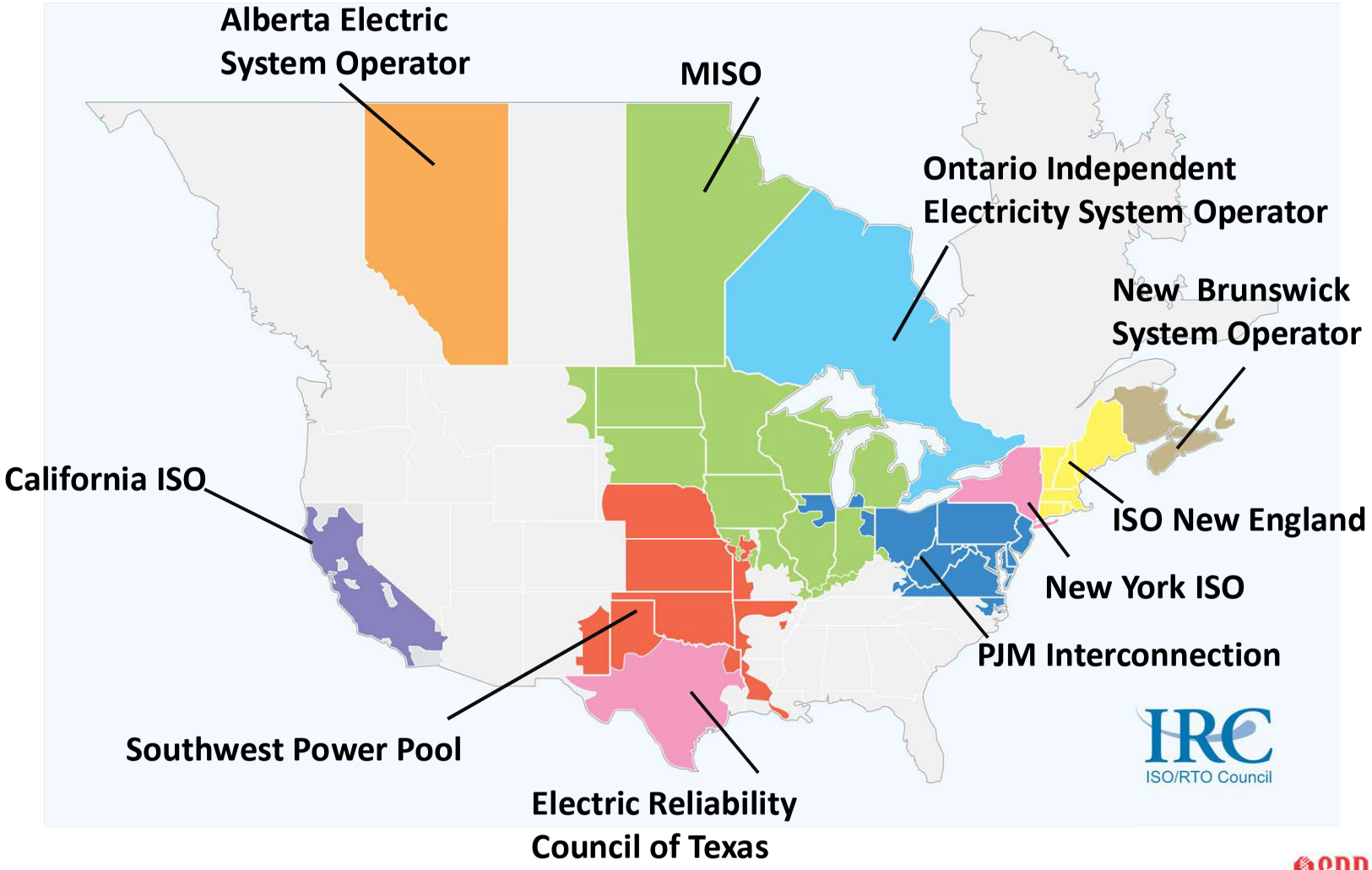
SPP Southwest Power Pool



Presentation overview

- Who we are
- What we do
- How we benefit the consumer
- Industry dynamics
- Kansas Specific Information
- Q&A

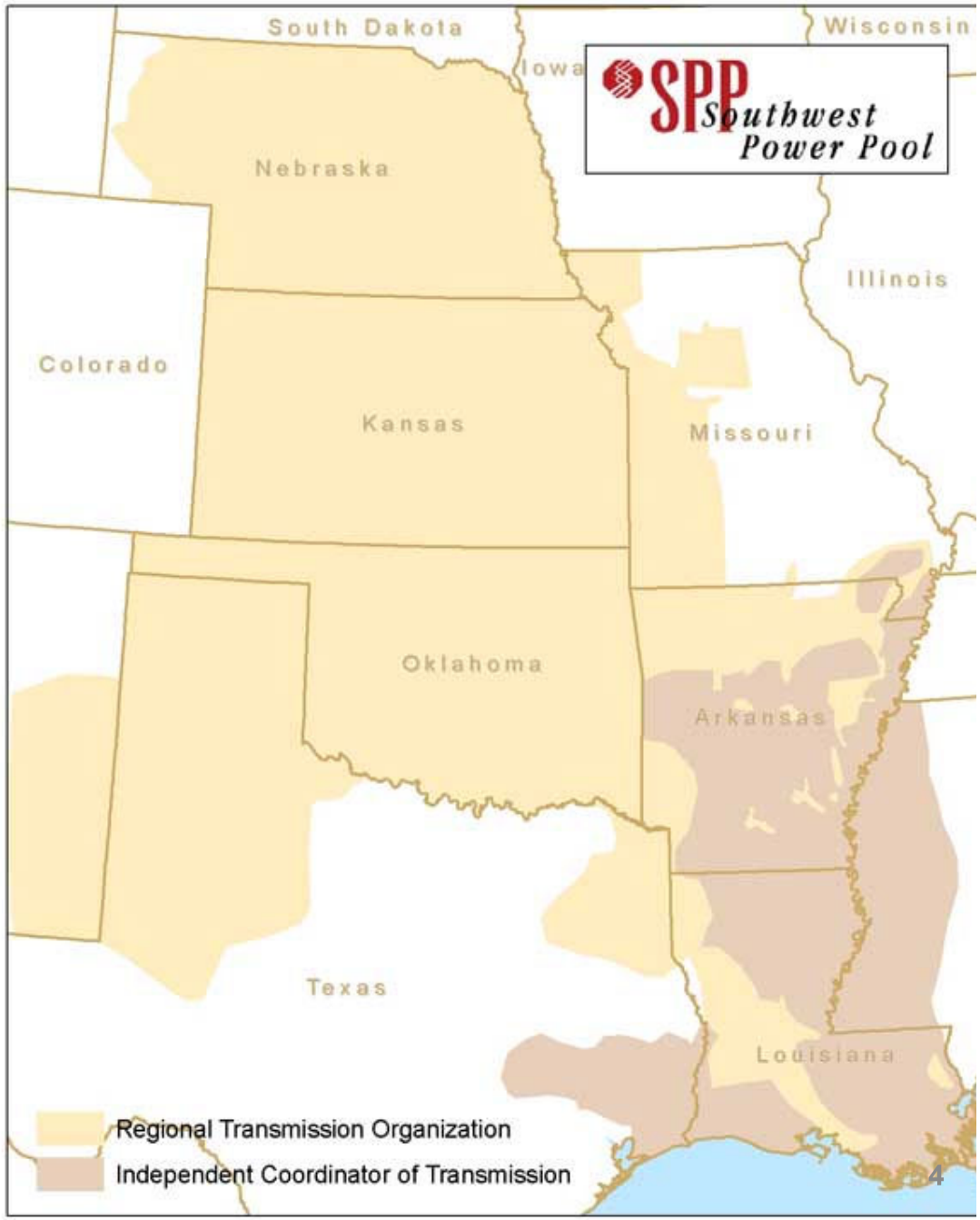
Independent System Operator (ISO) / Regional Transmission Organization (RTO) Map



