Approved: March 9, 2011
Date

MINUTES OF THE SENATE UTILITIES COMMITTEE

The meeting was called to order by Chairman Pat Apple at 1:30 p.m. on March 3, 2011, in Room 548-S of the State Capitol.

All members were present except:
Senator Emler, excused
Senator Love, excused

Committee staff present:
Mary Torrence, Office of the Revisor of Statutes
Cindy Lash, Kansas Legislative Research Department
Heather O'Hara, Kansas Legislative Research Department
Ann McMorris, Committee Assistant

Conferees appearing before the Committee:
Heather Starnes, Southwest Power Pool

Others attending: See attached list.

Approval of Minutes
Moved by Senator Taddiken, seconded by Senator Petersen, to approve the minutes of the meetings of the Senate Utilities Committee held on February 16 and 17, 2011. Motion carried.

Presentation for Southwest Power Pool
Heather Starnes, Manager, Regulatory Policy, Southwest Power Pool, presented a power point program in which she gave the background of the SPP, the current status of membership and their future strategic plans. SPP will build a robust transmission system, develop efficient market processes and create member value. (Attachment 1)

-

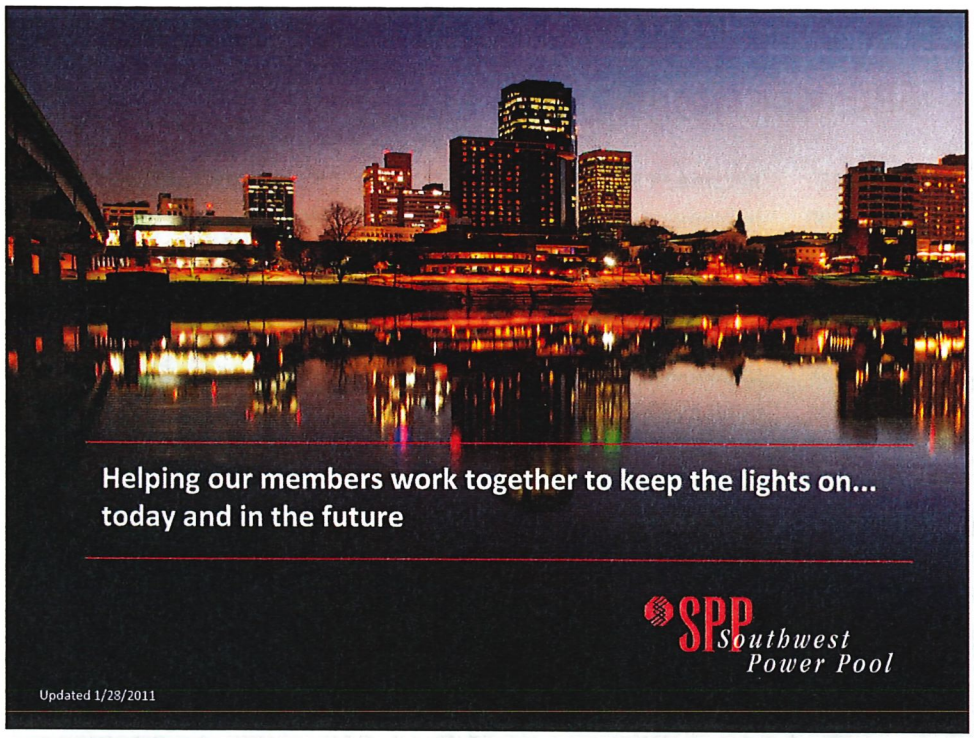
The meeting was adjourned at 2:25 p.m.

Respectfully submitted,
Ann McMorris, Committee Assistant

Attachments - 1

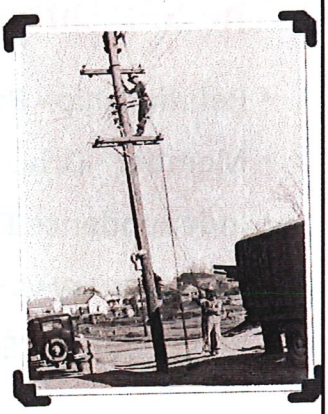
SENATE UTILITIES
COMMITTEE GUEST LIST
MARCH 3, 2011

NAME	REPRESENTING
Tom Day	KCC
George Stafford	Clean Line
Heath Klein	Klein Law Firm



Our Beginning

- Founded 1941 with 11 members
  - Utilities pooled electricity to power Arkansas aluminum plant needed for critical defense
- Maintained after WWII to continue benefits of regional coordination



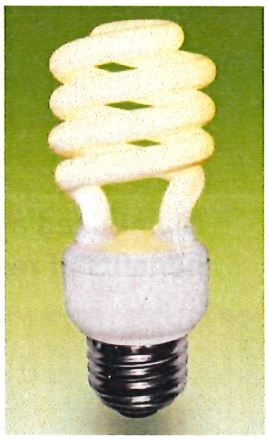
Senate Utilities Committee
March 3, 2011
Attachment 1 -1

SPP Milestones

1968	Became NERC Regional Council
1980	Implemented telecommunications network
1991	Implemented operating reserve sharing
1994	Incorporated as non-profit
1997	Implemented reliability coordination
1998	Implemented tariff administration
2001	Implemented regional scheduling
2004	Became FERC-approved Regional Transmission Organization
2006	Implemented contract services
2007	Launched EIS market, became NERC Regional Entity
2009	Integrated Nebraska utilities
2010	FERC approved Highway/Byway cost allocation methodology and Integrated Transmission Planning Process

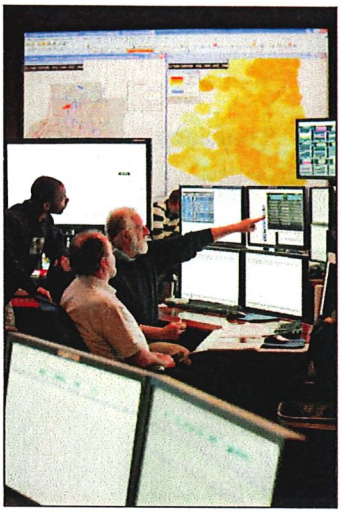
The SPP Difference

- Relationship - Based
- Member - Driven
- Independence Through Diversity
- Evolutionary vs. Revolutionary
- Reliability and Economics Inseparable

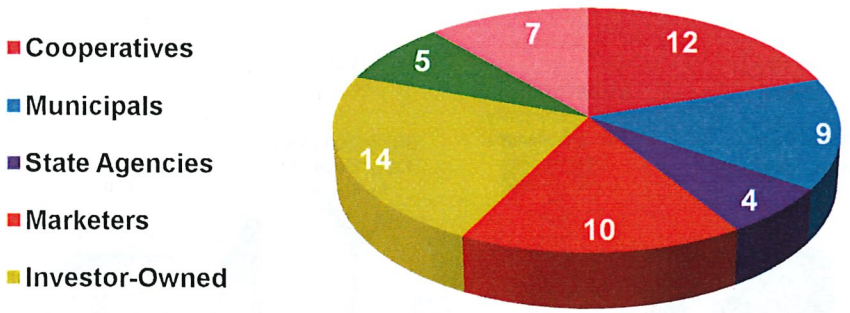


SPP at a Glance

- Located in Little Rock
- ~475 employees
- $139 million operating budget (2011)
- 24 x 7 operation
- Full redundancy and backup site



61 SPP Members

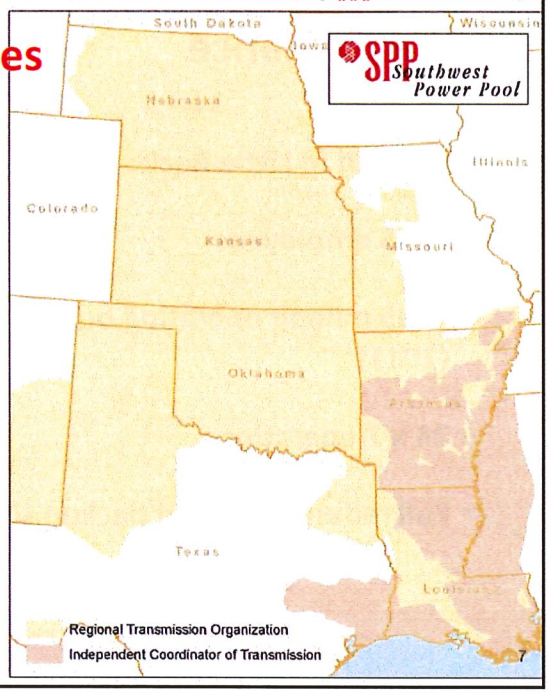


1-3

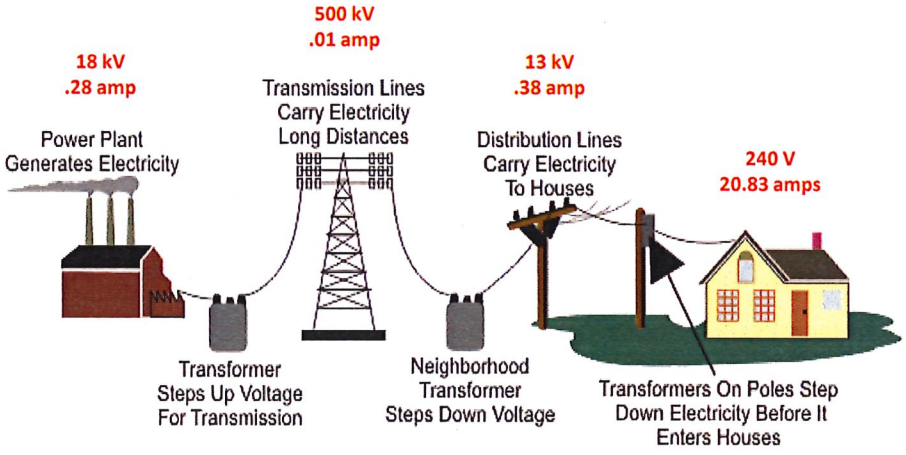
Members in 9 states

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

Provide services to Entergy on contract basis (ICT)



