A nighttime photograph of a city skyline with several illuminated skyscrapers. The lights from the buildings are reflected in a body of water in the foreground. A bridge is visible on the left side of the frame.

Helping our members work together to keep the lights on...
today and in the future



SPP at a Glance

- Located in Little Rock
- Approximately 600 employees
- Primary jobs – electrical engineering, operations, settlements, and IT
- 24 x 7 operation
- Full redundancy and backup site





Regulatory Environment

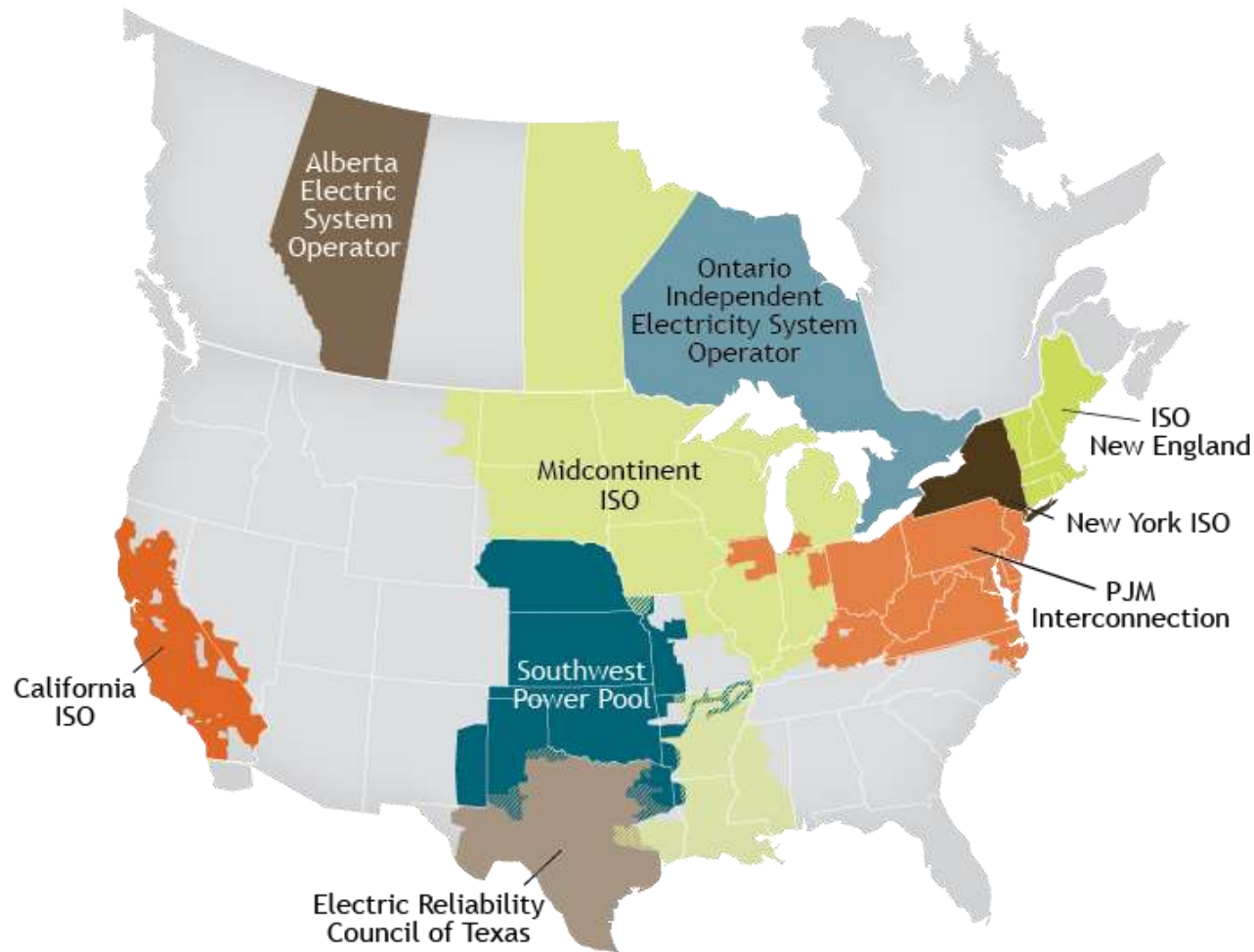


- Incorporated in Arkansas as 501(c)(6) non-profit corporation
- FERC - Federal Energy Regulatory Commission
 - Regulated public utility
 - Regional Transmission Organization
 - Must comply with applicable FERC Orders and SPP's approved transmission tariff
- NERC - North American Electric Reliability Corporation
 - Founding member
 - Regional Entity
 - Must comply with applicable NERC Reliability Standards

What is an RTO?

- **Regional Transmission Organizations (RTOs) are independent, non-profit organizations that ensure transmission grid reliability, provide non-discriminatory access to the transmission system, and optimize supply and demand bids for wholesale electric power**
- **Minimum characteristics and functions of an RTO are specified in FERC's Order 2000**
- **Participation by electric utilities in RTO encouraged by FERC but not mandated**
- **Services provided in accordance with a FERC approved transmission tariff**
- **Reliability functions performed in accordance with mandatory FERC approved reliability standards**