Members in 9 states

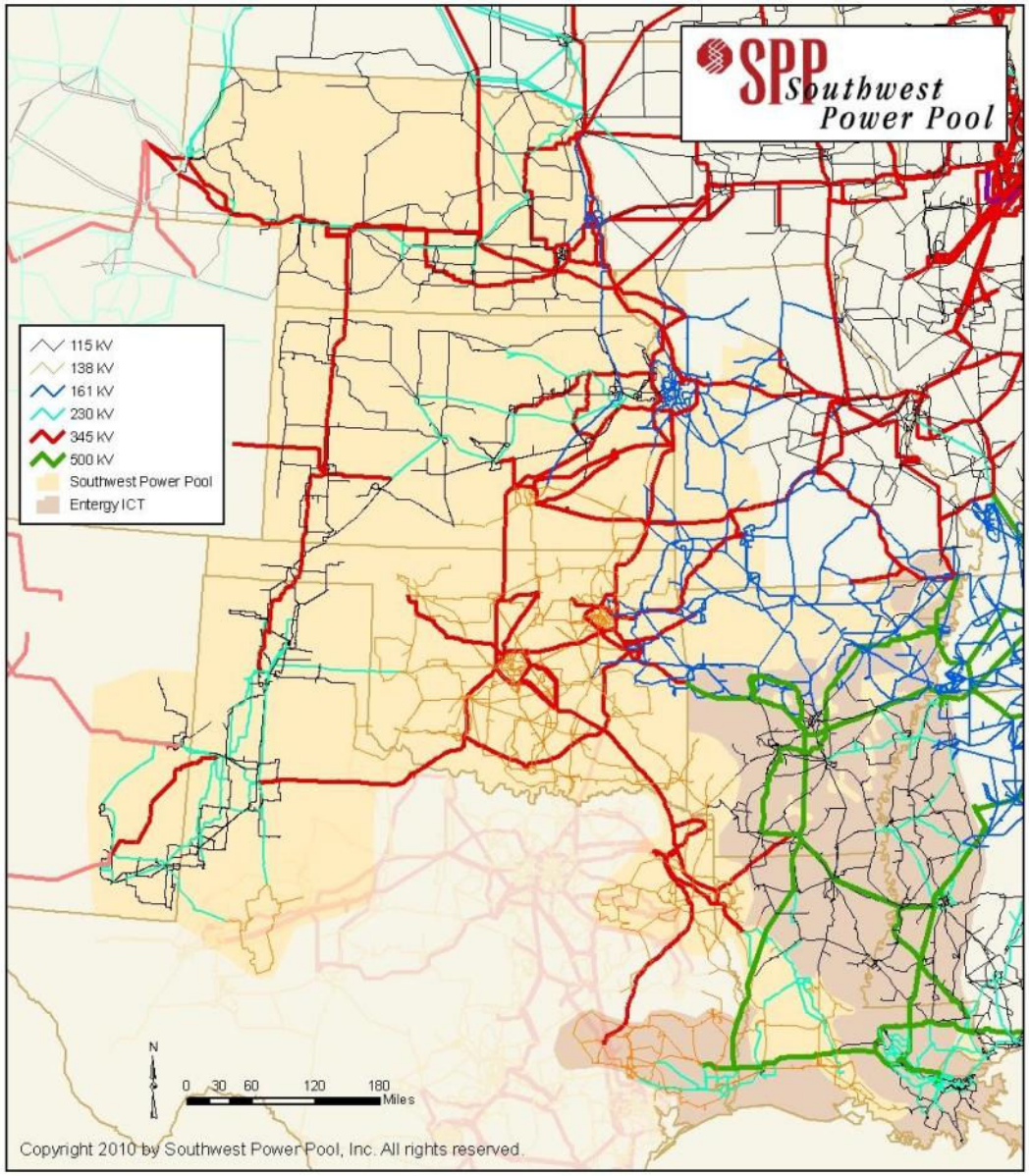
- Arkansas
- Kansas
- Louisiana
- Mississippi
- Missouri
- Nebraska
- New Mexico
- Oklahoma
- Texas

Provide services to Entergy on contract basis (ICT)



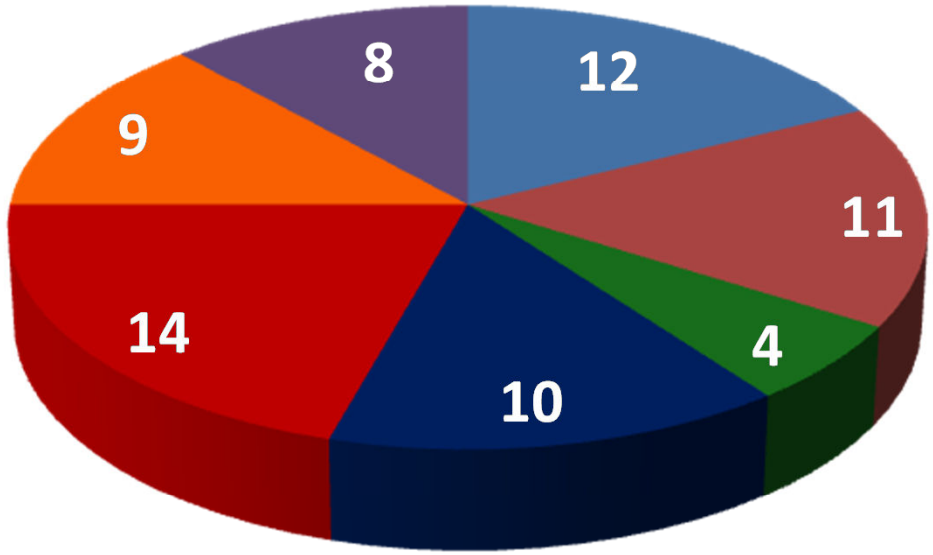
Operating Region (2011)

- 370,000 miles service territory
- 915 generating plants
- 6,408 substations
- 48,638 miles transmission:
  - 69 kV – 11,966 miles
  - 115 kV – 10,302 miles
  - 138 kV – 10,129 miles
  - 161 kV – 5,066 miles
  - 230 kV – 3,787 miles
  - 345 kV – 7,023 miles
  - 500 kV – 93 miles



68 SPP Members

- Cooperatives
- Municipals
- State Agencies
- Marketers
- Investor-Owned
- Independent Transmission Companies
- Independent Power Producers / Wholesale Generation

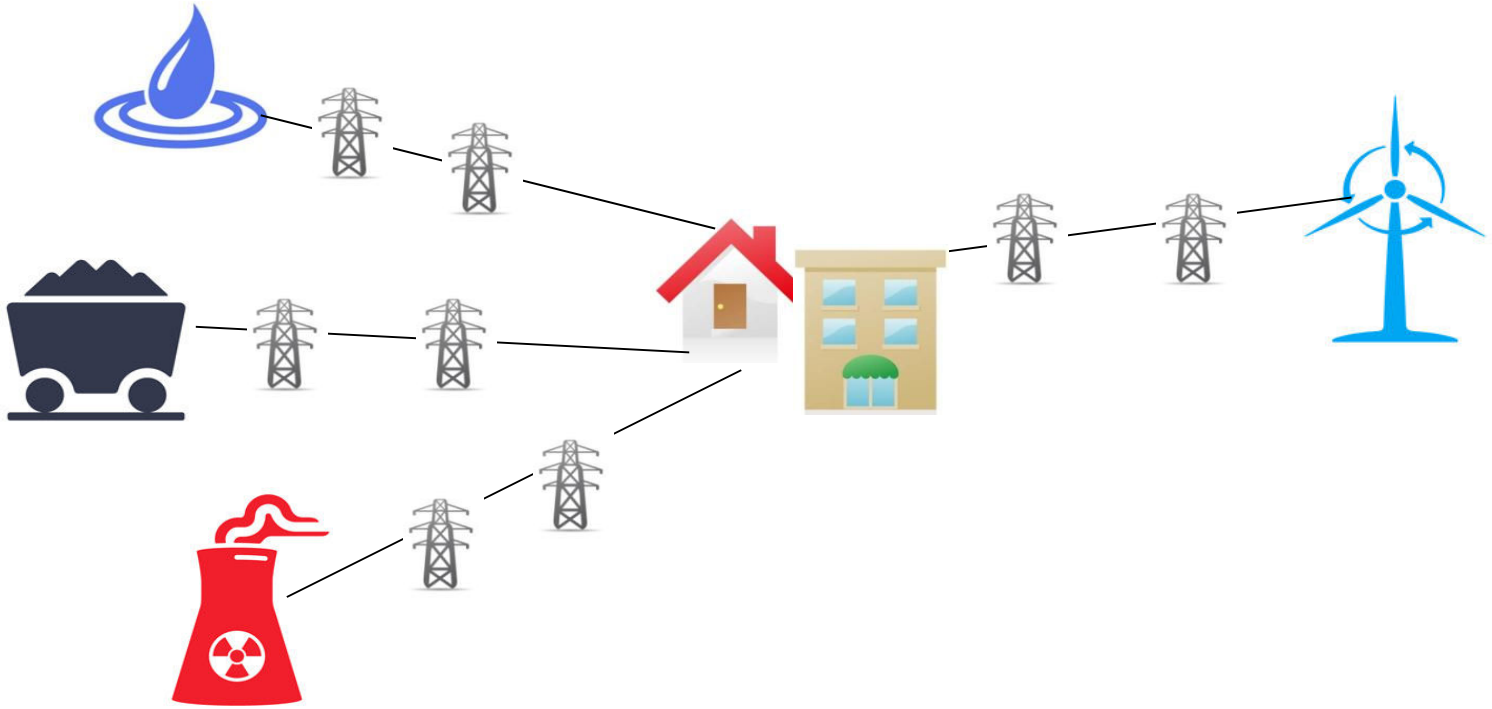


What we do – Non-Profit

- **Designed by the Federal Energy Regulatory Commission to Manage reliable flow of electricity across transmission lines in nine states**
  - Our members own the generation equipment and the transmission lines
- **Ensure legal and regulatory requirements are met**
  - Enforce federal and regional reliability standards
- **Manage financial transactions between members who buy and sell power**
  - More than 8,500 requests annually, accounting for $945 million
- **Administer tariff with consistent rates and terms**
  - Streamlines process of working across the region
- **Deliver training**
  - More than 34,000 hours to 38 organizations in 2012
  - More than 900 individuals who responsible for grid operations
- **Plan for future transmission lines**
  - Improvements and additions