Delivering 5 kilowatts electricity



http://www.eia.doe.gov/basics/electricity_basics.html

SPP | 8

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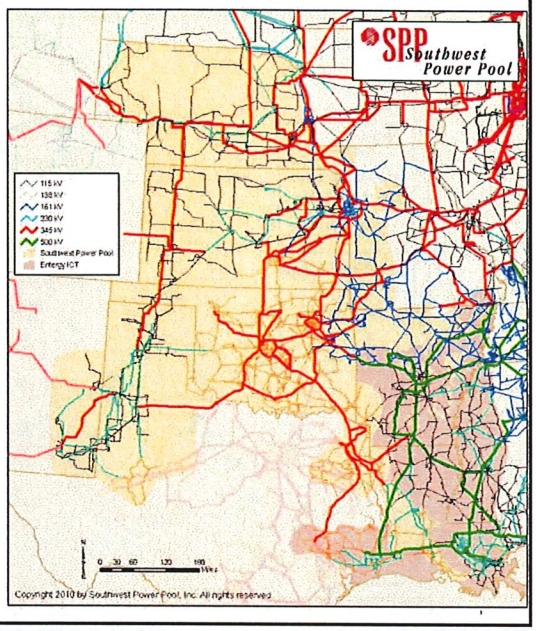
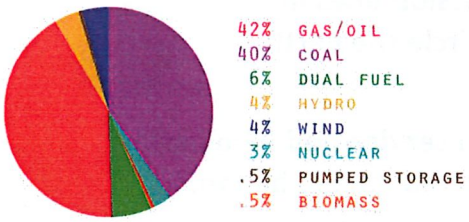
Operating Region 2010

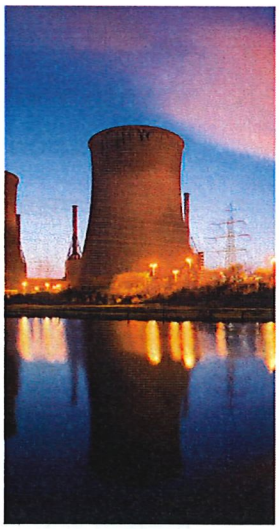
- 370,000 square miles service territory
- 859 generating plants
- 6,101 substations
- 48,930 miles transmission:
  - 69 kV – 12,722 miles
  - 115 kV – 10,143 miles
  - 138 kV – 10,009 miles
  - 161 kV – 5,097 miles
  - 230 kV – 3,787 miles
  - 345 kV – 7,079 miles
  - 500 kV – 93 miles



Operating Region 2010

- 53,012 MW peak demand
- 223,080 GWh energy consumption
- 1,500 MW wholesale demand response
- 419 MW retail demand response
- 66,175 megawatts generating capacity:





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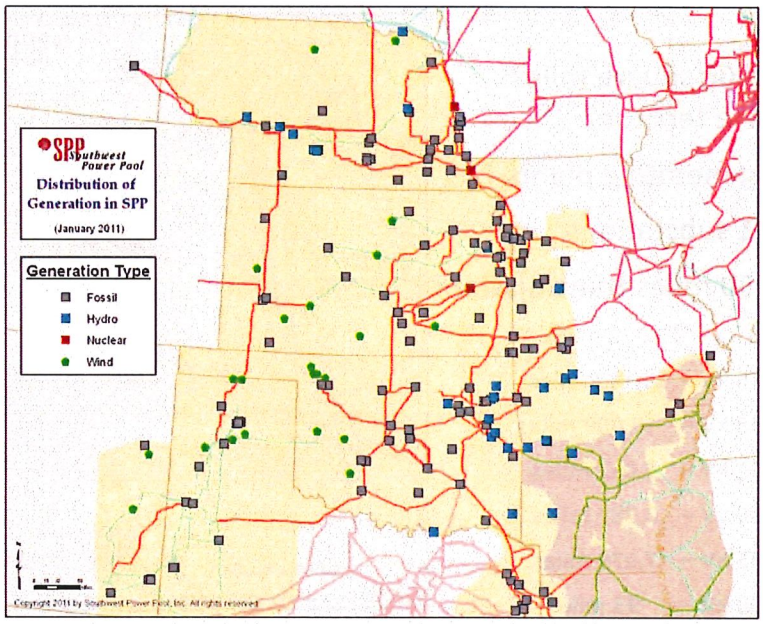
Generating Resources



SPP | 11

Did You Know?

- SPP's members serve over 6.2 million households.
- In 2010, SPP members completed 78 transmission projects totaling $468 million.

- SPP's transmission owners collect ~$800 million annually to recoup costs of transmission, and have over $4.7 billion in net transmission investment.
- 48,930 miles of transmission lines in SPP's footprint would circle the earth - almost twice!

- SPP's 2010 transmission service and wholesale market transactions totaled ~$1.98 billion.

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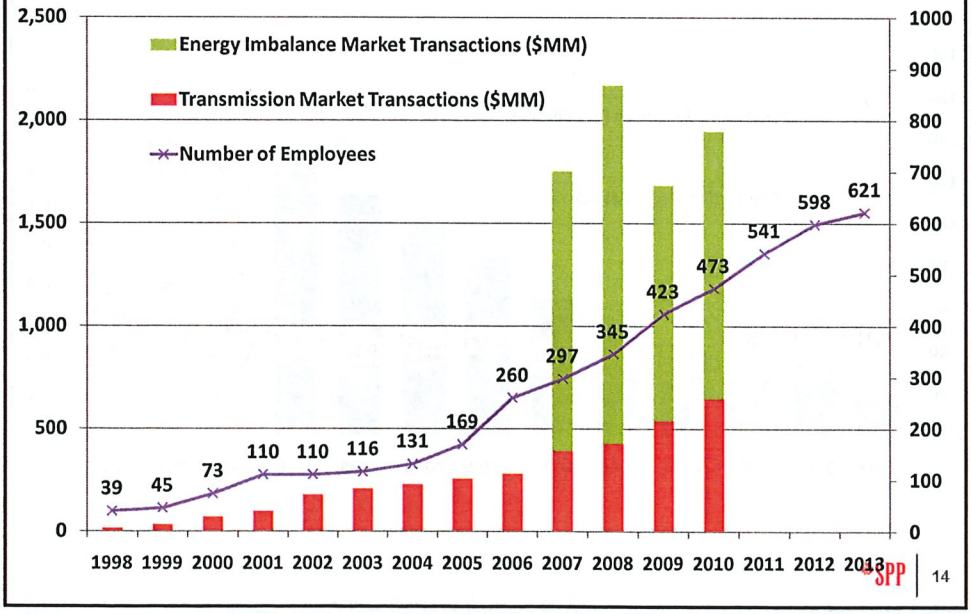
1-6

IT Facts

- ~65,000 data points updated every 10-30 seconds
- Operations model solves 20,000 x 20,000 matrix every 2 minutes
- 614 servers
- 496 Terabytes of data storage
- Fully redundant networks with 100% availability
- Operate two data centers