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



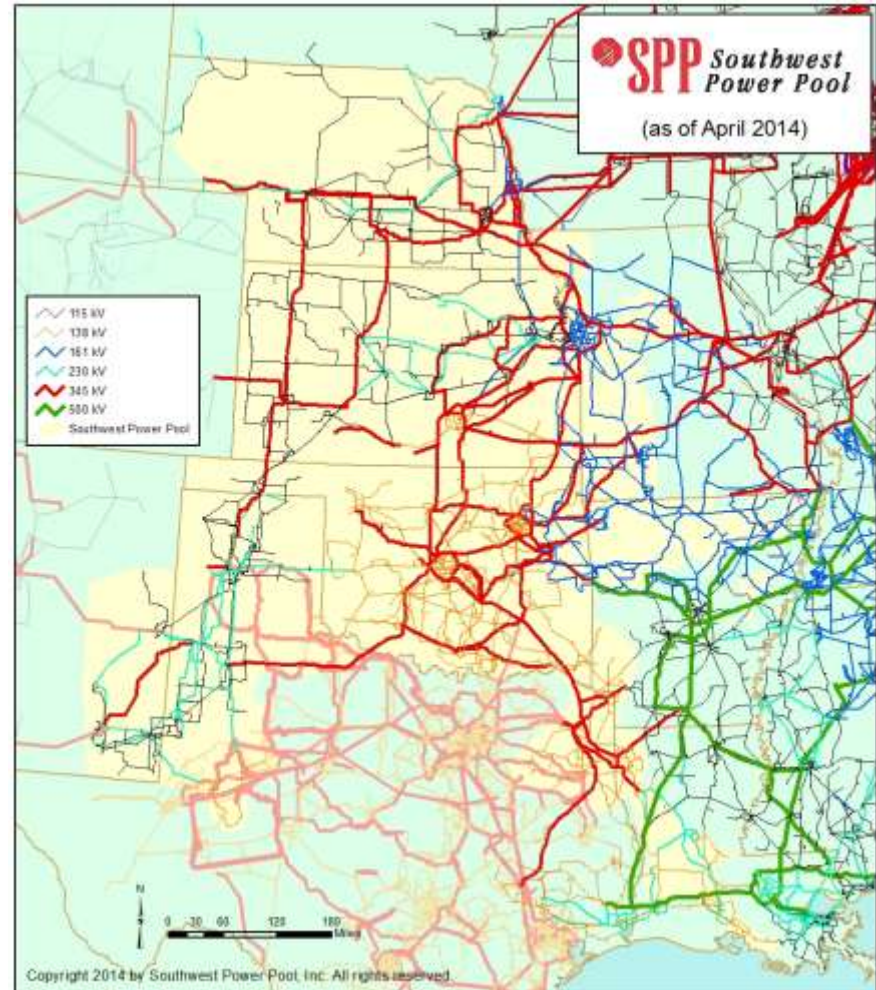
SPP's Membership Profile

Category	Number
Investor Owned Utilities	14
Cooperatives	13
Marketers	12
Municipals	11
Independent Power Producers/ Wholesale Generation	11
Independent Transmission Companies	10
State Agencies	5
TOTAL	76

As of April 11, 2014

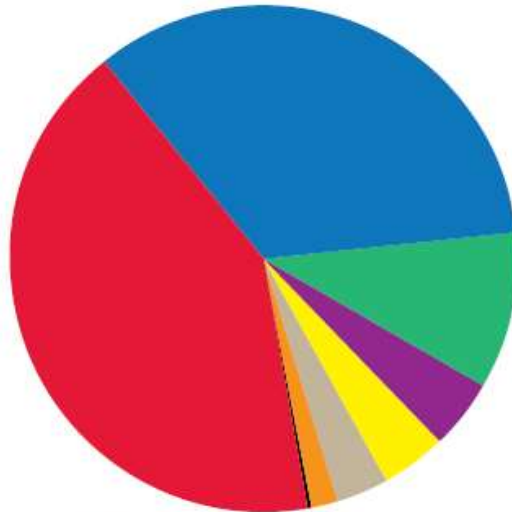
SPP's Current Operating Region

- 370,000 miles of service territory
- 627 generating plants
- 77,366 MW of generating capacity
- 46,136 MW of peak demand
- 4,103 substations
- 48,930 miles transmission:
 - 69 kV – 12,569 miles
 - 115 kV – 10,239 miles
 - 138 kV – 9,691 miles
 - 161 kV – 5,049 miles
 - 230 kV – 3,889 miles
 - 345 kV – 7,401 miles
 - 500 kV – 93 miles



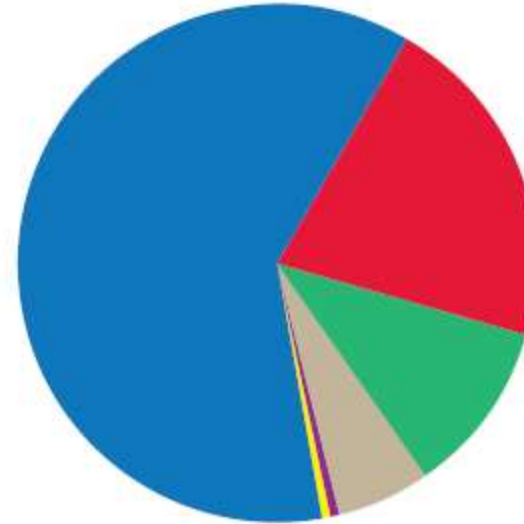
2013 Energy Consumption and Capacity

Capacity



Gas	42.04%
Coal	34.08%
Wind	10.01%
Hydro	4.55%
Dual Fuel	4.06%
Nuclear	3.34%
Fuel Oil	1.83%
Other	0.08%