Industry dynamics

- **Electricity cannot be stored so generation, transmission, and distribution must occur instantaneously**

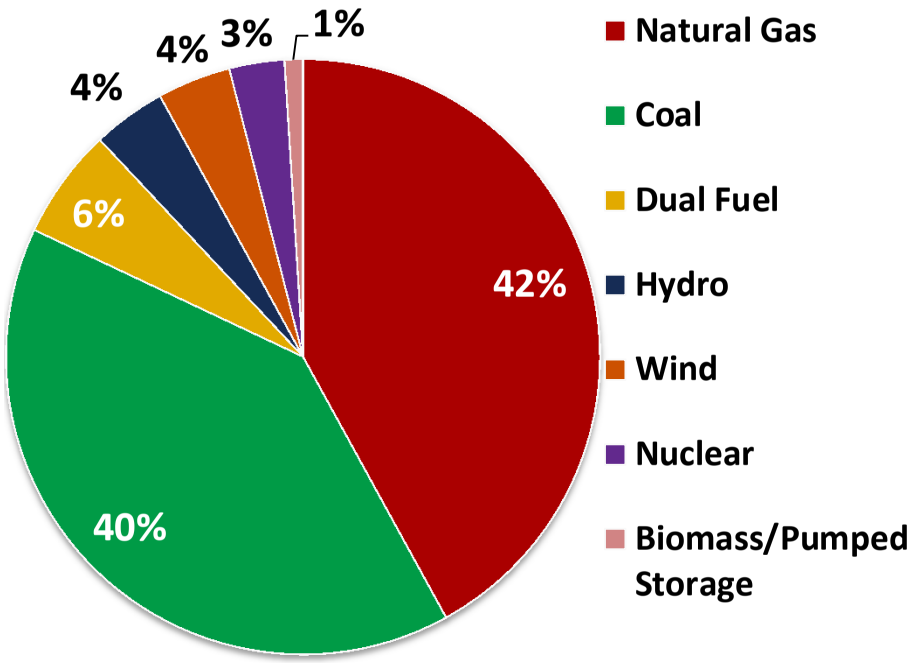


Industry dynamics

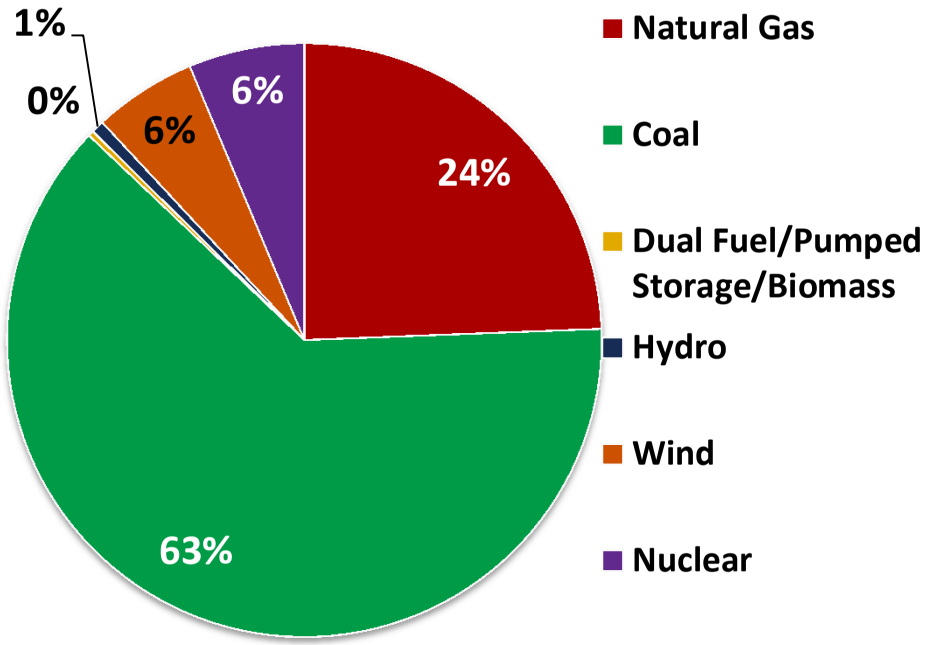
- Multiple generation sources (wind, solar, nuclear, hydro, coal, natural gas) increase reliability
- Generation facilities aren't always located where energy is needed, and transmission lines may not exist to deliver energy to where it is needed
- Some generation sources are only available at certain times
- Congestion doesn't allow energy to move along a certain path; results in inability to use least-cost electricity to meet demand

2011 RTO Generating Capacity and Energy

63 GW Capacity



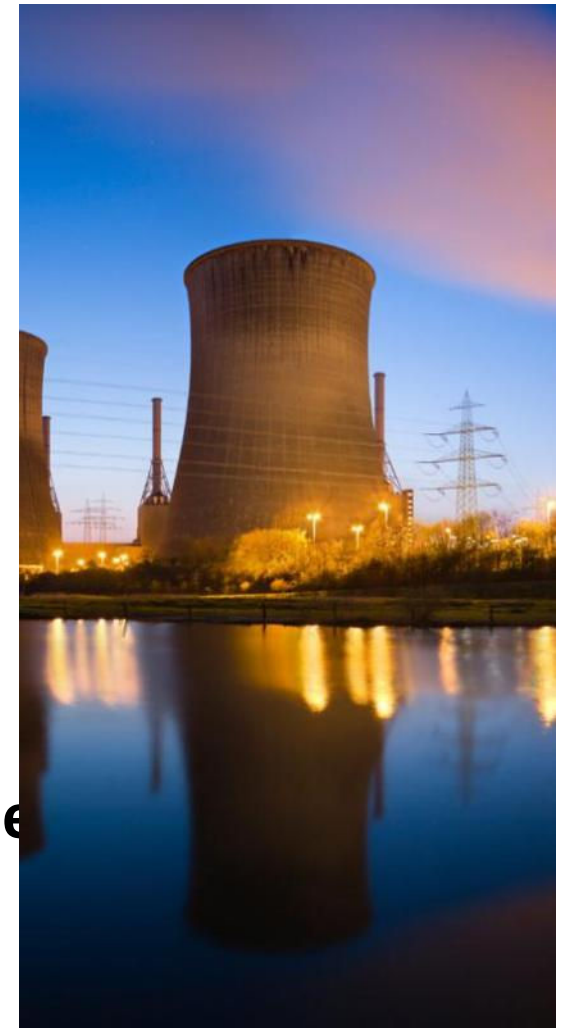
226,011 GWh Energy Produced



12% annual planning capacity requirement

2011 Wholesale Energy Market

- 37 participants
- 438 generating resources
- 2011 transactions = $1.28 billion
- 48 GW coincident peak load
- 229.7 TWh energy consumption
- 16 Balancing Authorities
- ~1,500 MW wholesale demand response



How we benefit the consumer

- **A utility has three ways to serve its customers:**

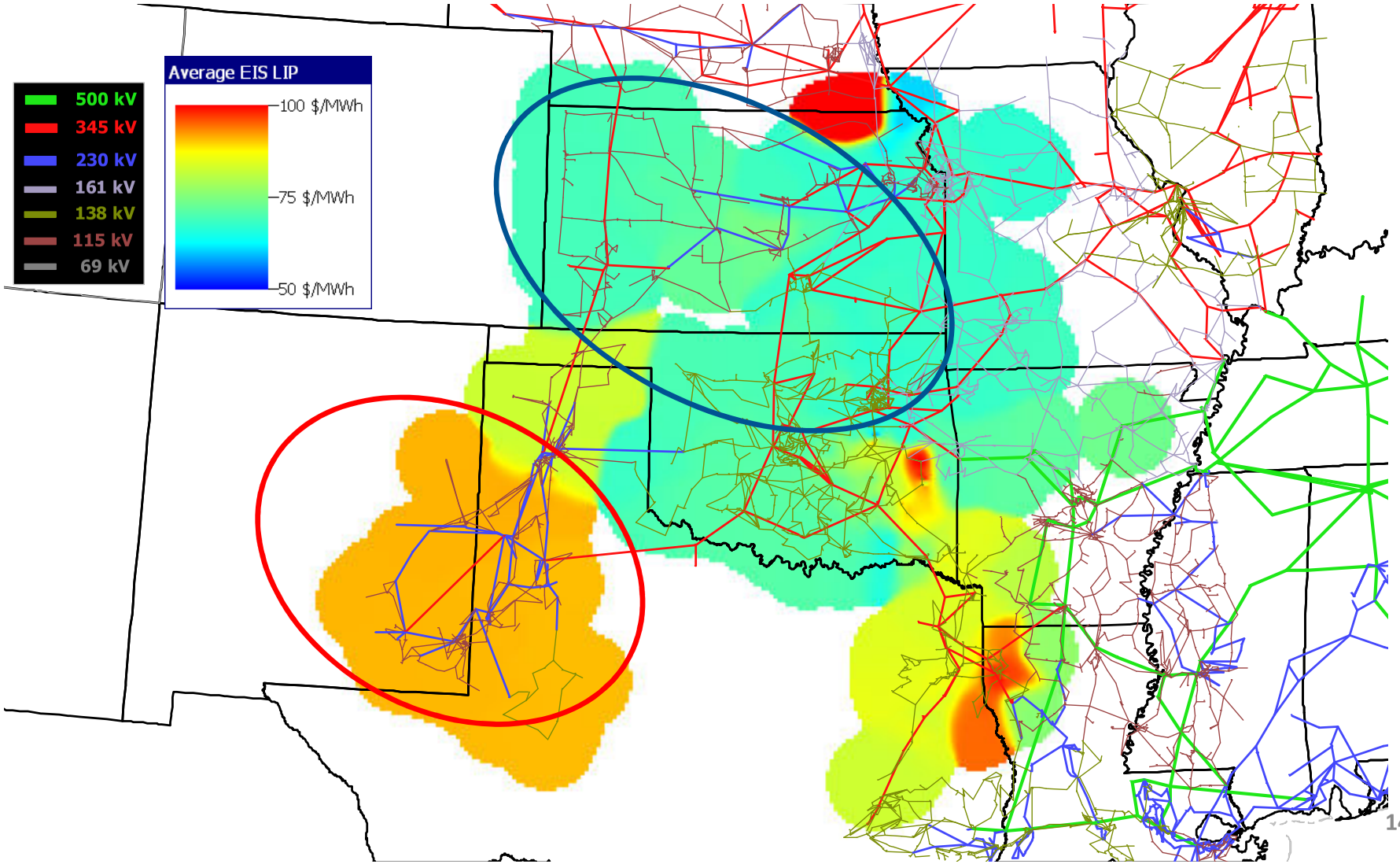
  1. Generate its own power
  2. Buy power from another provider
  3. <u>Buy from the SPP market</u>