Growth in Responsibilities



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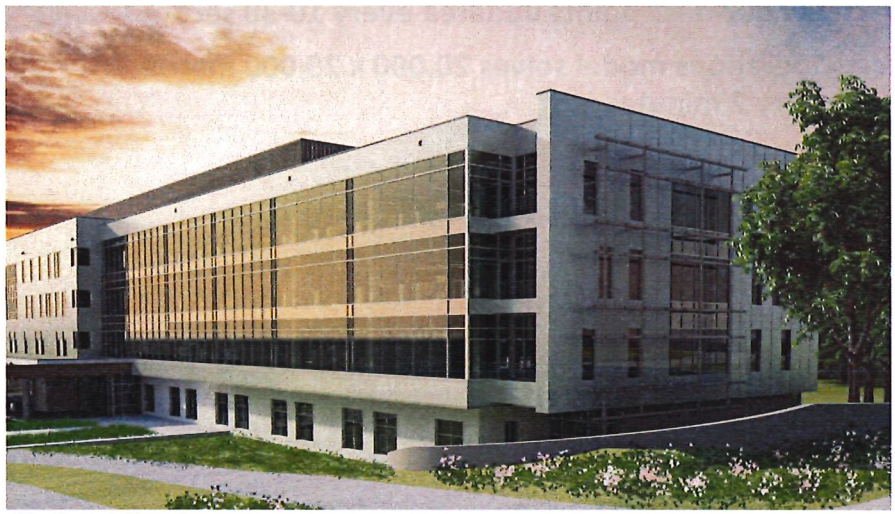
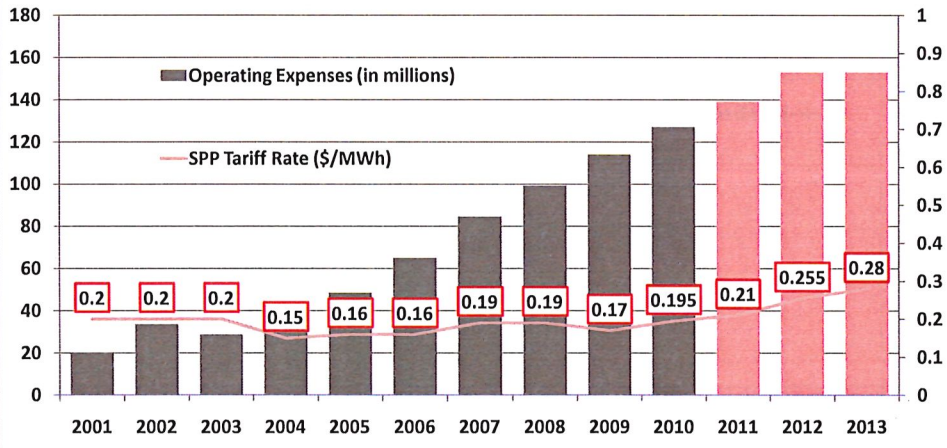
1-7

SPP's New Facility Now Under Construction



Northwest Elevation

SPP Expenses: 2001-2013



1-8

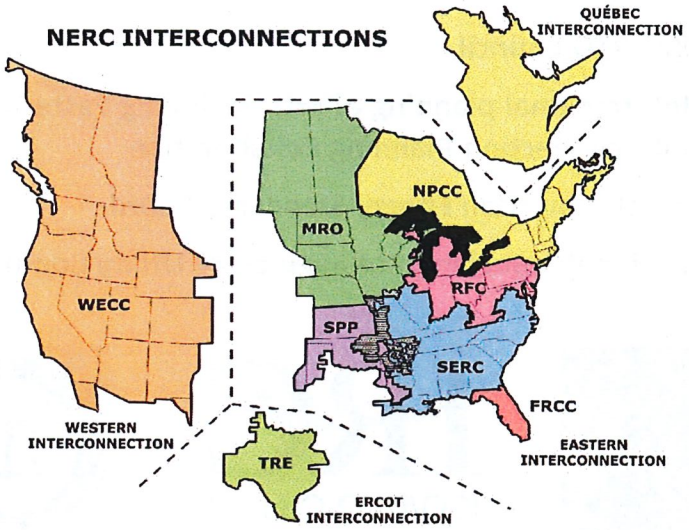
Regulatory Environment

- Incorporated in Arkansas as 501(c)(6) non-profit corporation
- FERC - Federal Energy Regulatory Commission
  - Regulated public utility
  - Regional Transmission Organization
- NERC - North American Electric Reliability Corporation
  - Founding member
  - Regional Entity

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

SPP | 17

3 Electric Interconnections / 8 NERC Regions



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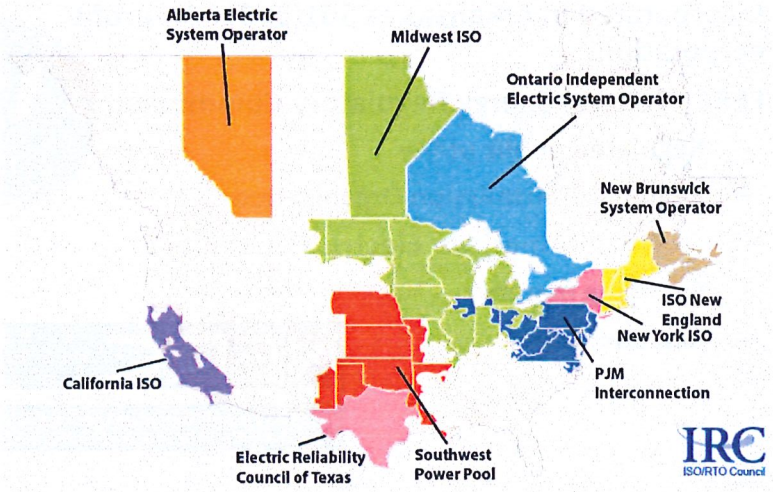
Independent System Operator (ISO) / Regional Transmission Organization (RTO) Map



Interregional Coordination

- ISO-RTO Council
- Interregional planning efforts, including Eastern Interconnection Planning Collaborative
- North American Energy Standards Board
- National Association of Regulatory Utility Commissioners

NAESB

IRC ISO/RTO Council

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS DEDICATED TO PUBLIC SERVICE 1889

1-10

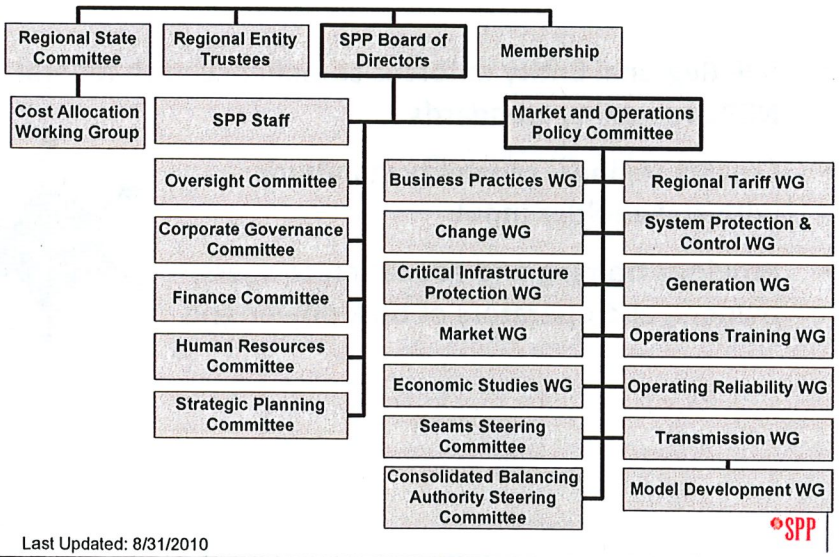
Our Major Services

- Facilitation
- Reliability Coordination
- Tariff Administration
- Market Operation
- Standards Setting
- Compliance Enforcement
- Transmission Planning

Regional
Independent
Cost-effective
Focus on reliability

Facilitation: Helping our members work together

Group Organizational Chart



Last Updated: 8/31/2010

1-11

Reliability Coordination

- Monitor grid 24 x 365
- Anticipate problems
- Take preemptive action
- Coordinate regional response
- Independent

As "air traffic controllers," our operators comply with...

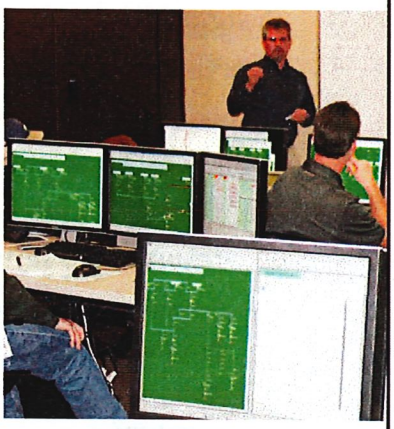
...over 1,300 pages of reliability standards and criteria

Compliance Enforcement and Standards Setting

- SPP Regional Entity enforces compliance with federal NERC reliability standards
- Creates regional reliability standards with stakeholder input
- Provides training and education to users, owners, and operators of bulk power grid

Training

- 2010 Training program awarded over 21,000 continuing education hours to 410 operators from 25 member companies
- SPP offers:
  - Regional/sub-regional restoration drills
  - System operations conferences
  - Regional emergency operations sessions
  - Train-the-Trainer classes



MARKETS

1-13

What kind of markets does SPP have now?

- **Transmission Service**: Participants buy and sell use of regional transmission lines that are owned by different parties
- **Energy Imbalance Service (EIS)**: Participants buy and sell wholesale electricity in real-time
  - Market uses least expensive energy from regional resources to serve demand (load) first
  - Sometimes it's less expensive for a participant to purchase power from another provider than to generate
  - SPP monitors resource/load balance to ensure system reliability

Transmission Service

- Provides "one-stop shopping" for use of regional transmission lines
- Consistent rates, terms, conditions for all users
- Independent
- Process ~9,200 transactions/month
- 2010 transmission service transactions = $698 million

As "Sales agents," we administer …

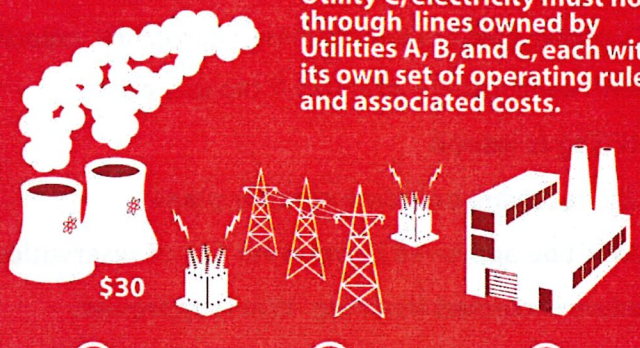
…2,100+ page transmission tariff on behalf of members and customers

1-14

Transmission Service

Without SPP

To get from a generator in Utility A to a customer in Utility C, electricity must flow through lines owned by Utilities A, B, and C, each with its own set of operating rules and associated costs.



