

Approved: February 26, 2009
Date

MINUTES OF THE SENATE UTILITIES COMMITTEE

The meeting was called to order by Chairman Pat Apple at 1:30 p.m. on February 12, 2009, in Room 545-N of the Capitol.

All members were present except
Senator Emler, excused
Senator McGinn, excused

Committee staff present:
Ann McMorris, Committee Assistant
Raney Gilliland, Kansas Legislative Research Department
Cindy Lash, Kansas Legislative Research Department
Mike Corrigan, Office of the Revisor of Statutes

Conferees appearing before the committee:
Heather Starnes, Southwest Power Pool, Little Rock, Arkansas

Others attending:
See attached list.

Overview of Southwest Power Pool

Heather Starnes, Little Rock, Arkansas, presented the overview of Southwest Power Pool with a power point presentation. This is a member driven organization and they help their members develop and implement policies. She reviewed their company background, the various milestones achieved, their coverage for all or part of seven states, their current operation in Little Rock, Arkansas, and statistics on their service territory. Maps on their feasibility cluster study results were discussed. Their Joint Coordinated System Plan (JCSP) was described. In discussing various kinds of renewables, Ms. Stearns noted with wind energy that transmission will need to accommodate other types of generation to help balance the wind generation as it doesn't always blow at the time of peak usage and this needs to be balanced out in order to maintain voltage control and reliability, (Attachment 1)

The next meeting is scheduled for February 17, 2009.

The meeting was adjourned at 2:30 p.m.

Respectfully submitted,

Ann McMorris
Committee Assistant

Attachments – 1

GUEST LIST
SENATE UTILITIES COMMITTEE
FEBRUARY 12, 2009

NAME

COMPANY

Joe Duke	KC BPU
Josh Smith	Intern, Sen. Pyle
Nelson Krueger	PAR Electric
Nick Jordan	Capital Strategies
Maui Harbeck	CEP
Mark Schreiber	Westar
Scott Jones	KCPK
Dan Sprunge	Carb



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

A photograph of a transmission tower and power lines is positioned on the left side of the slide, partially overlapping the text area.

SPP: A Closer Look

February 12, 2009

The SPP Difference

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



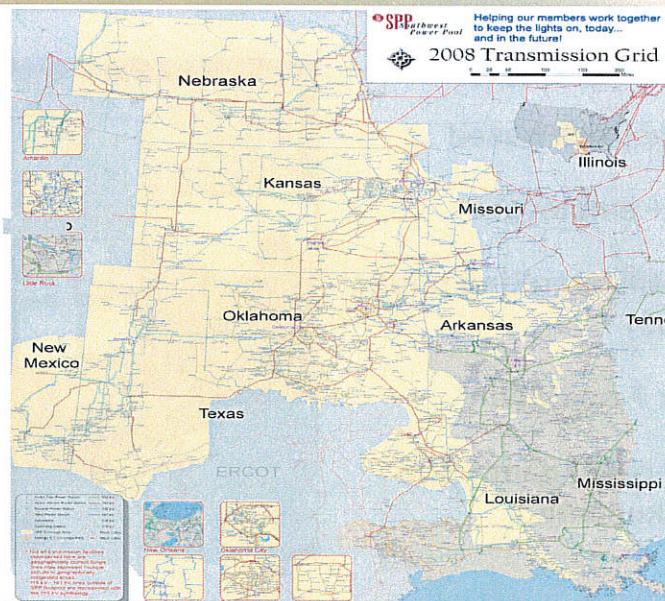
Our Beginning

- Founded 1941 with 11 members
 - Utilities pooled resources to keep Arkansas aluminum plant powered for critical defense
- Maintained after WWII for reliability and coordination



SPP Milestones

- 1968: NERC Regional Council
- 1980: Telecommunications network
- 1991: Operating reserve sharing
- 1994: Incorporated as non-profit
- 1997: Security coordination
- 1998: Tariff administration
- 2001: Regional scheduling
- 2004: FERC-approved Regional Transmission Organization
- 2006: Contract Services
- 2007: Launched EIS Market, NERC Regional Entity



SPP at a Glance

- Manage electric grid for all or part of seven states:

Arkansas	Missouri	Texas
Kansas	New Mexico	
Louisiana	Oklahoma	

- 53 members in above states, Mississippi, and Nebraska*

* Nebraska system to move into SPP April 1, 2009



SPP at a Glance

- Little Rock based
- 350+ employees
- \$114M operating budget (2009)
- 24 x 7 operation
- Full redundancy and backup site



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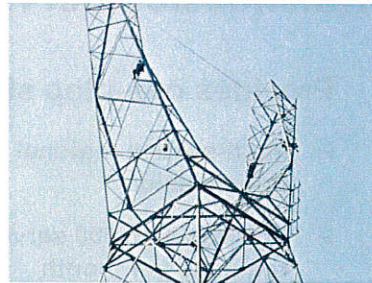
Quick Statistics

- 255,000 square miles service territory
- 43.3 GWs peak demand
- 40,364 miles transmission lines
- In 2008, SPP members completed 98 transmission projects totaling \$325 million



53 SPP Members

- 12 Investor-Owned Utilities
- 11 Cooperatives
- 9 Municipals
- 4 State Agencies
- 2 Independent Transmission Companies
- 4 Independent Power Producers/Wholesale Generation
- 11 Marketers



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Reliability Coordination

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

*As "Air Traffic Controllers,"
our operators comply with...*



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

Transmission Service

- Provides one-stop shopping
 - Multi-system regional transmission
 - Process > 15,000 service requests per month
 - Billing and revenue distribution
- Consistent rates, terms, conditions
- Independent administration

As "Sales Agents," we administer ...



*...an 1,400 page Open
Access Transmission Tariff
(OATT) on behalf of our
members and customers.*

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Transmission Service

- Reserving transmission service
 - = Buying plane ticket to reserve seat
- Tag generated when transmission bought or sold
 - = Boarding pass
- Schedule created from tag
 - = Approved schedule = sitting on plane
 - When schedule approved, generators move to provide energy for transaction



Wholesale Energy Market

- Monitors resource / load balance
- Ensures most economic dispatch
 - Provided system reliability is met
- First year of market provided \$100 million in benefits to members

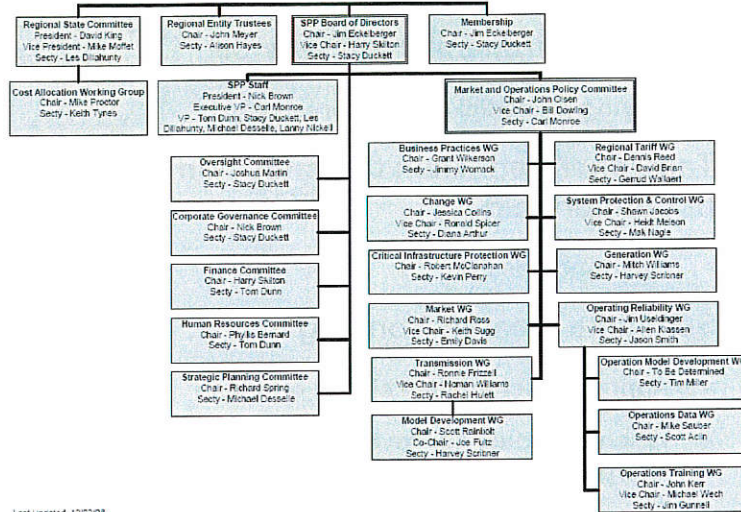
SPP's Energy Market is like the "NYSE".

17.12	-0.05	-0.29%
42.15	+0.75	1.81%
27.09	+0.13	0.48%
22.47	+0.46	2.09%
23.37	-1.26	-5.12%
391.66	+12.51	3.30%
95.61	+0.74	0.78%
25.22	+0.42	1.69%
24.62	+0.30	1.22%

...and follows over 200 pages of market protocols.