- **An energy market enables comparison of real-time prices to make the most cost-effective decision**
  - Companies can sometimes buy power for less than it would cost to generate its own energy
  - Major limiting factor of Markets is Congestion

GRID CONGESTION

Impacts markets and transmission planning

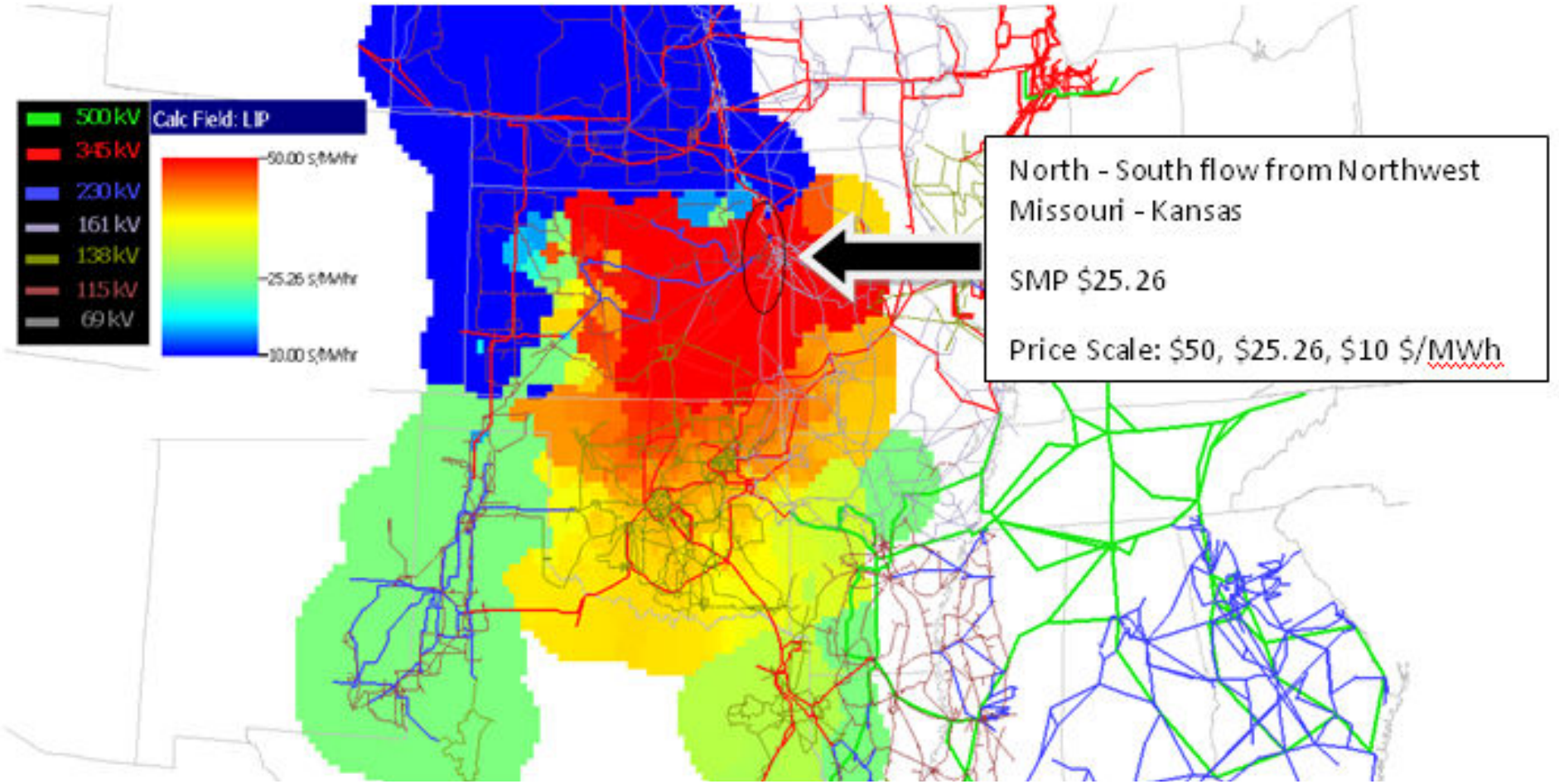
Congestion prevents access to lower-cost generation



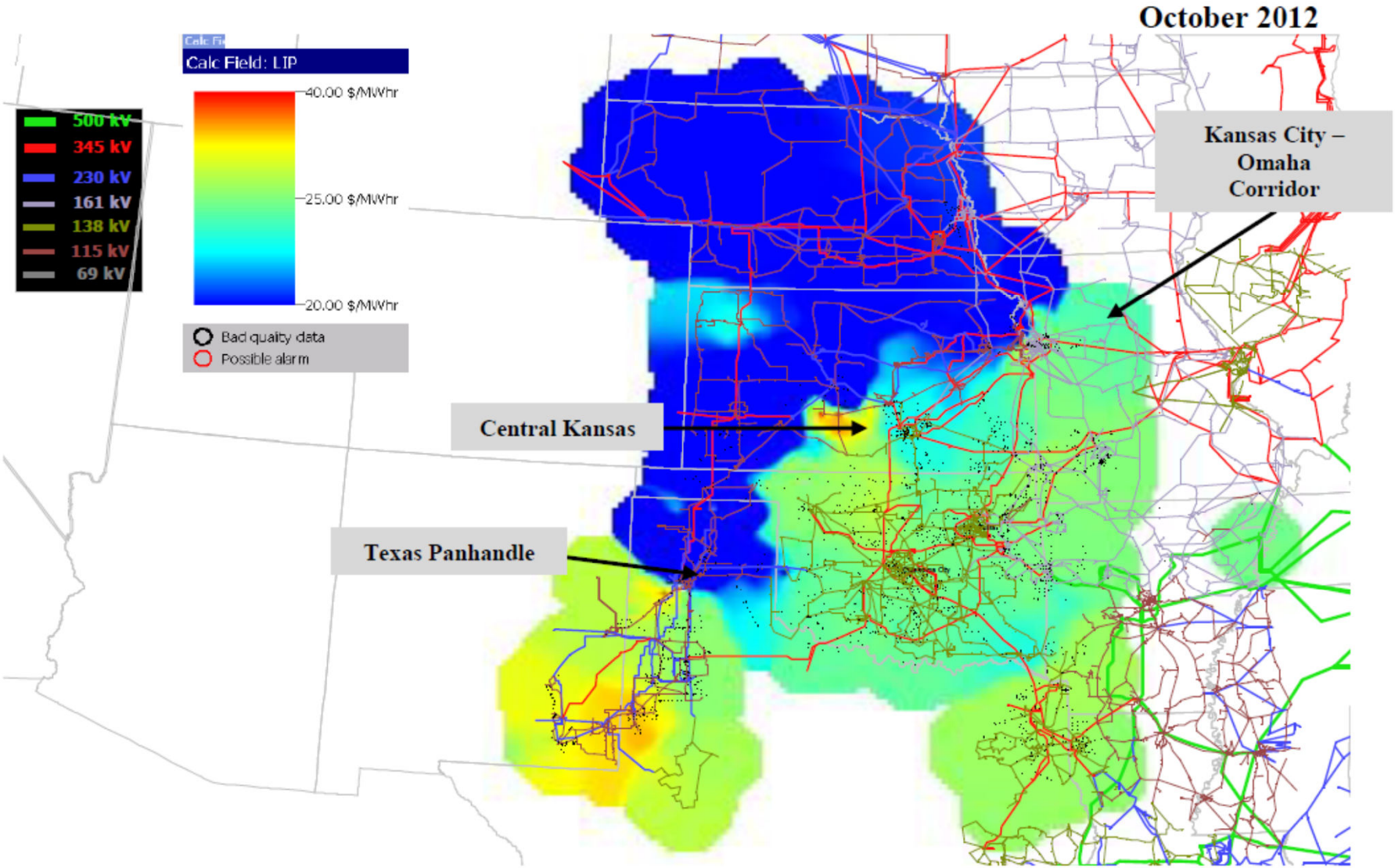
Congestion's Impact on Wholesale Market Prices

January 26, 2010 Interval Ending 12:15 PM

LAKALAIATSTR : Lake Road – Alabama 161kV (MPS) ftlo Iatan – Stranger Creek 345kV (KCPL)



East – West Congestion in Kansas



Services

TRANSMISSION PLANNING MAPS

What role do state regulators play?