$15 transmission service + $30 energy = $45

Transmission Service

With SPP

SPP moves electricity across Utilities A, B, and C in one transaction for a single service fee, then shares revenues with each party.

$5 transmission service + $30 energy = $35

1-15

How transmission service works

- Reserving transmission service
  - Like buying e-ticket to reserve seat on plane
  - Customer specifies priority, time, source/sink, capacity
  - Tariff administrator approves if capacity exists
- NERC Tag is issued
  - Like receiving boarding pass for plane
  - Won't be approved if improper use of reservation
- Schedule is created from Tag. When approved:
  - Like sitting on the plane
  - Generators ramp to provide energy for transaction
  - May be curtailed if transmission system overloaded

Market Operation

- Monitors supply/demand balance
- Ensures economic dispatch of generation while maintaining reliability
- Provides settlement data
- 32 participants
- 405 generation resources
- 2010 wholesale market transactions = $1.28 billion

SPP's energy market is like the "NYSE"...

...and follows over 200 pages of market protocols

1-16

Benefits of current real-time energy market

A utility has three ways to serve its customers: generate its own power, buy power from another provider, or buy from the SPP market. The EIS market allows participants to compare real-time prices from many sources to make the most cost-effective decisions. Sometimes a participant can buy power for less than it would cost to generate its own energy.

Why develop new markets?

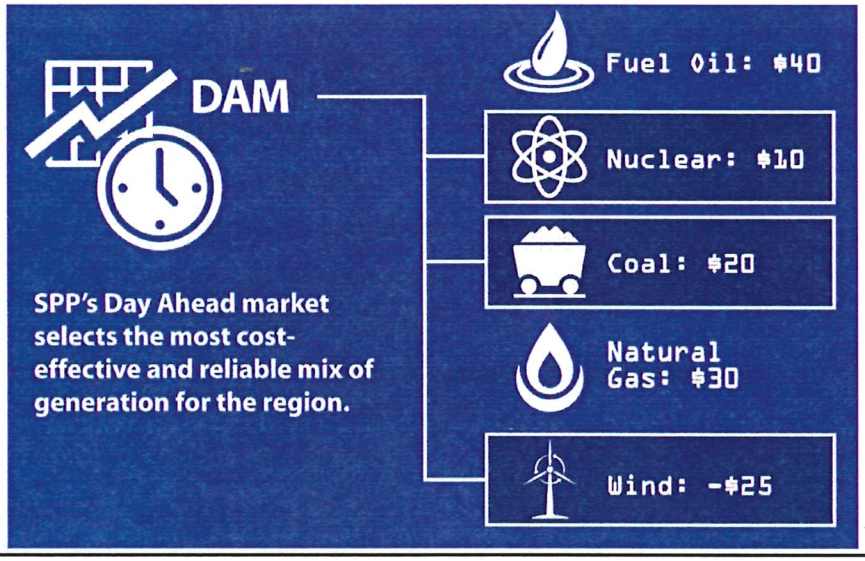
- SPP conducts complex cost-benefit studies before beginning new market development
  - Under Regional State Committee oversight
  - 2005 Charles River Associates analysis of EIS market:
    - Estimated benefit of $86 million for first year
    - Actual benefit of $103 million for first year
- Integrated Marketplace will bring estimated average additional net benefits of $100 million
  - According to 2009 Ventyx analysis

What type of new markets is SPP implementing?

- Integrated Marketplace will:
  - Provide participants with greater access to reserve energy
  - Improve regional balancing of supply and demand
  - Facilitate integration of renewable resources
- Includes:
  - Day Ahead: SPP determines what generating units should run the next day for maximum cost-effectiveness
  - Operating Reserves: Market to buy and sell reserve energy that
    - Meets emergency needs
    - Regulates instantaneous load and generation changes
    - Maintains electricity quality (keeping voltage up, etc.)

SPP | 35

Day Ahead market makes regional generation choices



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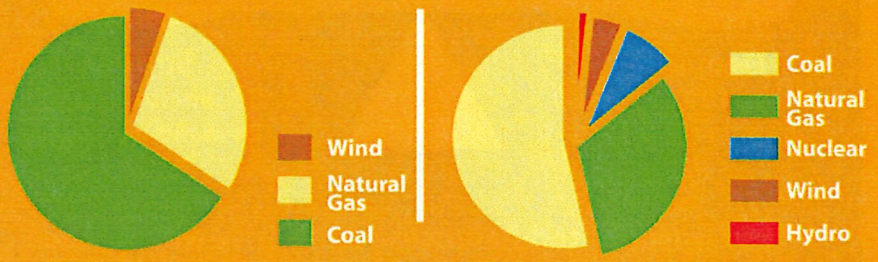
1-18

Day Ahead market offers regional diversity

The centralized market could provide access to a more diverse fuel mix than might be available to an individual utility.



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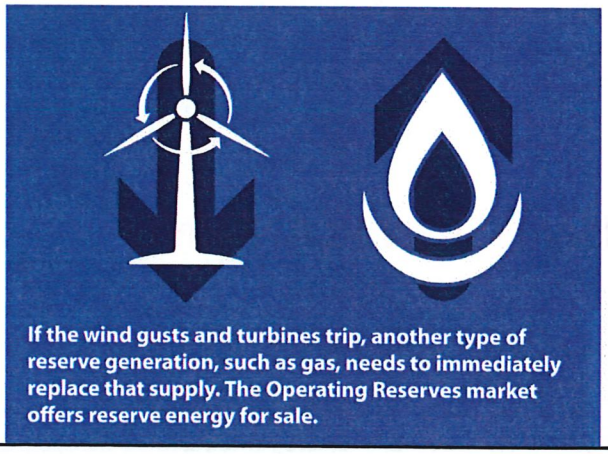
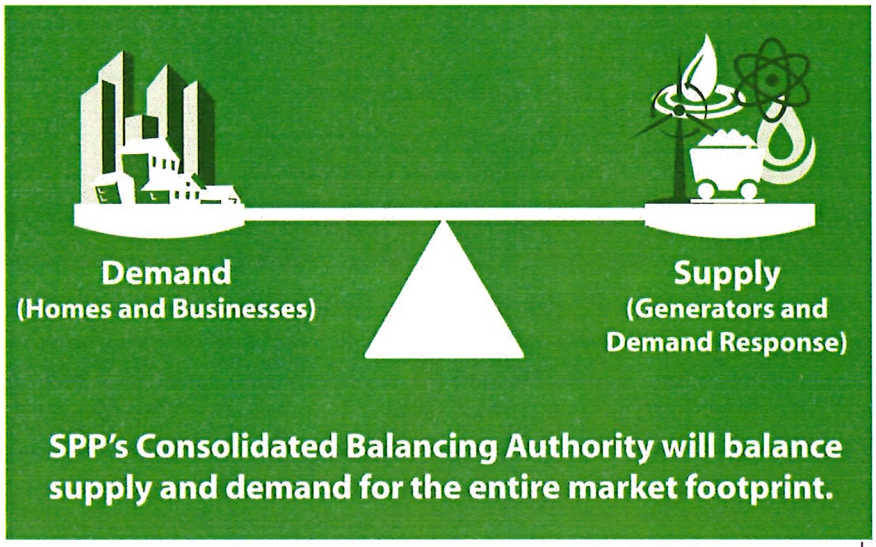
Benefits of Operating Reserves market

- Greater access to reserve electricity
- Improve regional balancing of supply and demand
- Facilitate integration of renewable resources



SPP | 38

SPP will balance load/supply for region

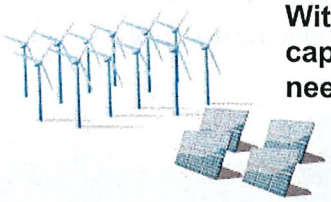


SPP's Consolidated Balancing Authority will balance supply and demand for the entire market footprint.