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SPP Organizational Groups

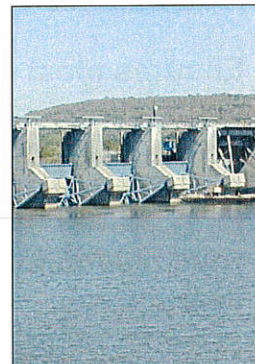


Last Updated: 12/02/08

Quick Statistics


56.5 GW capacity resources

Fuel Type	Percentage of capacity	Energy produced in SPP
Coal	39%	64%
Gas/Oil	42%	26%
Nuclear	2%	6%
Wind	1%	3%
Other	11%	1%
Hydro	4%	1%

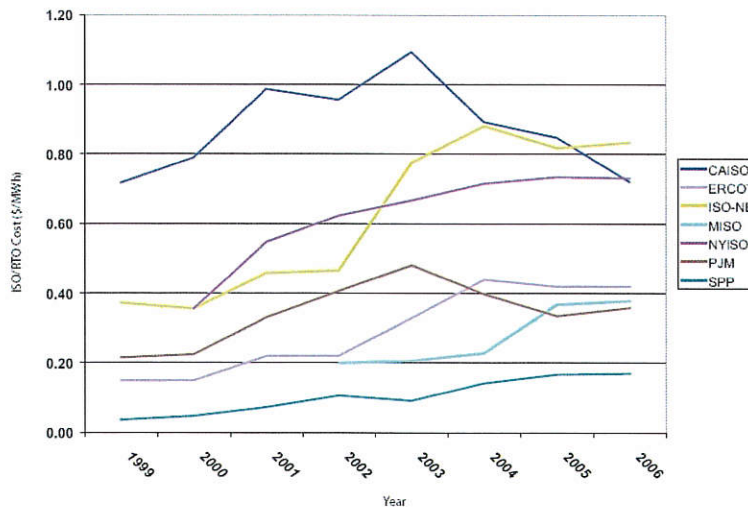


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How does SPP impact you?

- SPP cost = 30¢ of \$100 residential bill 
- 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

ISO/RTO Costs Per Megawatt Hour of Load



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Perfect Storm of Complex Issues

Growth in demand Greenhouse gas emissions

Political and technical challenges Challenges with integrating renewables into grid

Lack of transmission Aging infrastructure

Rising gas prices Growth in uncommitted capacity

There is no...



The solution will take...



Immediate National Leadership Mandating:

- Broad portfolio approach to electric generation resources to meet demand and reduce emissions
- Federal siting and cost allocation for 500 kV+ bulk electric transmission
 - Needed to deliver remote renewables and baseload generation
- Research, development, and demonstration of carbon capture and storage, renewables, and efficiency/demand response technologies

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Transmission Planning

Overview

Transmission Planning

- **SPP Transmission Expansion Plan**
- **GI Cluster Feasibility Study**
- **Balanced Portfolio**
- **EHV Overlay**
- **JCSP and beyond**

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SPP Transmission Expansion Plan ("STEP")

- Focus has been comprehensive reliability assessment and documentation of other commitments for approved generator interconnections, long term firm service agreements and other economic / sponsored upgrades for transmission expansion which have been reviewed and approved by SPP.
- Most recent approved 2008-2017 STEP included \$2.2 B of transmission projects over 10 year horizon with almost \$800M of transmission projects requiring financial commitments in 2008-2011 and \$465M of major economic upgrades primarily in KS (costed at 345 kV).

2008 STEP

Approved by TWG on January 5th

Approved by MOPC on January 14th

Anticipate approval by SPP BOD on January 27th

Almost \$2.7 B of projects over 10-year horizon

- Base Plan reliability projects increased from \$718 M to \$862 M
- Non-OATT regional reliability projects increased from \$65 M to \$286 M
- Economic projects increased from \$465 M to \$622 M

What is different?

'08 STEP

1. Tariff Studies
 2. Regional Reliability Planning
 3. Sub-Regional (Local Area) Planning
 4. High Priority Economic Studies
 5. Inter-Regional Coordination
 6. Project Tracking
- Appendix A - G

'07 STEP

1. Reliability
 2. Economic Screening of Network Upgrades
- Appendix A & B

Executive Summary – 2008 STEP vs. 2007 STEP

2008 STEP (Nearest 10 Million)	2007 STEP (Nearest 10 Million)	Upgrade Type
\$320	\$290	TSR & GI Service Agreements
\$880	\$720	Reliability - Base Plan
\$800	\$640	Reliability - Other
\$620	\$460	Economic Upgrades
\$60	\$90	Inter-Regional Coordinated Upgrades
\$2.7B	\$2.2B	Appendix A - TOTAL

Filed Served Agreement or BOD Approved

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Improvements

- Comprehensive
- More accurately reflects “STEP”
- Follows Order 890 and new Attach. “O”
- Good summary of '08 SPP transmission development collaborative efforts.
- More independent RTO planning report.