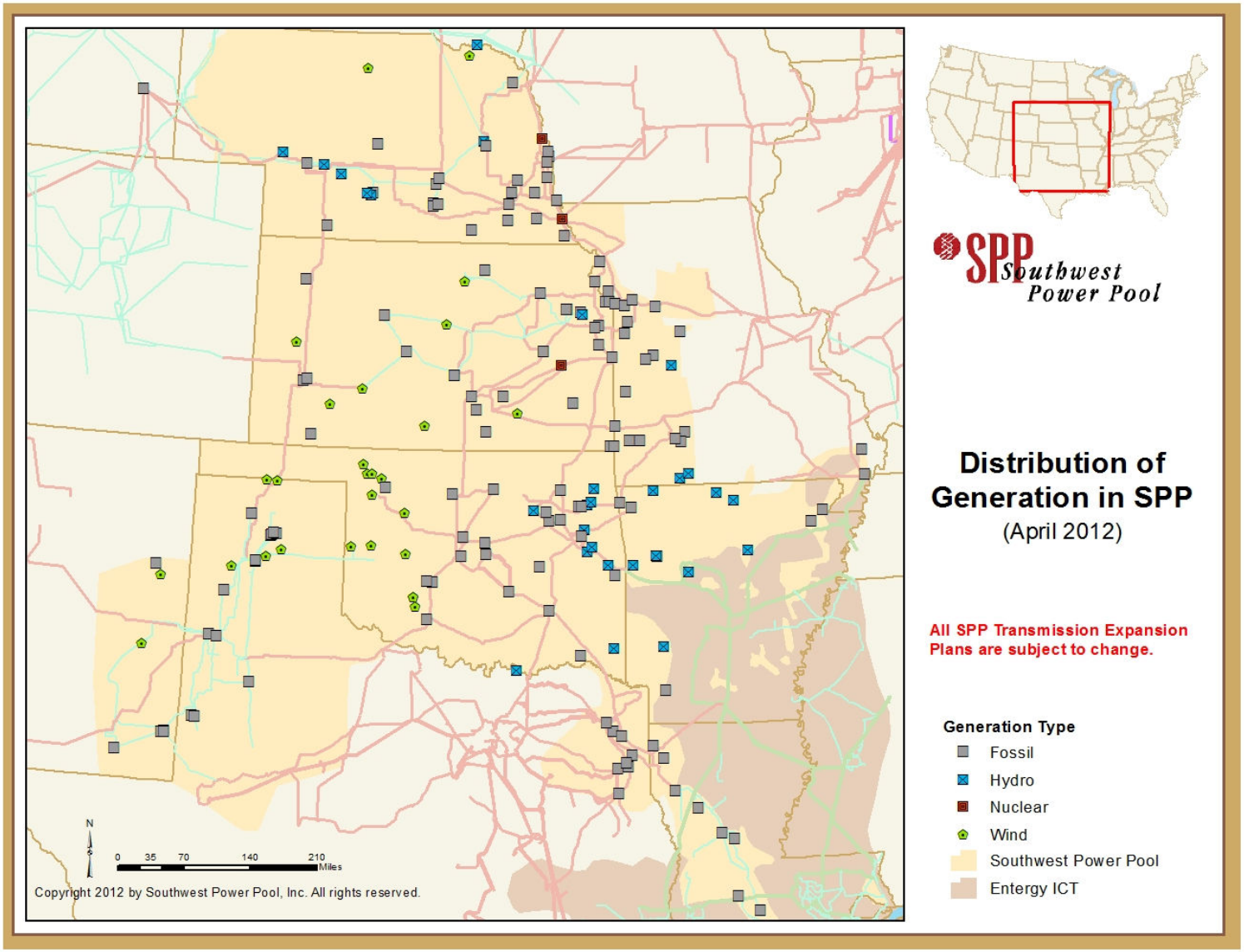
- **Regional State Committee - Retail regulatory commissioners from:**

Arkansas	**Nebraska**	**Oklahoma**
Kansas	**New Mexico**	**Texas**
Missouri		

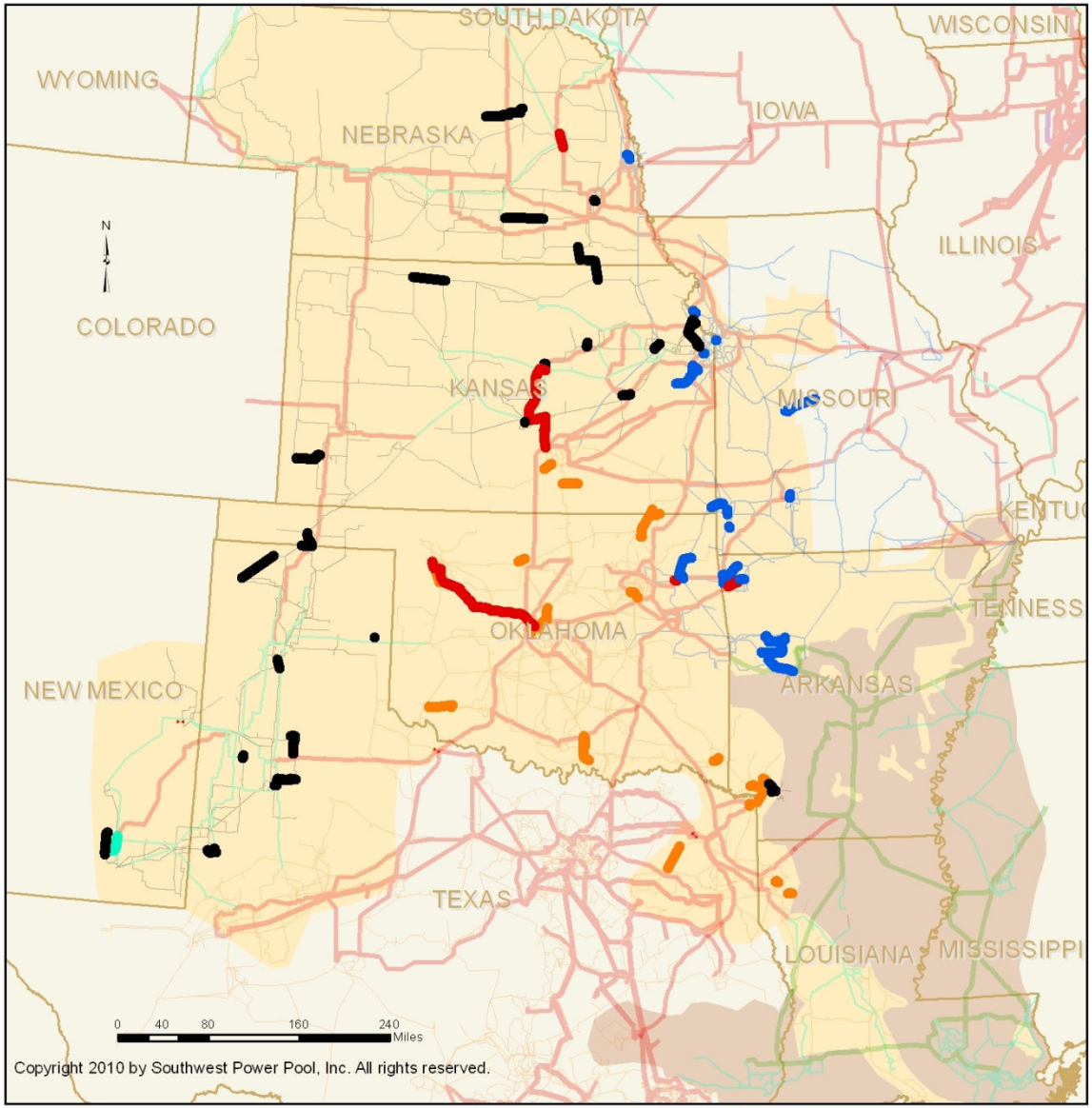
Louisiana maintains active observer status

- **Primary responsibility for:**
  - **Cost allocation for transmission upgrades**
  - **Approach for regional resource adequacy**
  - **Allocation of transmission rights in SPP's markets**