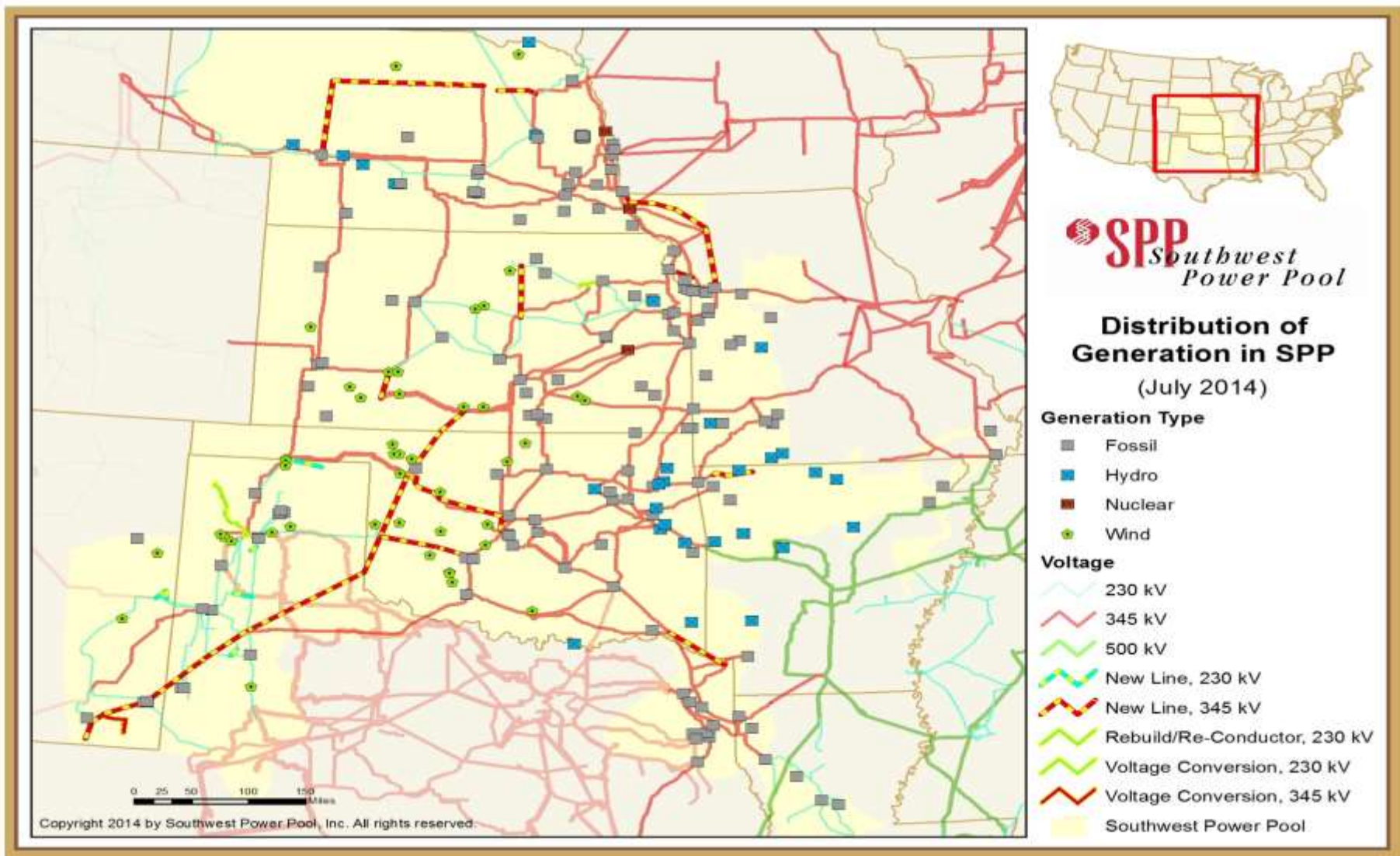
Consumption



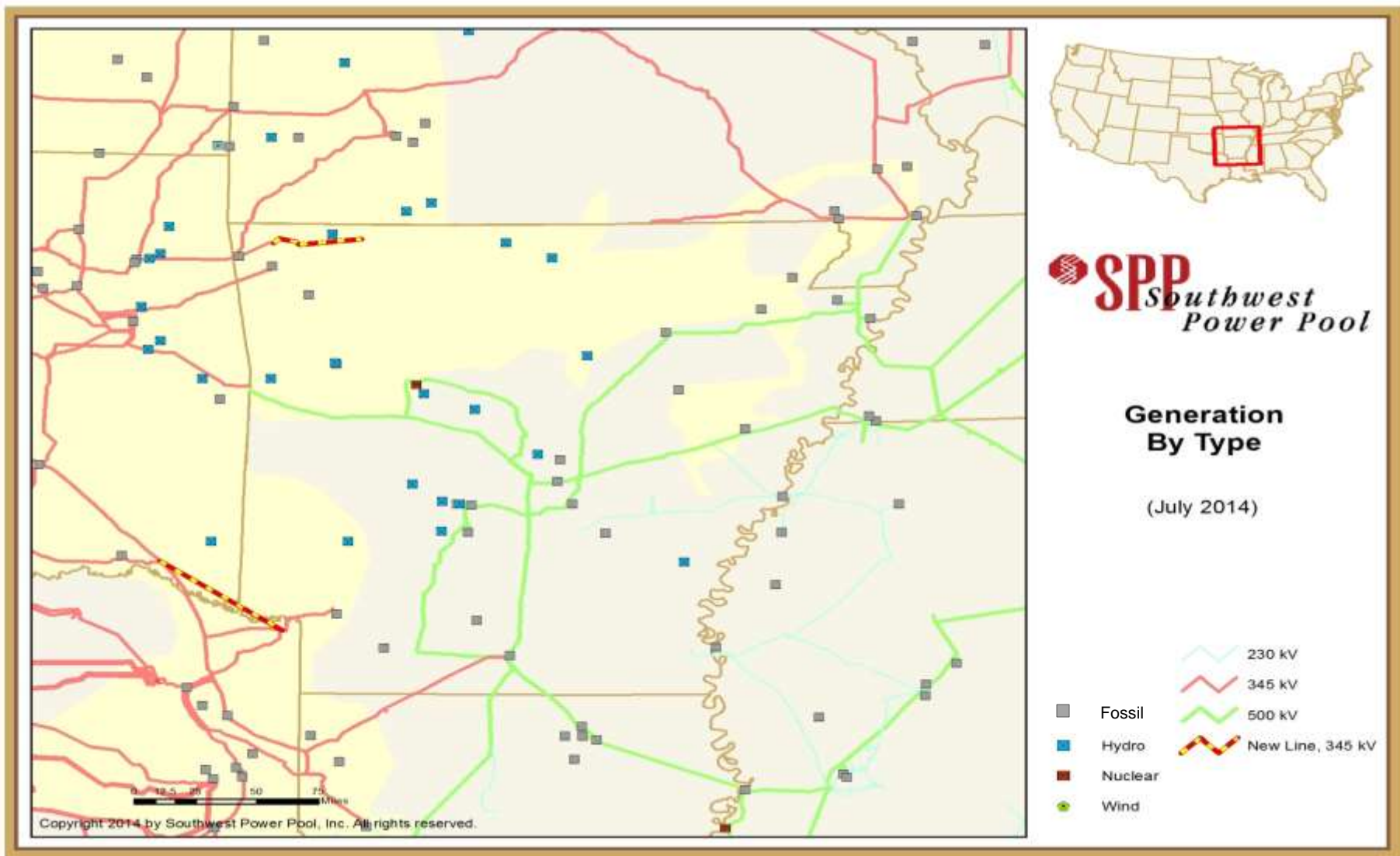
Coal	61.2%
Gas	21.2%
Wind	10.8%
Nuclear	6.0%
Hydro	0.6%
Diesel Fuel Oil (DFO)	0.3%