TWG, CAWG & MOPC Endorsements

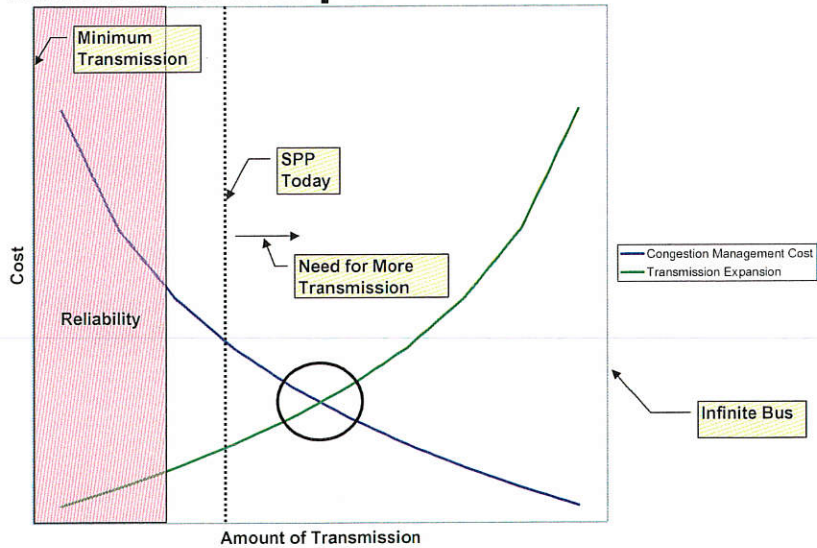
- TWG, 1/5/2009
 - Sections 3, 4 and 7, excluding Section 3.6 of the 2008 Annual STEP Report
 - Endorsed Appendices A and B as part of Section 3
 - TWG agreed the report is “a fair representation of the 2008 expansion planning activities SPP Staff was involved in.”
- MOPC, 1/14/2009
- CAWG - section 5.2 (approved 1/22)

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STAFF RECOMMENDATION

- The SPP RTO Staff recommends the SPP BOD accept the “2008 SPP Transmission Expansion Plan” report as the documentation of SPP Staff completing the SPP OATT processes including the Attachment O transmission planning process.

Transmission Expansion



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GI Queue Challenges

Over 50 GW of wind in SPP queue

Awaiting FERC approval to cluster GI studies

Preliminary results to be posted today for GI Cluster Feasibility Study with following highlights:

- Prior queued requests 7,410 MW
- 14,255 MW of new GI requests in 7 geographic clusters
- Clusters ranging from 660 MW to 3,013 MW studied; Woodward, Hitchland, Spearville, Mingo/NW KS, Amarillo, S Texas/NM, SW OK
- Allocate \$2.6 B of transmission expansion

Tariff Studies

- Generation Interconnection and Transmission Delivery are separate and distinct services under the SPP Tariff.
- Process improvements needed and being finalized. Task Force recommendations must be converted to Tariff language and approved by FERC prior to implementation.
- Generation Queueing Task Force Recommendations
 - 3 Year suspension period is problematic
 - 15,000 MW GI Cluster Feasibility Study posted in December
 - Tariff changes forthcoming with stricter milestones and commitments
- Transmission Service Studies are improving
 - AG3-2006 and AG1-2007 studies complete, agreements being finalized
 - Pairing AG studies now to allow studies to catch up

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Aggregate Transmission Study Improvement Steps

- **Aggregate Study Improvement Task Force (ASITF) recommendations approved by MOPC in April to expedite and improve the Aggregate Study (AG) process.**
- **FERC filing accepted in October 2008 to pair the Aggregate Studies beginning with 2008-AG1 and AG2 (2008-AGP1) and ending in 2010.**
- **2008-AGP1-ASIS posted August 15, 2008**
- **2008-AGP1-AFS-2 posted January 9, with responses due January 24th**