Generating Resources



Projects Constructed 2005-2011



SPP Southwest Power Pool

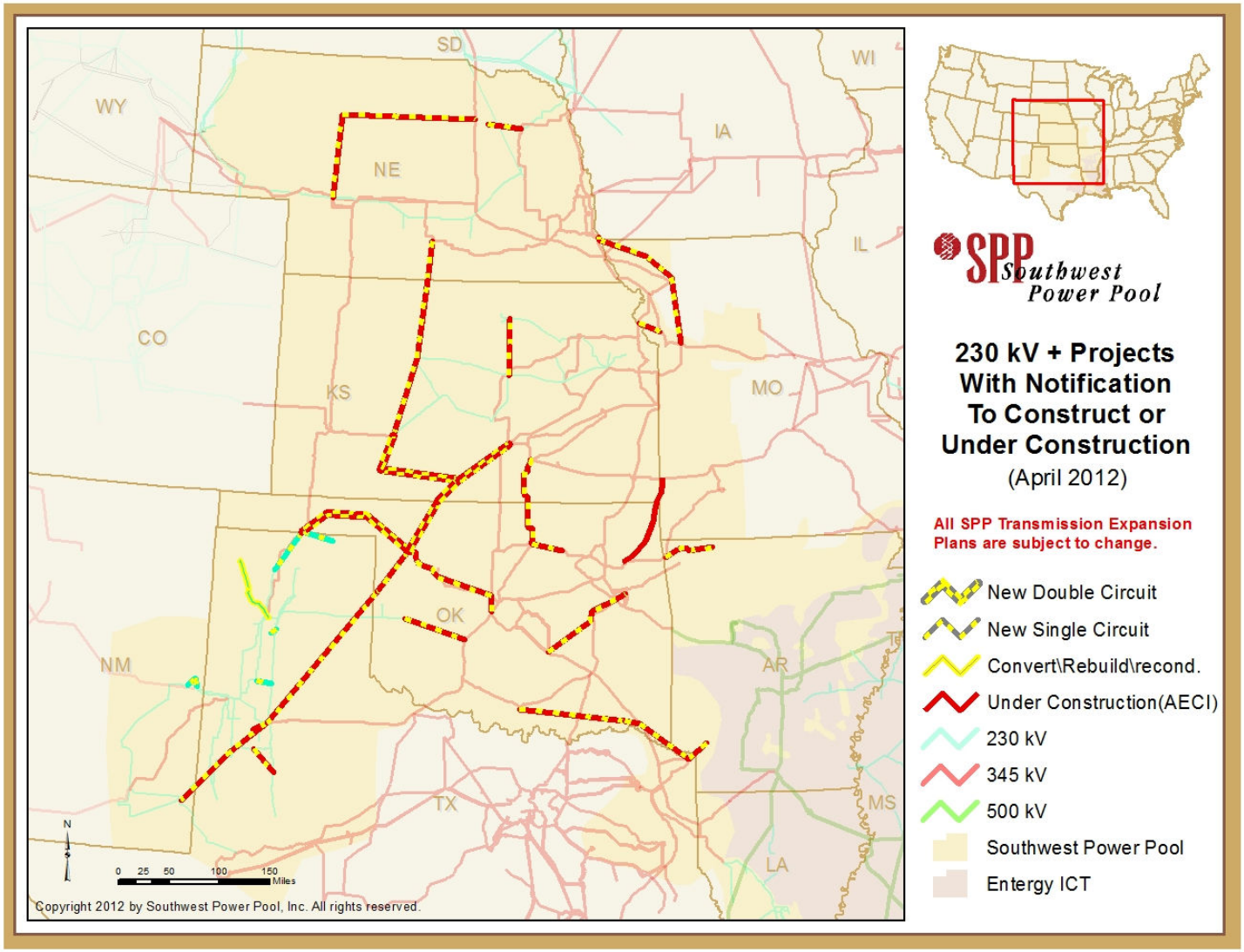
Projects Constructed

(2005-2011)

- 115 kV
- 138 kV
- 161 kV
- 230 kV
- 345 kV
- Southwest Power Pool
- Entergy ICT