TRANSMISSION PLANNING

1 - 20

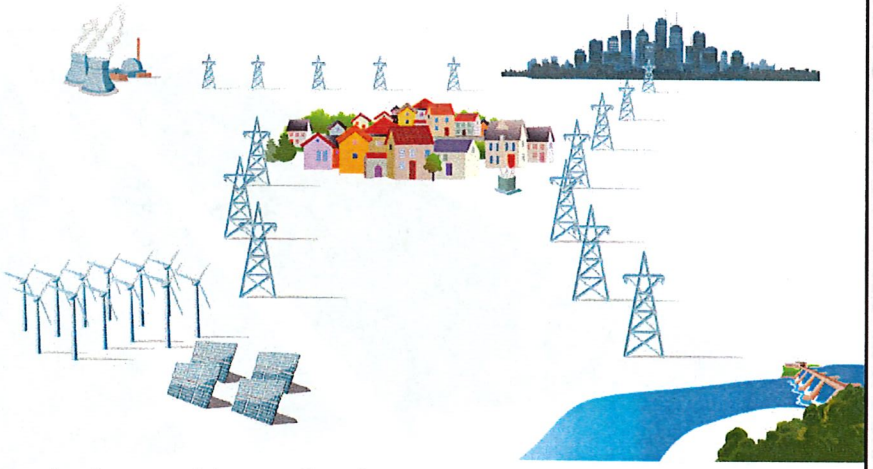
Generation = 60% Retail Electricity Rates



Without transmission, we can't deliver this capital-intensive generation to where it's needed across region

SPP | 41

Transmission = 10% Retail Electricity Rates



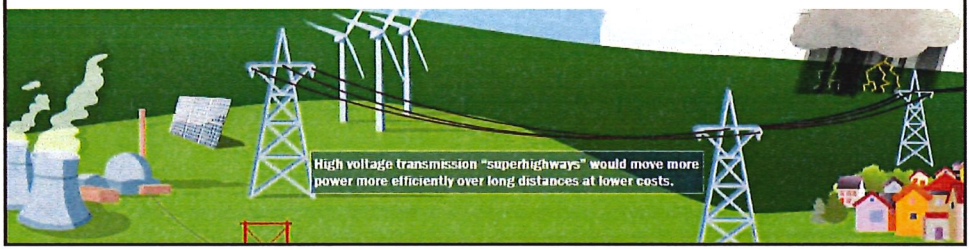
Transmission enables optimal use of our region's diverse generating resources, including coal, natural gas, hydroelectric, nuclear, and wind energy

SPP | 42

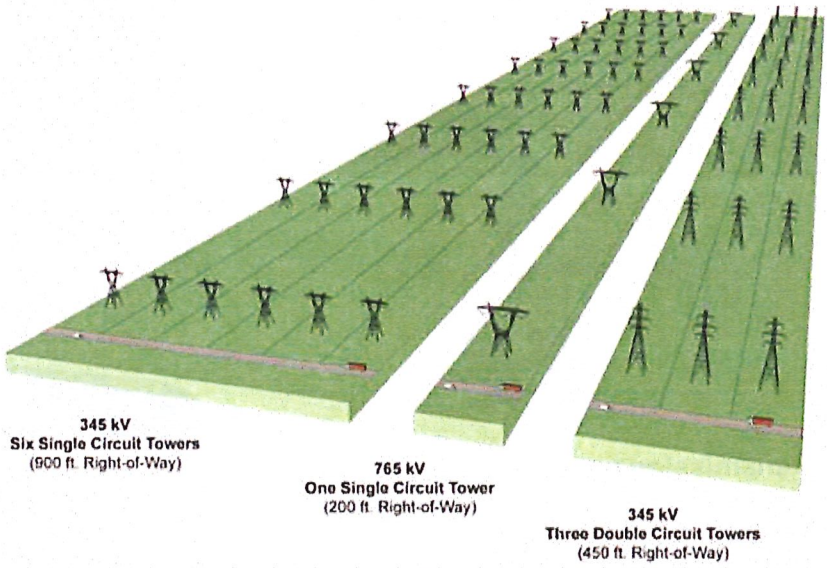
1-21

New vision of transmission

- In the past, built least-cost transmission to meet local needs
- Today, proactively building "superhighways" to benefit region:
  - Facilitate adding new generation to grid, including renewables
  - Improve electric reliability, operational efficiencies, and access to lower-cost and diverse generation resources
  - Enable wholesale energy markets to be more competitive
  - Contribute to economic success beyond electric industry
  - Reduce land use impacts



Larger transmission reduces Right of Way



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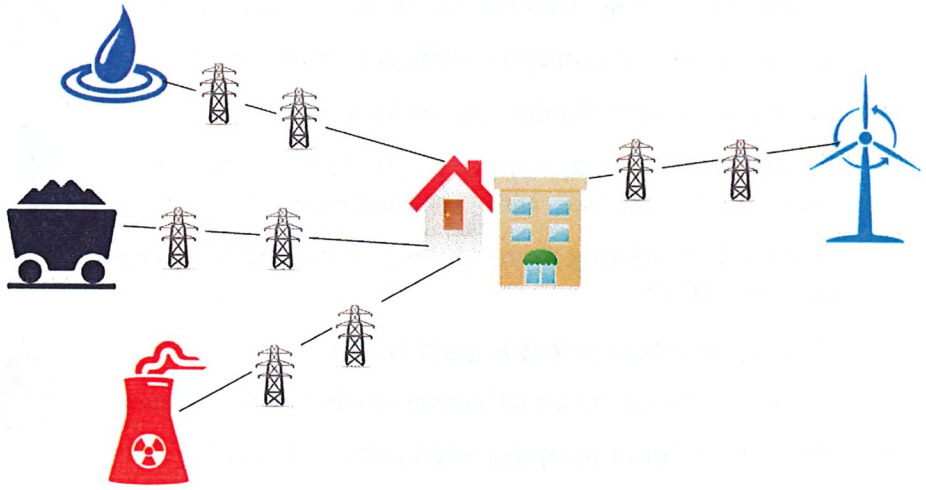
"Manufacturing", "transportation", and "delivery" must occur instantaneously



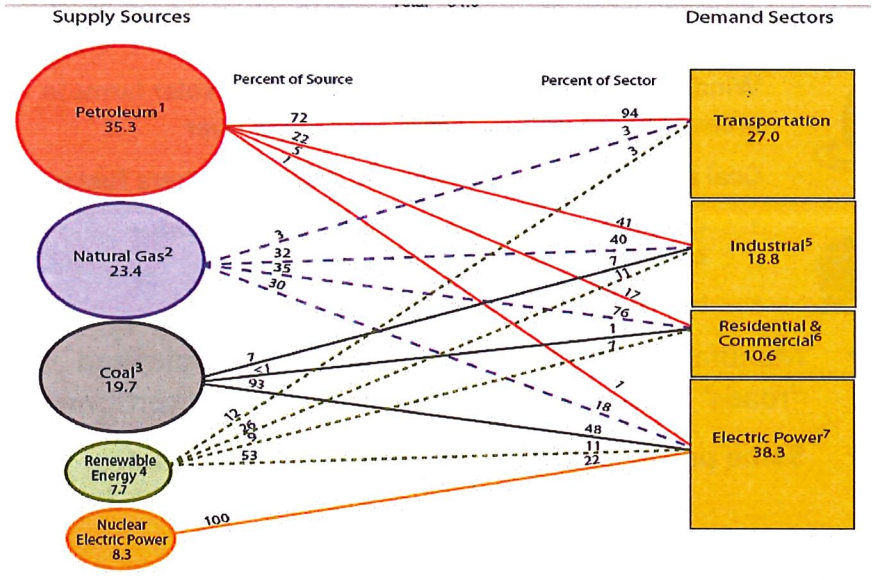
Other ways electric industry is unique

- Location of "manufacturing" plants is limited
  - Wind farms must be in areas of high wind, solar farms in areas with strong sun, hydro plants on a river
  - Coal and natural gas can only be extracted where fuel is
    - Coal mine may be far from coal-fired power plants – Expensive to transport coal long distances
    - Location of coal and gas plants have limitations
- Manufacturing plants may be far from people, and "roads" may not exist to deliver product to consumers
- Some products are only available at certain times

Transmission planners consider:

- What parts of grid need strengthening to "keep the lights on"?
  - Redundancies necessary to account for a line being out
- Where is current and future generation located?
- Where are electricity consumers located?
- Where on the grid do we frequently see congestion (more traffic than roads can accommodate)?
- Will laws mandating more renewable energy or a carbon tax impact traffic?
- How do coal/gas prices impact traffic?
  - People will use more coal if gas prices rise, and vice versa
- How do regional temperatures impact traffic?
  - If temperature differs across region, one area may need more energy