12% annual planning capacity requirement

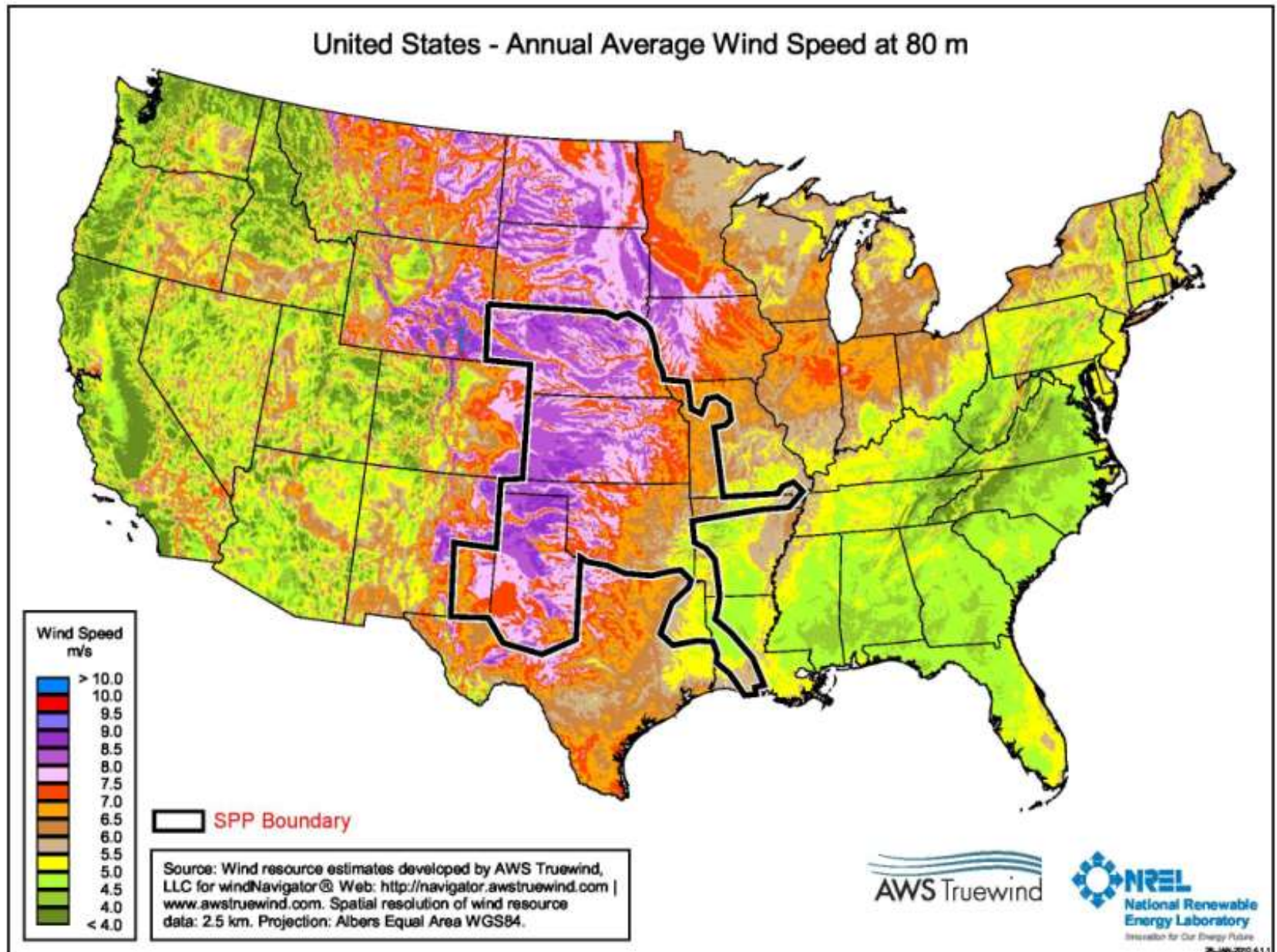
Generating Resources in SPP



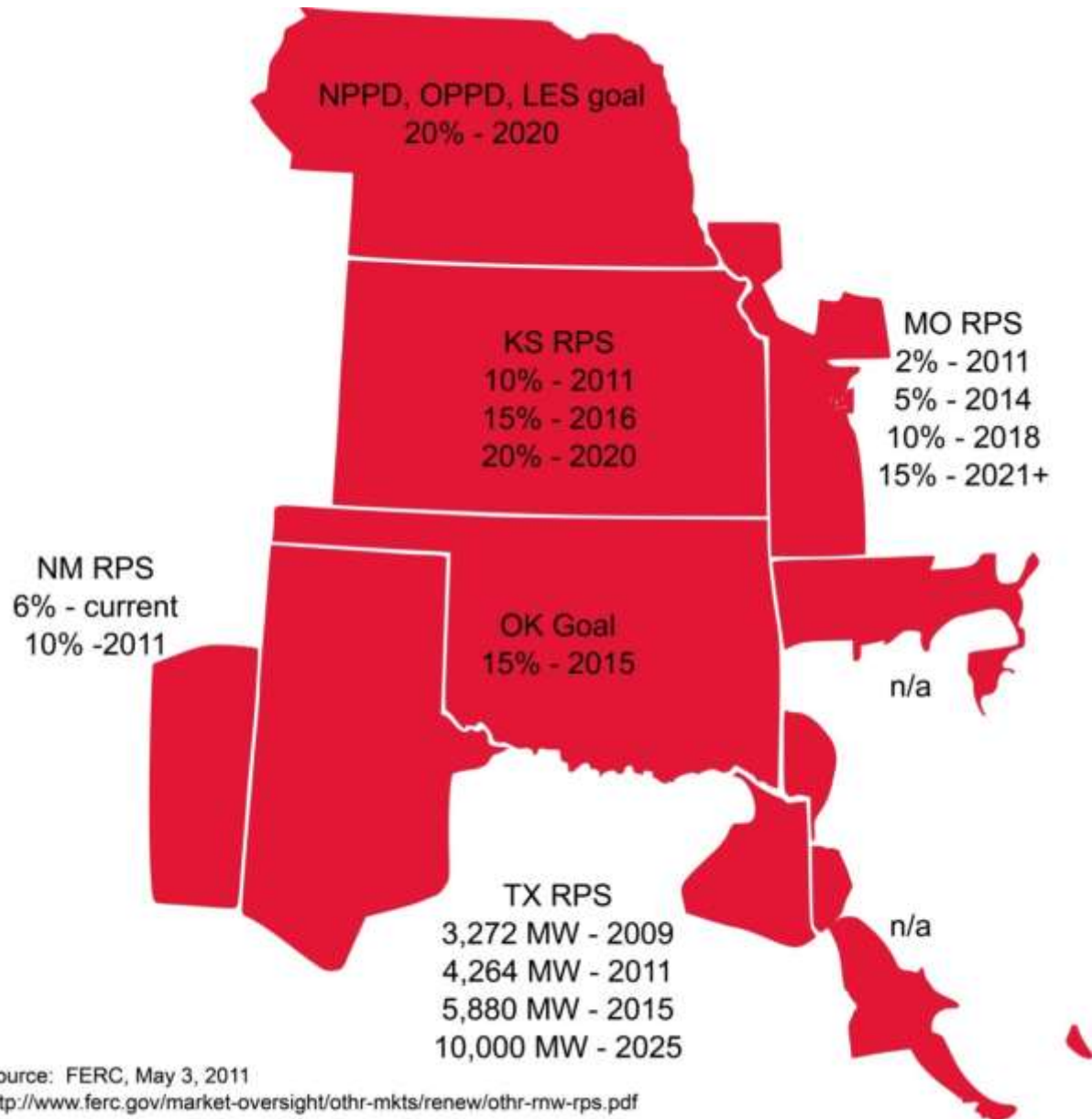
Generating Resources in Arkansas



Annual Average Wind Speed - 80 meters

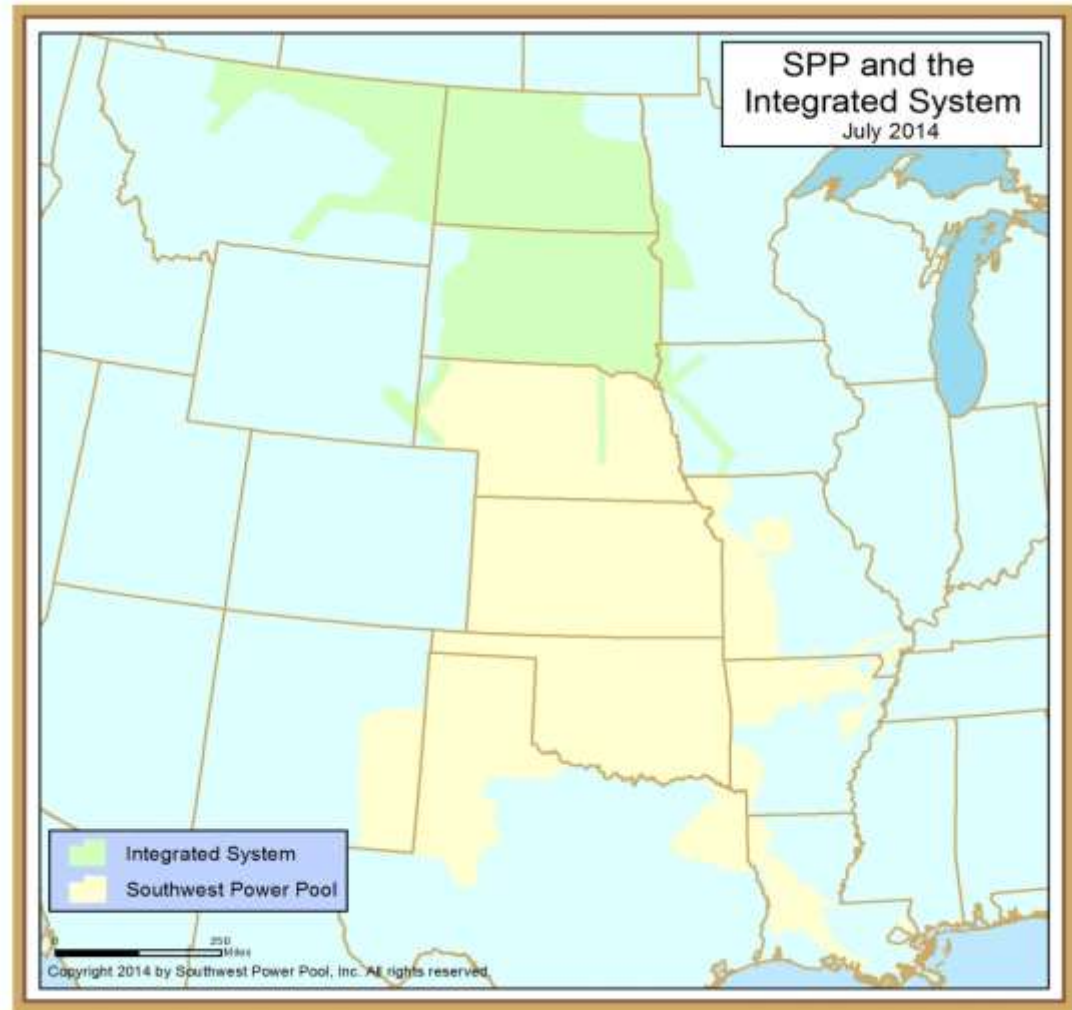


Renewable Portfolio Standards



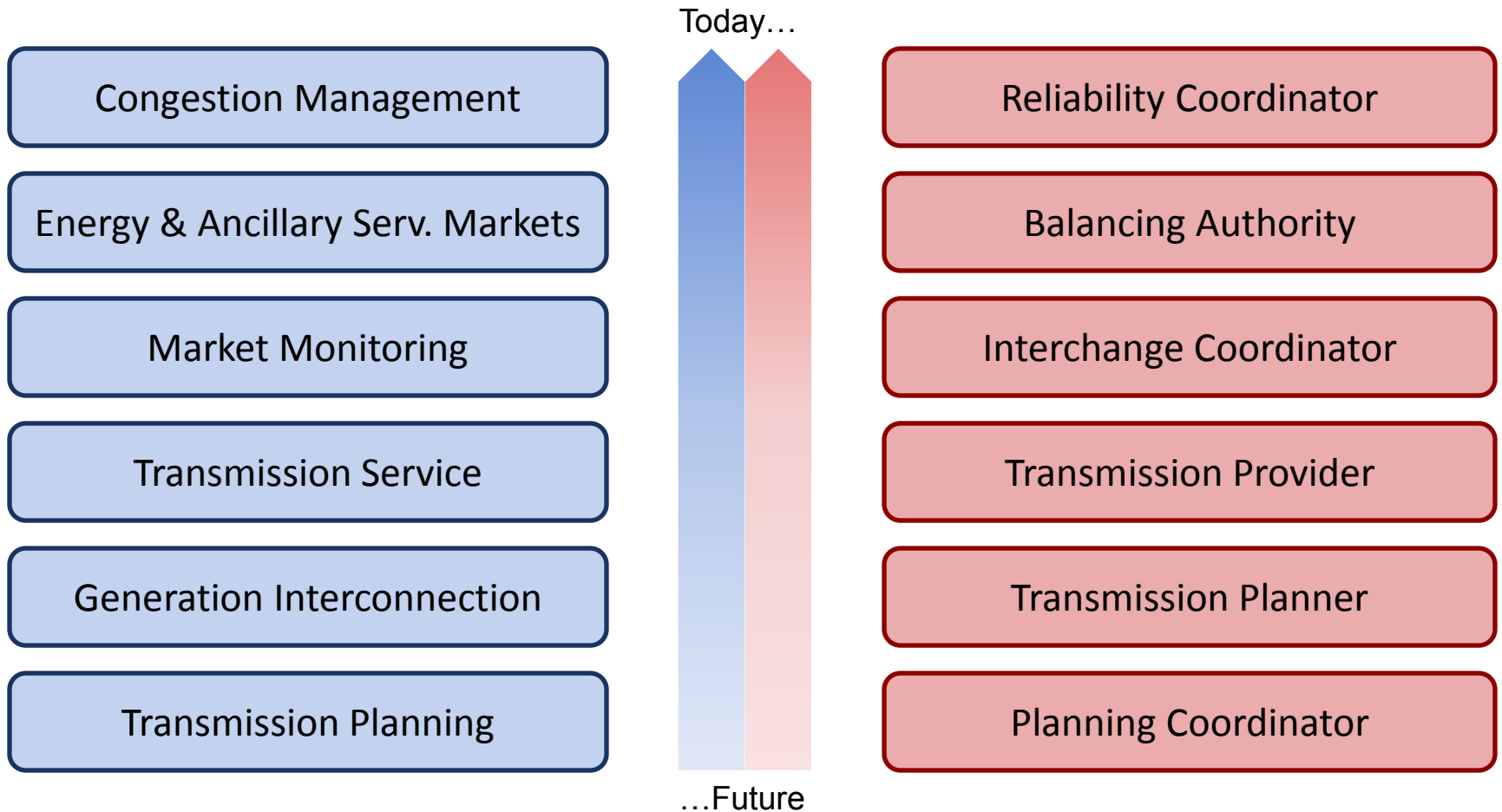
SPP's Future Expanded Operating Region

- Adding 3 new members in fall 2015: Western Area Power Administration, Basin Electric Cooperative, and Heartland Consumers Power District
- Adds approximately 5-6,000 MW of peak demand
- Adds about a 50% increase in SPP's current hydro capacity



FUNCTIONS

SPP's Services and Reliability Functions



NERC Functional Definitions

Reliability Coordinator

Maintains the Real-time operating reliability of the Bulk Electric System within a Reliability Coordinator Area.

Balancing Authority

Integrates resource plans ahead of time, maintains generation-load-interchange balance within a Balancing Authority Area, and contributes to Interconnection frequency in real time.

Interchange Coordinator

Ensures communication of Arranged Interchange for reliability evaluation purposes and coordinates implementation of valid and balanced Confirmed Interchange between Balancing Authority Areas.

Transmission Provider

Administers the transmission tariff and provides transmission services to customers under applicable agreements.