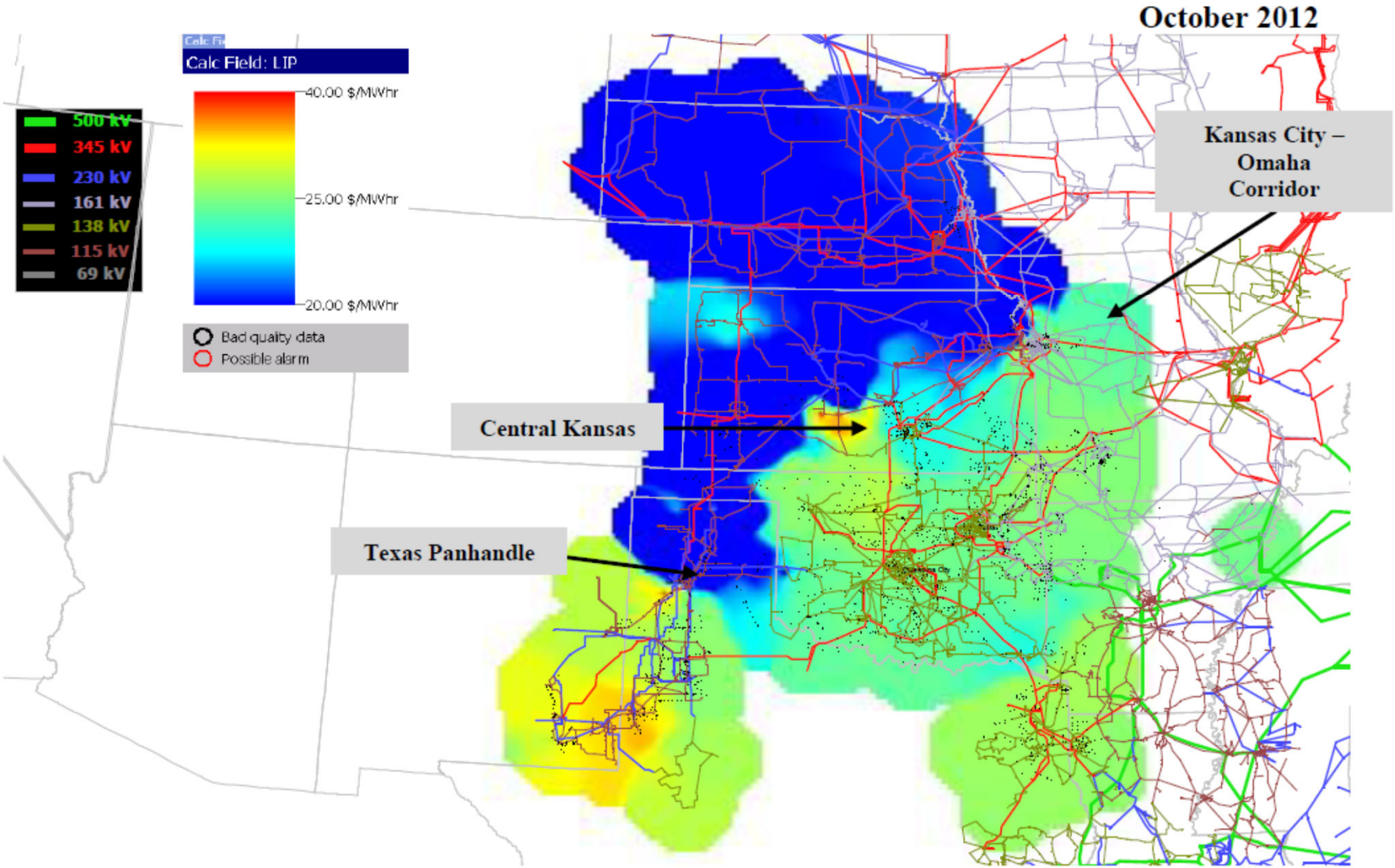
Map Created January 2012

Projects with Notifications to Construct

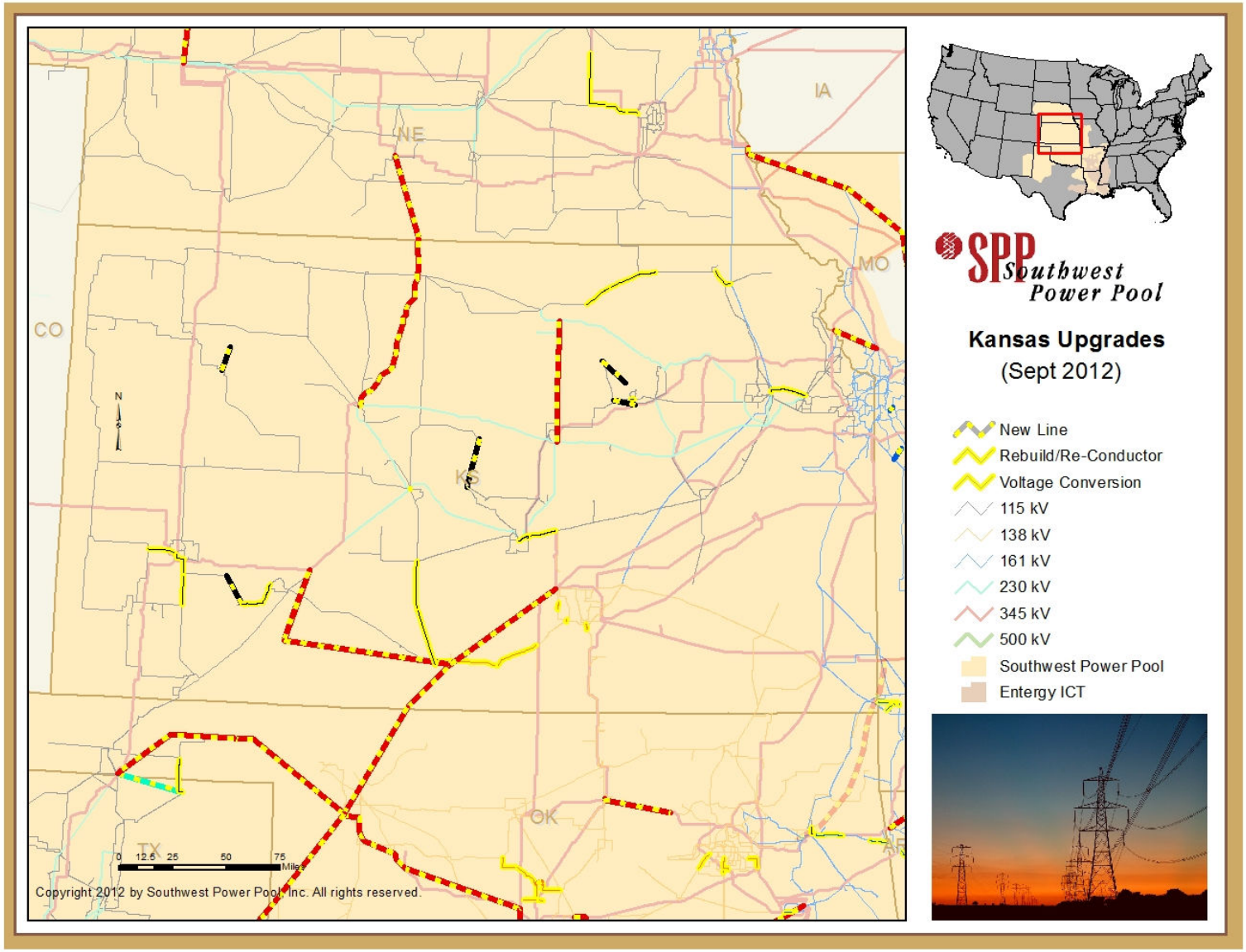


KANSAS SPECIFIC INFORMATION

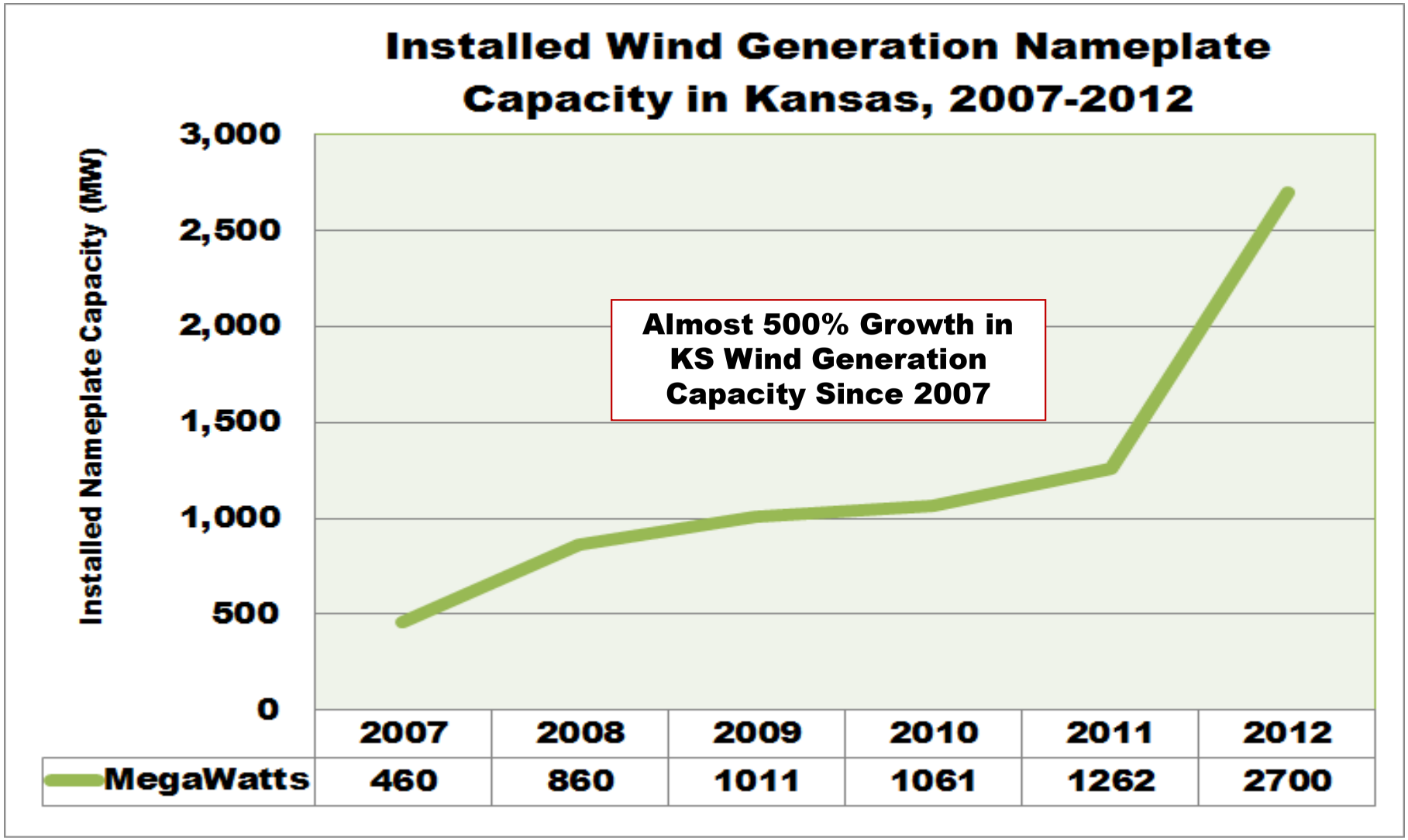
East – West Congestion in Kansas



SPP Directed New Transmission Development in KS

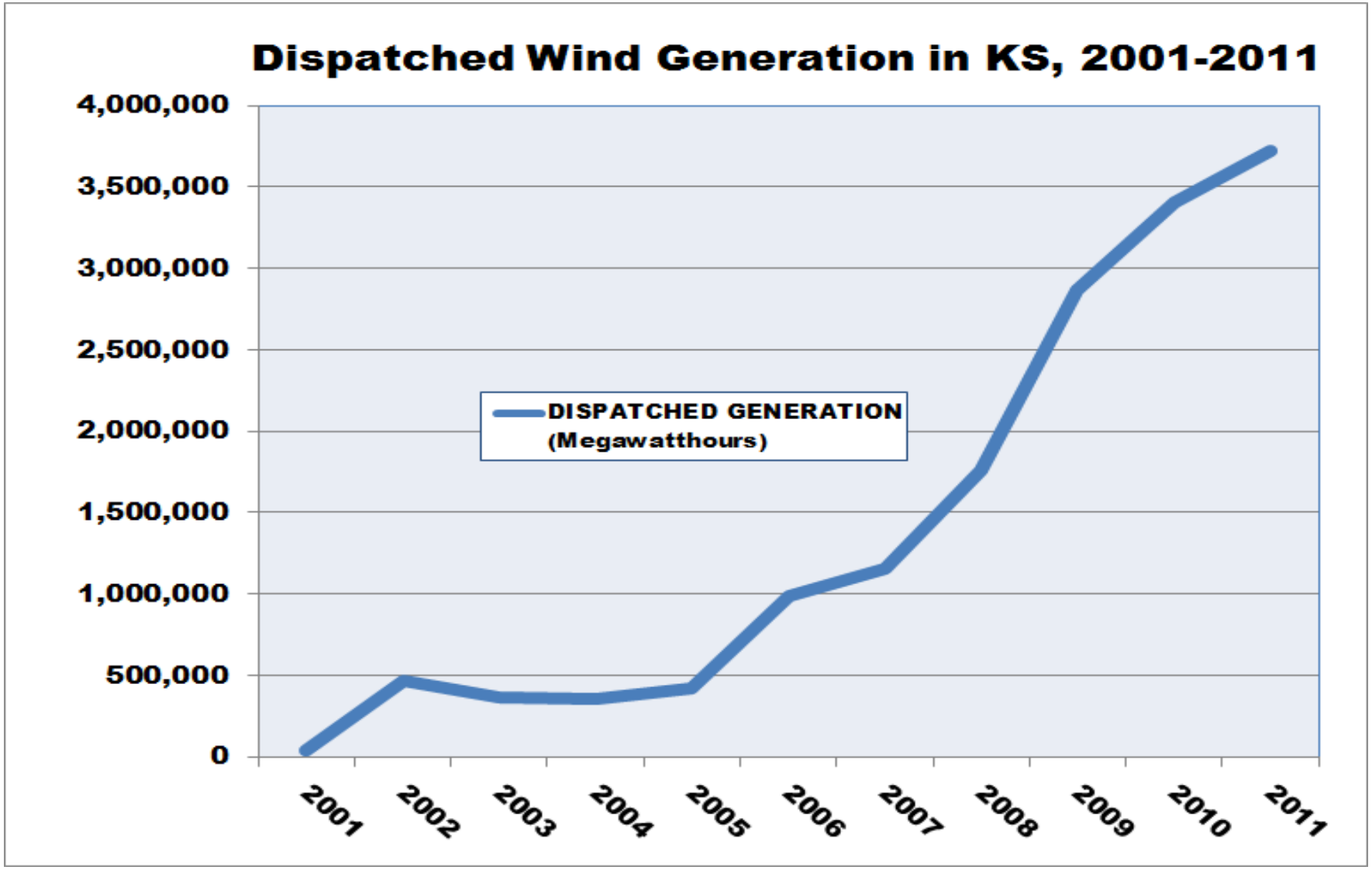


Kansas Wind Generation Capacity Growth