U.S. Energy Consumption



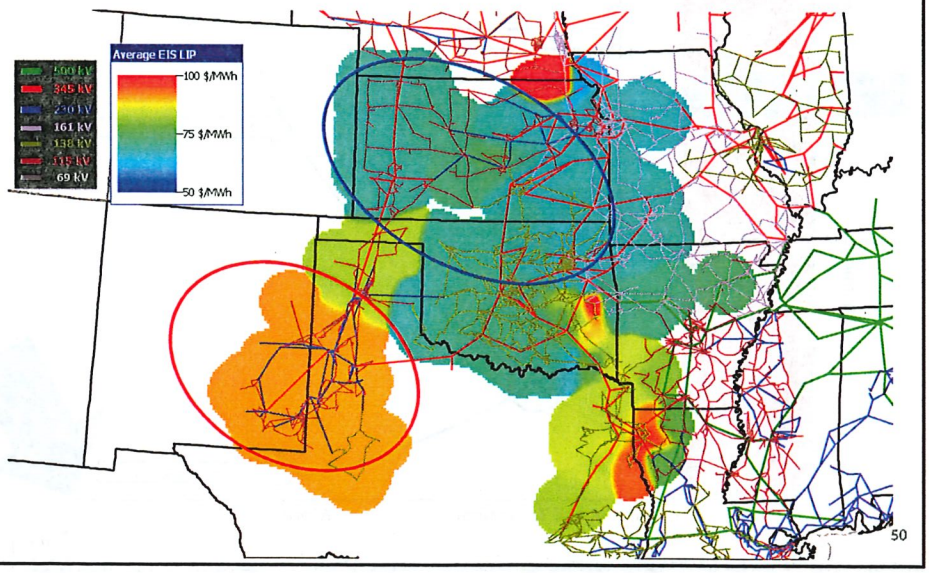
1-24

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

SPP | 49

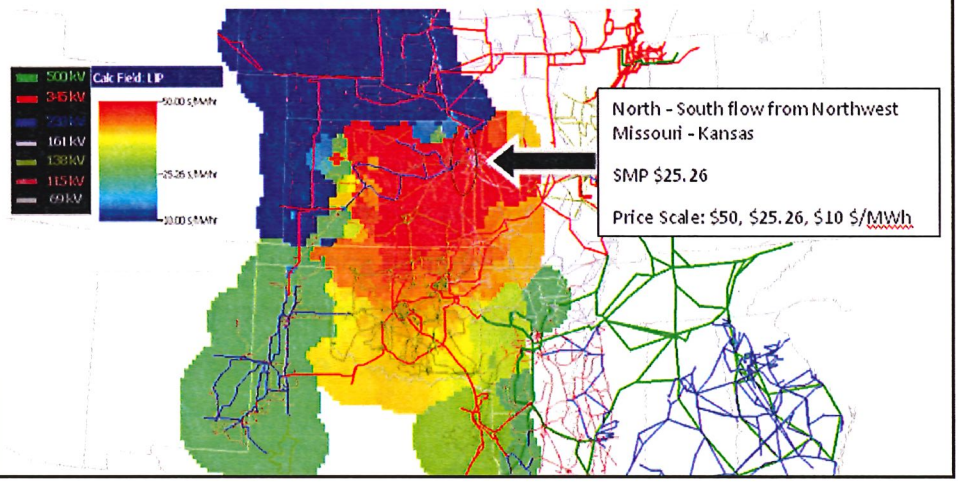
Congestion prevents access to lower-cost generation



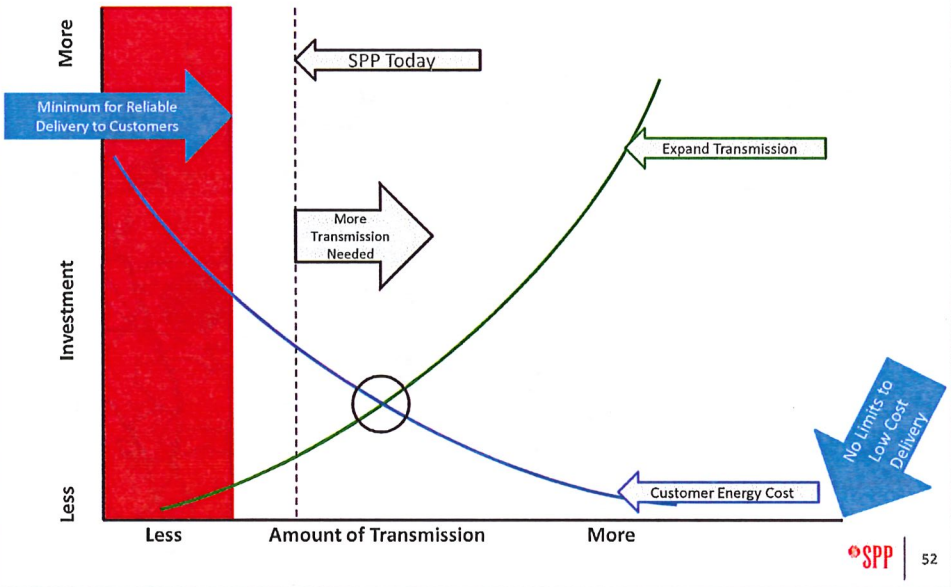
Congestion's Impact on Wholesale Market Prices

January 26, 2010 Interval Ending 12:15 PM

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



Finding Balance



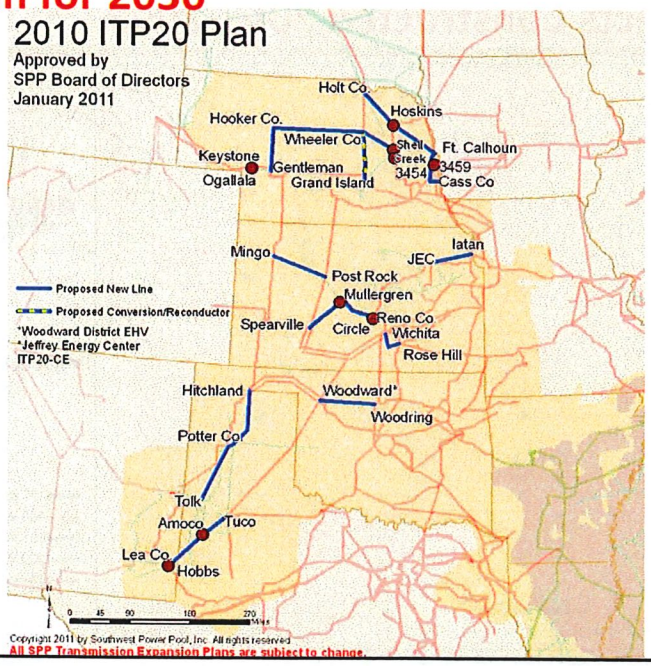
1-26

Integrated Transmission Planning

- **Goal:** Design transmission backbone to connect load to most reasonable generation alternatives
  - Strengthen ties to Eastern, possibly Western Interconnections
  - Promote transmission investment to meet reliability, economic, and public policy needs
- **Horizons:** 20, 10, and 4 year
- **Focus:** Regional, integrated with local
- **Resulting in:** Comprehensive list of needed projects for SPP region over next 20 years
  - With 40 year financial/economic analysis
- **Underlying Value:** Reliability and Economics are inseparable

ITP

2010 Plan for 2030

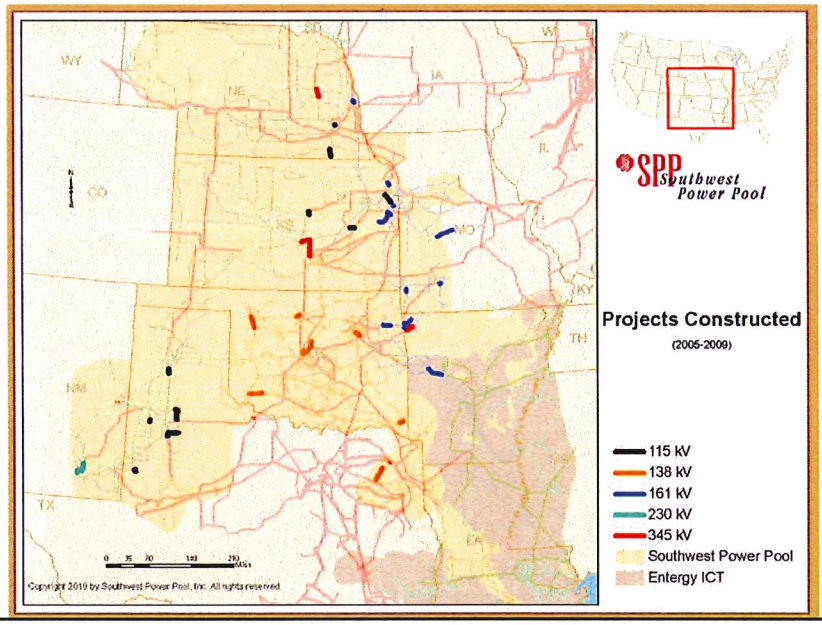


1-27

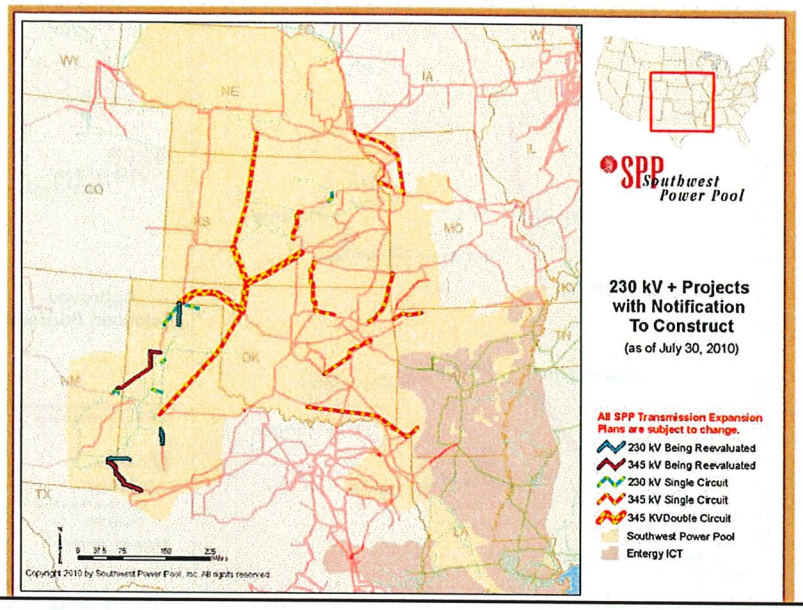
Other Transmission Planning

- Generation Interconnection Studies
  - Determines what transmission is needed to connect new generation to grid
  - Doesn't include transmission service
- Aggregate Studies
  - Determines what transmission is needed meet requests for transmission service
  - Shares costs of studies and new transmission