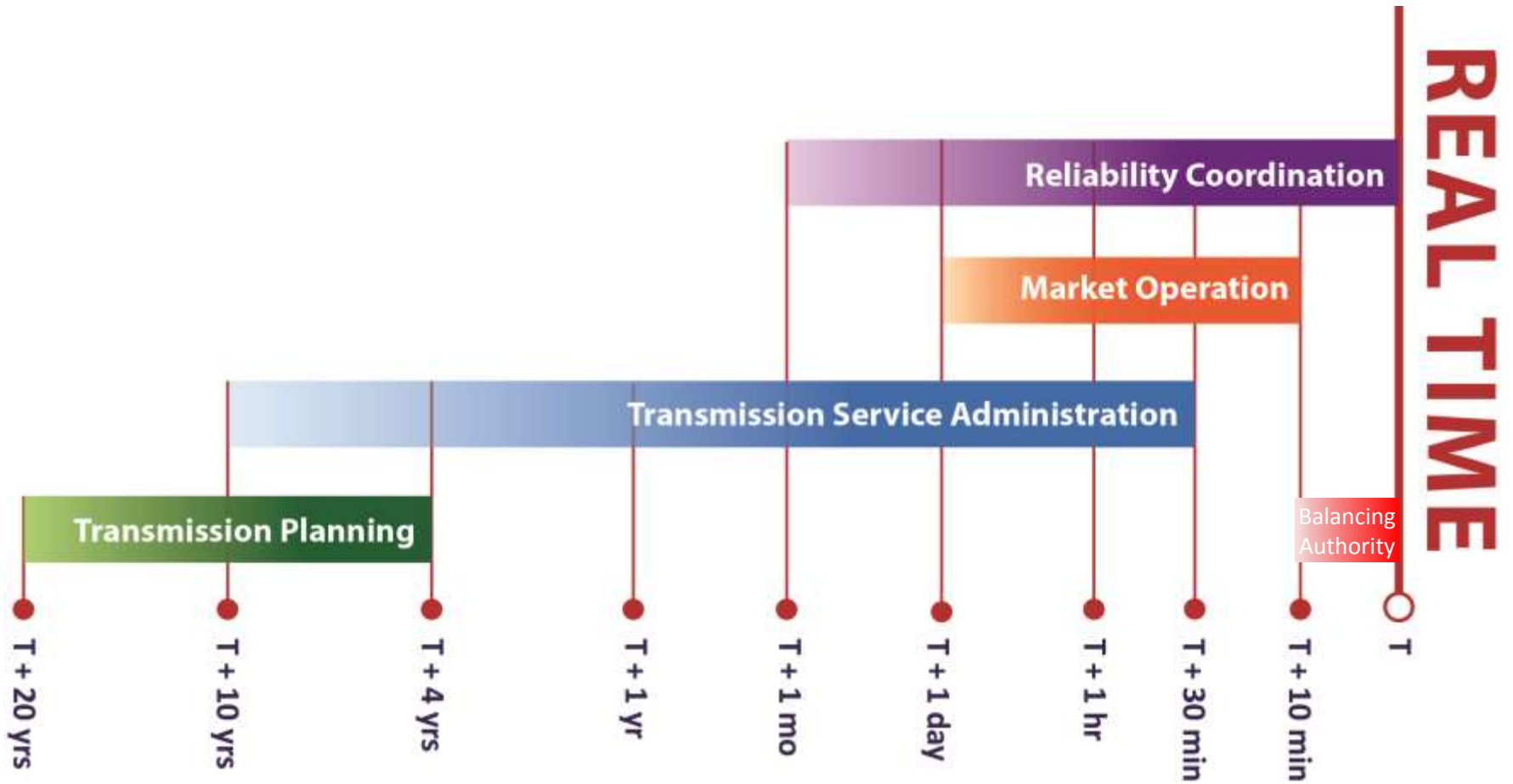
Transmission Planner

Develops a long-term (generally one year and beyond) plan for the reliability of the interconnected bulk electric transmission systems within a Transmission Planner area.

Planning Coordinator

Coordinates, facilitates, integrates and evaluates (generally one year and beyond) transmission and resource plans within a Planning Coordinator area and coordinates those plans with adjoining Planning Coordinator areas.

Timing of Our RTO Functions



TRANSMISSION PLANNING: BASIC CONCEPTS

SPP's Planning Role

- **Perform near and long-term reliability assessments of the transmission system in accordance with NERC TPL Standards**
- **Develop annual transmission expansion plans in accordance with Attachment O of the SPP Tariff**
- **Recommend transmission expansion plans and projects to the Board for approval**
- **Direct construction of Board approved projects (Notification to Construct)**



What role do state regulators play in SPP?