Source: SPP Generation Interconnection Department

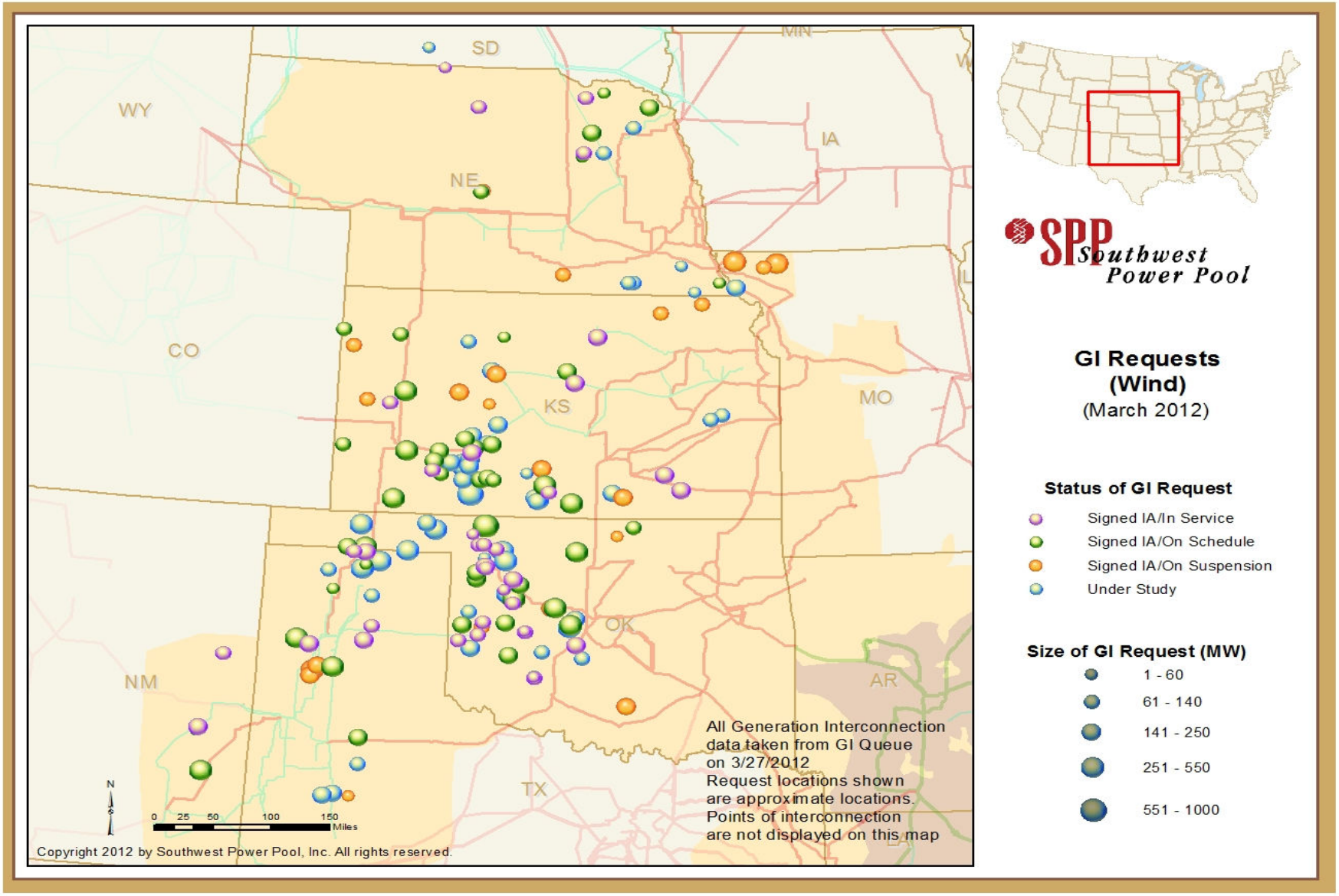
Dispatched Wind Generation in Kansas



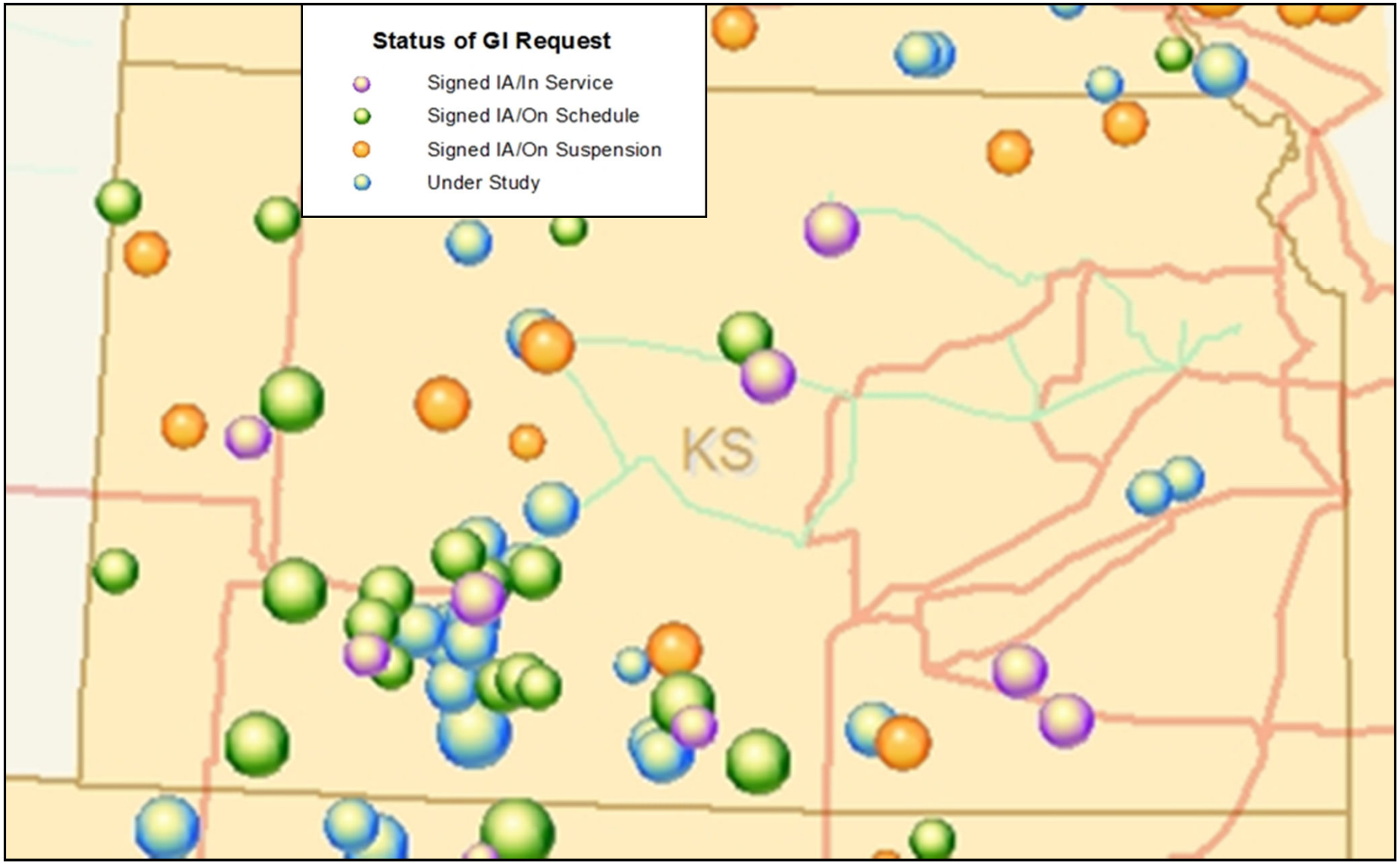
Source: U.S. Energy Information Agency,

http://www.eia.gov/electricity/data/state/annual_generation_state.xls

Generation Interconnection Requests



Generation Interconnection Requests - Kansas



Q&A

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