Projects Constructed 2005-2009



Projects with Notifications to Construct



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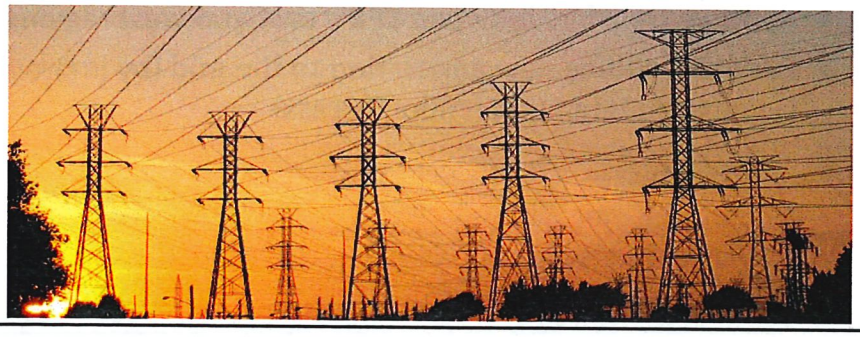
Balanced Portfolio

- Economic transmission upgrades (cost) to lower generation production costs (benefit)
- Balance costs and benefits in each zone
- Transmission expansion costs shared regionally



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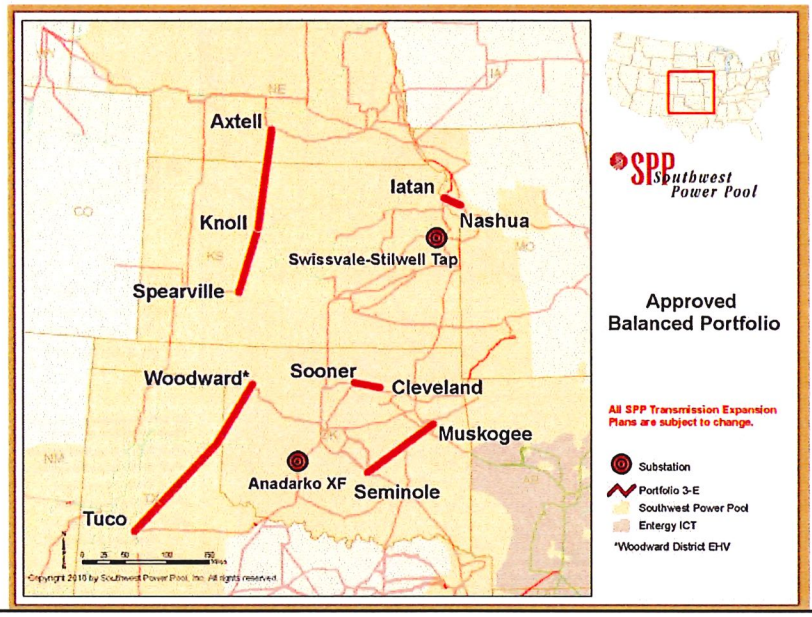
Balanced Portfolio



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Priority Projects

- Benefit/cost ratio = 1.58
- Previously identified in SPP planning studies
- Relieve grid congestion
- Improve SPP members' ability to deliver power to customers (by improving Aggregate Study process)
- Improve transfers between SPP's east and west regions
- Facilitate adding new generation to the grid (by improving Generation Interconnection process)

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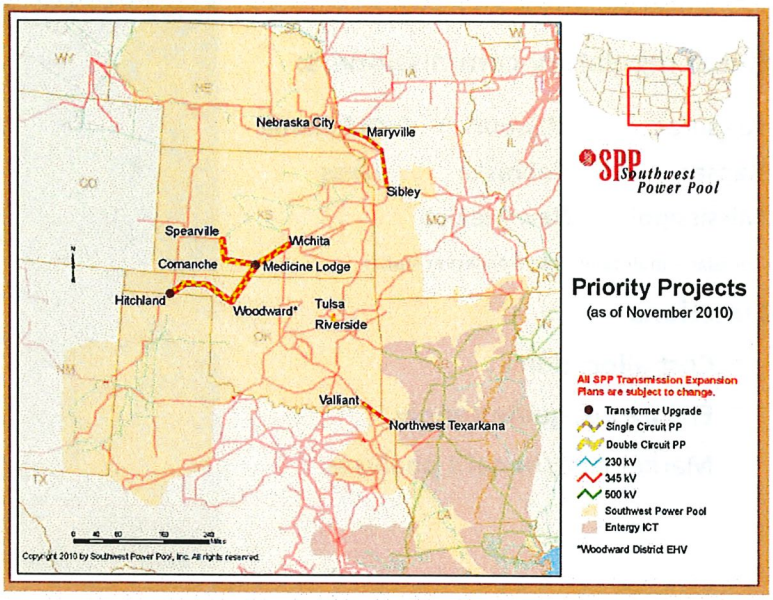
1-30

Priority Projects



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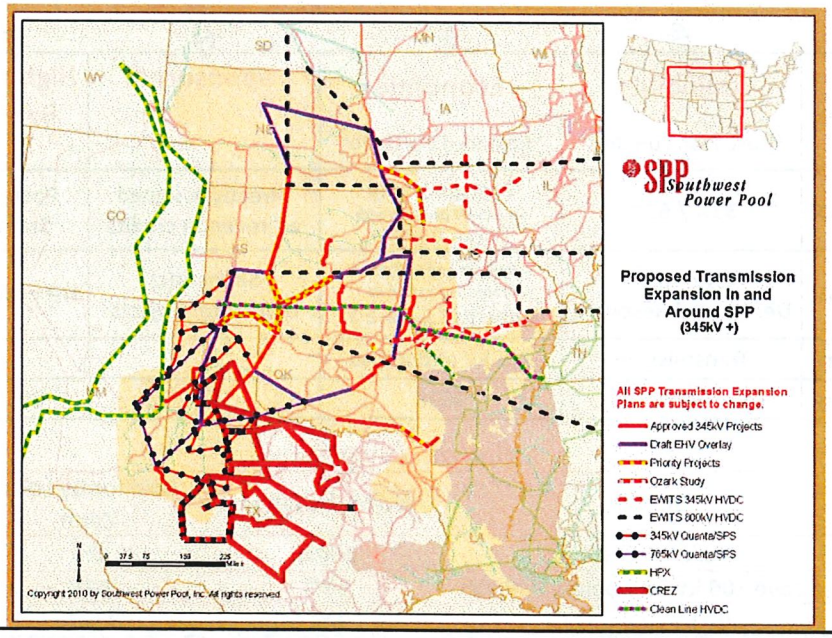
Regional Plans



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1-31

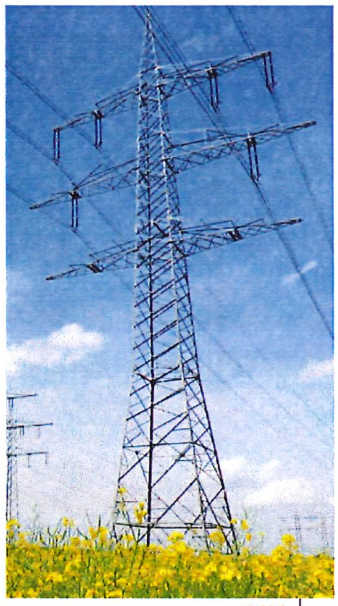
Regional State Committee

- Retail regulatory commissioners:

Arkansas	Missouri	Oklahoma
Kansas	Nebraska	Texas
Mississippi	New Mexico	

Louisiana maintains active observer status

- Functions
  - Cost allocation
  - Ensure adequate supply
  - Market cost/benefit analyses



Who pays for transmission?