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

Arkansas

Nebraska

Oklahoma

Kansas

New Mexico

Texas

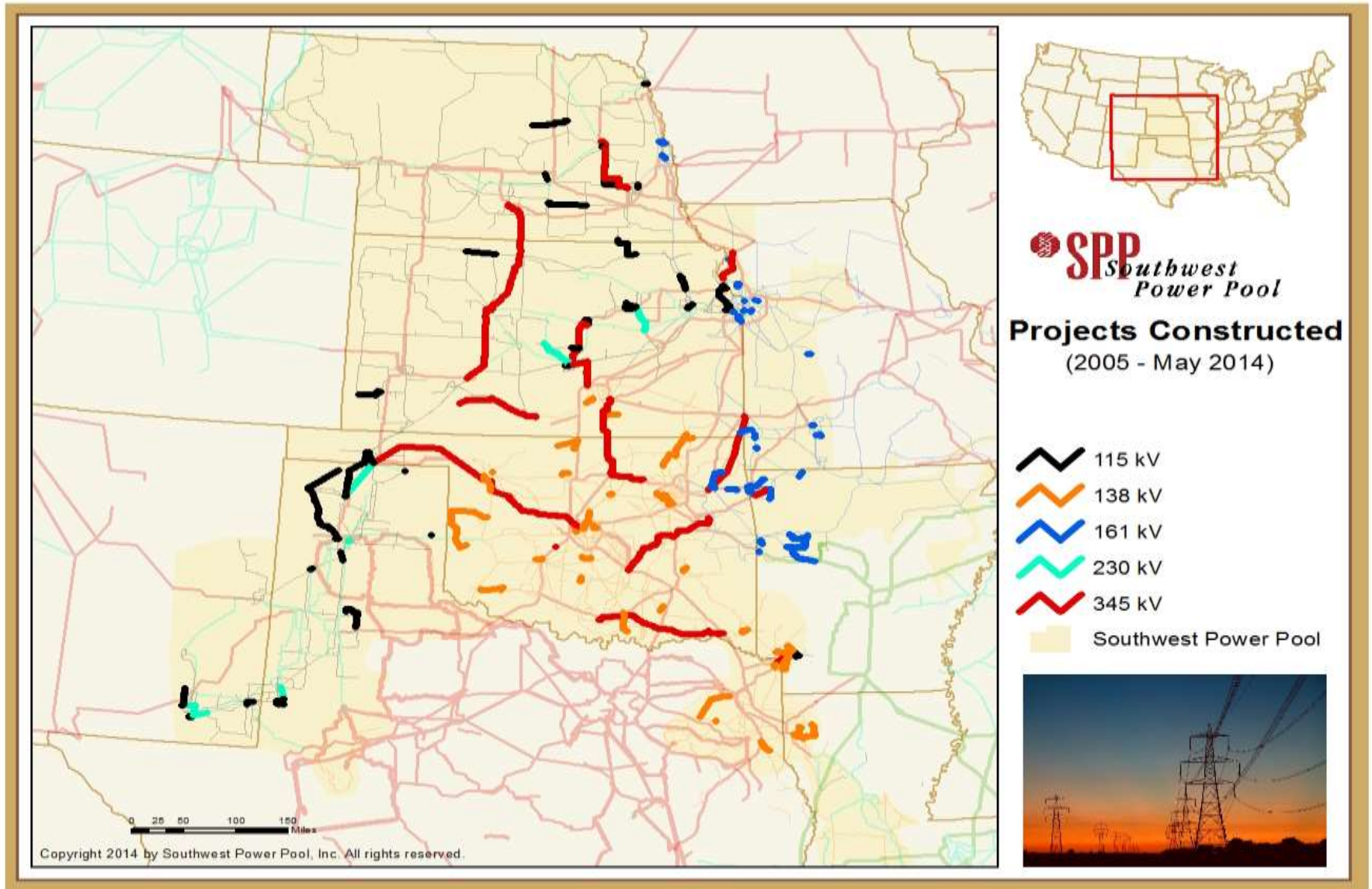
Missouri

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**



Projects Constructed 2005- May 2014



Transmission Construction Statistics

	SPP (All States)						SPP (Arkansas)					
	# of Upgrades by Voltage Class			Total Cost by Voltage Class			# of Upgrades by Voltage Class			Total Cost by Voltage Class		
Voltage Class	Reliability	Other	Total	Reliability	Other	Total	Reliability	Other	Total	Reliability	Other	Total
500	2	1	3	\$51,877,771	\$14,000,000	\$65,877,771	0	1	1	\$0	\$14,000,000	\$14,000,000
345	45	117	162	\$981,590,698	\$3,578,969,303	\$4,560,560,001	7	4	11	\$166,872,100	\$51,510,000	\$218,382,100
230	53	21	74	\$485,166,186	\$112,070,425	\$597,236,611	0	0	0	\$0	\$0	\$0
161	71	14	85	\$254,972,594	\$33,512,943	\$288,485,537	24	4	28	\$95,337,589	\$6,552,000	\$101,889,589
138	146	88	234	\$732,867,750	\$391,938,297	\$1,124,806,047	0	0	0	\$0	\$0	\$0
115	211	67	278	\$1,127,601,376	\$337,264,466	\$1,464,865,842	1	5	6	\$100,000	\$3,786,893	\$3,886,893
69	158	33	191	\$456,240,160	\$64,513,405	\$520,753,565	0	2	2	\$0	\$8,321,000	\$8,321,000
Totals	686	341	1027	\$4,090,316,535	\$4,532,268,839	\$8,622,585,374	32	16	48	\$262,309,689	\$84,169,893	\$346,479,582

Average Time to Complete Projects* (Years)	345 kV	100 - 300 kV
SPP	3.6	2.4
Arkansas	3.7	4

Longest Time to Complete Projects* (Years)	345 kV	100 - 300 kV
SPP	6.2	5.3
Arkansas	6.2	4.8

*Time to complete is measured from time Notification to Construct is issued, i.e., after project has been approved by SPP Board and completion of competitive bidding process to determine project constructor. It typically takes about one year to perform a planning study and another year to perform competitive bidding process.

MARKET OPERATIONS: BASIC CONCEPTS

Market Concepts – What is a Market? (cont'd.)

Wholesale Energy Market:

Sellers/ Producers	Buyers/ Consumers	Locational Prices	Products
<ul style="list-style-type: none">• Utilities• Municipals• Independent Power Producers• Generators• Power Marketers	<ul style="list-style-type: none">• Utilities• Municipals• Load Serving Entities (LSEs)• Power Marketers	<ul style="list-style-type: none">• Driven by Supply and Demand at defined locations	<ul style="list-style-type: none">• Energy• Operating Reserves• Congestion Rights

How SPP's Energy Market Works

- SPP receives operational pricing information from participating suppliers of energy
- SPP forecasts how much demand it will have in the upcoming dispatch intervals
- SPP determines how much energy it needs to meet the demand and dispatches the least cost supplies while respecting operating constraints
- Utilizes Security-Constrained Economic Dispatch algorithm
- SPP has the responsibility and ability to dispatch out of economic order for reliability reasons

What is congestion?

- Congestion or “bottlenecks” happen when you can’t get energy to customers along a certain path
 - Desired electricity flows exceed physical capability
- Congestion caused by:
 - Lack of transmission, often due to load growth
 - Line and generator maintenance outages
 - Unplanned outages such as storms or trees on lines
 - Too much generation pushed to grid in a particular location
 - Preferred energy source located far from customers
- Results in inability to use least-cost electricity to meet demand

Congestion prevents access to lower-cost generation