Type	Reliability "Base Plan Funding"	Economic "Balanced Portfolio"	Sponsored	Highway/ Byway
Funded	33% / 67%	"Postage Stamp" for 345 kV projects with balancing transfers	Directly assigned w/ revenue credits	Postage Stamp
Reason	Criteria or Designated Resource	Aggregate and Individual Transmission Owner Benefits / Cost ≥ 1	Sponsor(s) nominate projects	ITP projects
Voltage	Transmission	345 kV and above		
Effective	2005	2008	2009	2010

Highway/Byway

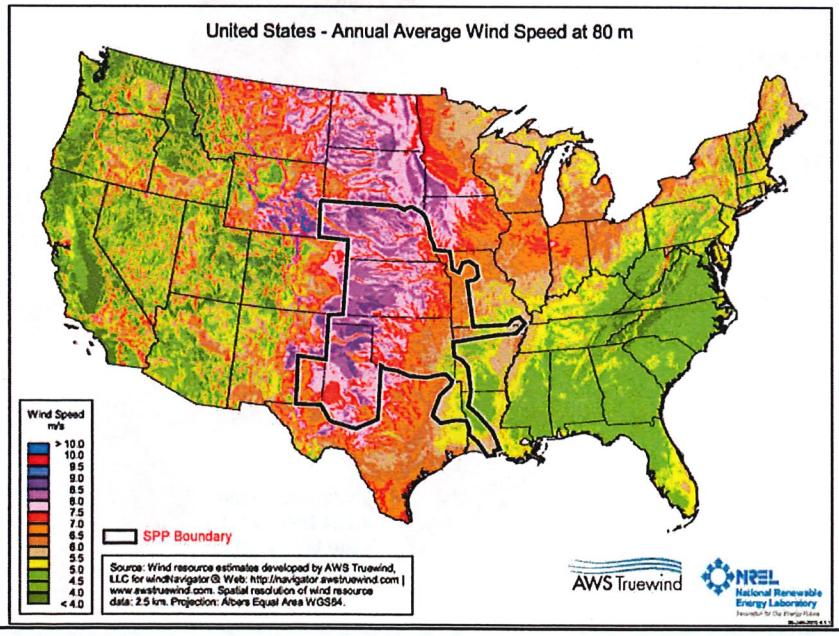
Voltage	Paid for by Region	Paid for by Local Zone
300 kV and above	100%	0%
above 100 kV and below 300 kV	33%	67%
100 kV and below	0%	100%

1-32

Wind Energy Development

- Wind "Saudi Arabia": Kansas, Oklahoma, Texas Panhandle, New Mexico, Nebraska
  - 60,000-90,000 MW potential
  - More wind energy than SPP uses during peak demand
- ~3,900 MW capacity of in-service wind
- ~28,000 MW wind in-service and being developed
  - Includes wind in Generation Interconnection queue and with executed Interconnection Agreements

Annual Average Wind Speed - 80 meters



Challenges with developing wind energy

- Intermittent
  - Must be supplemented with constant generating sources
- Wind in remote areas
  - Expensive new transmission needed
- "Not in my backyard" siting issues
- Seams agreements
- Renewable Energy Standards

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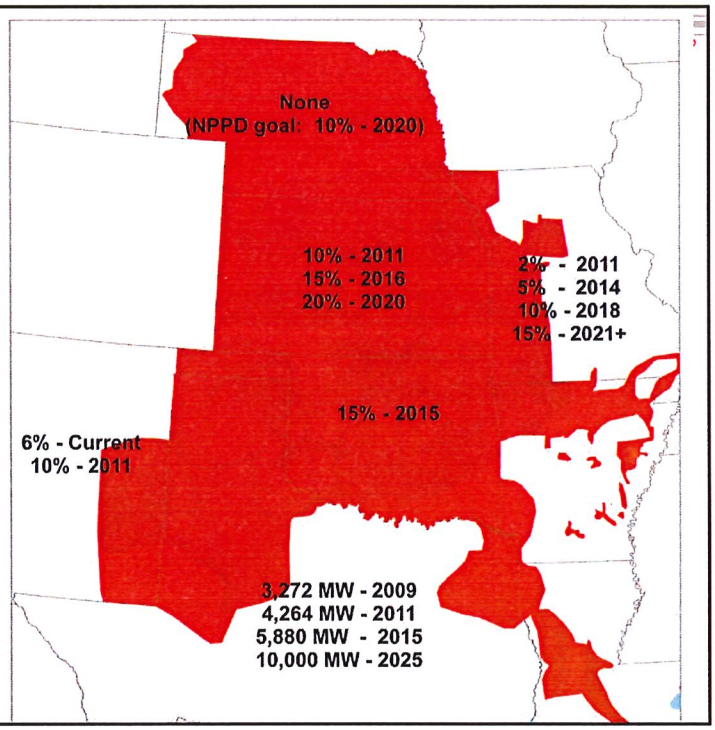
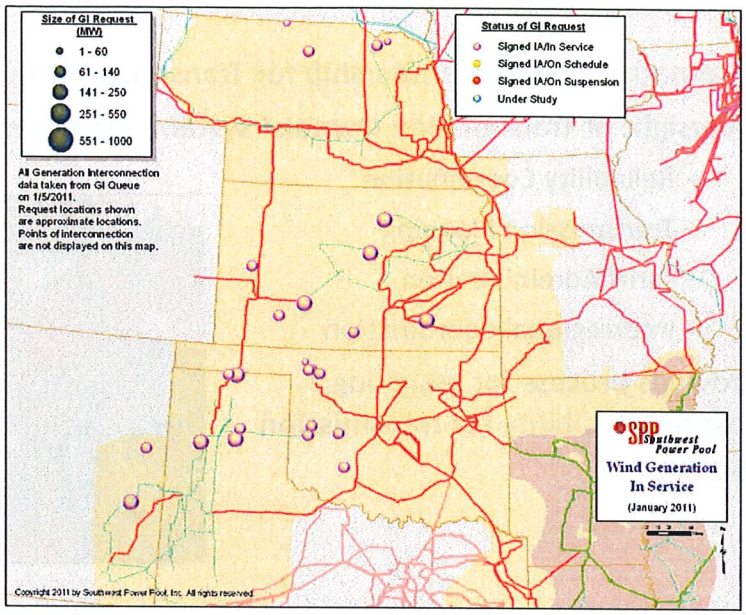
Renewable Portfolio Standards

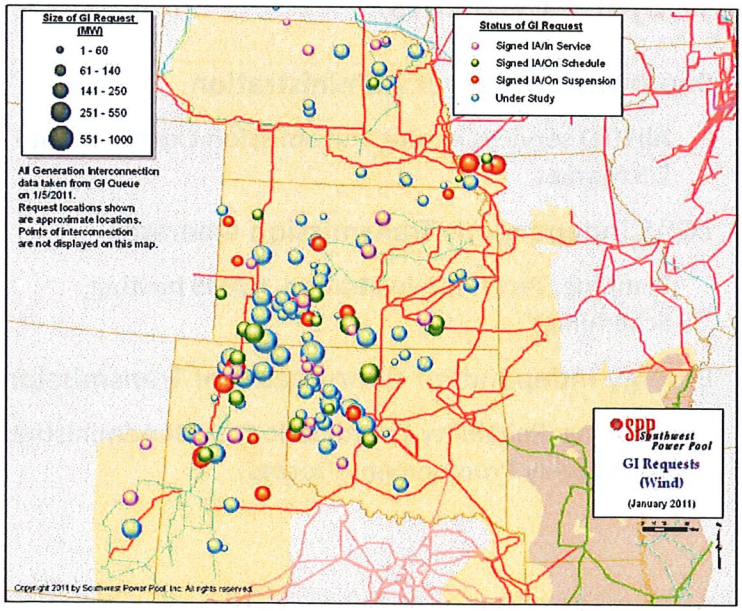


1-34

Wind In Service



Generation Interconnection Requests



I-35

Contract Services

- Alternative to RTO membership for Transmission Owners
- Oversight of Transmission Owners' system operations:
  - Reliability Coordination
  - Transmission Planning
  - Tariff Administration
  - Interregional Coordination
- Provides process for assigning cost responsibility for transmission upgrades

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SPP's Major Contracts

- Southwestern Power Administration
  - All RTO services except Transmission Expansion and EIS Market
- LG&E Independent Transmission Operator
  - Planning, Tariff Administration, OASIS hosting, Scheduling
- Entergy Independent Coordinator of Transmission
  - Planning, Reliability Coordination, Tariff Administration, and Weekly Procurement Process

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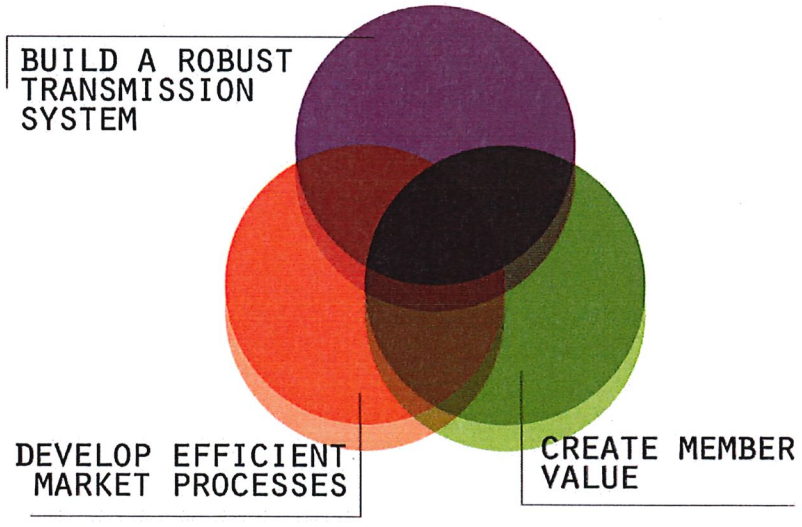
How does SPP impact you?

- SPP cost = 37¢ of $100 residential utility bill

- Cost to typical residential customer for $1 billion incremental transmission is ~$1.34 per month
- 2005 independent analysis by Charles River Associates:
  - $500,000 cost-benefit study
  - On behalf of state regulatory commissions
  - 270% ROI for SPP services over the next 10 years

SPP Strategically



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