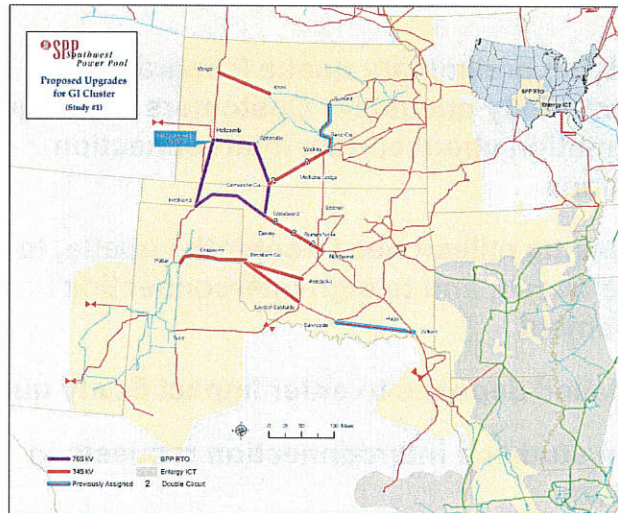
ASITF Approved Recommendations

- Require all necessary documents for AG study during the 4 month open season. (Provides more study time)
- Strive to limit process to 3 facility studies.
- Eliminate the System Impact Study
- Development of a "cost causer" methodology for allocation of facility study costs.

RTWG has reviewed and approved these tariff changes. The MOPC approved the changes in January to be recommended for approval by the Board of Directors in their January meeting.

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DRAFT GI Cluster Feasibility Results



Generation Interconnection in SPP

- Current Status (as of December 31, 2008)
- 197 Active* Requests totaling 51,115 MW
 - 174 are for Wind totaling 45,755 MW
 - 23 are for Fossil or Other totaling 5,360 MW

*Active Requests do not include requests with an IA that have not yet been built (suspension or construction pending)

- Generation Queueing Task Force (GQTF) initiated in March, 2008.

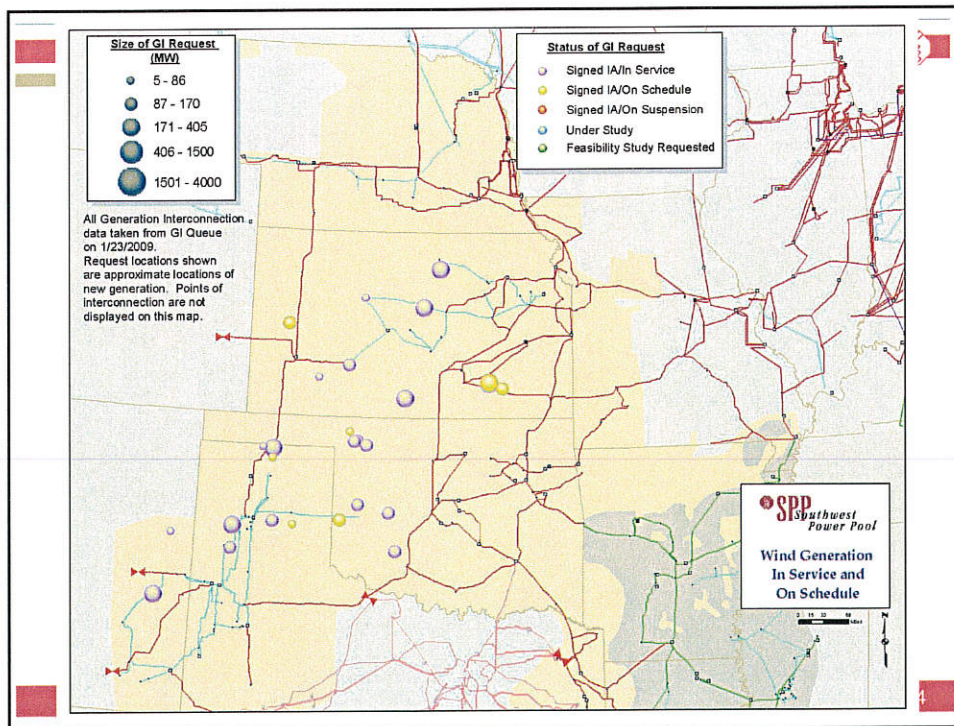
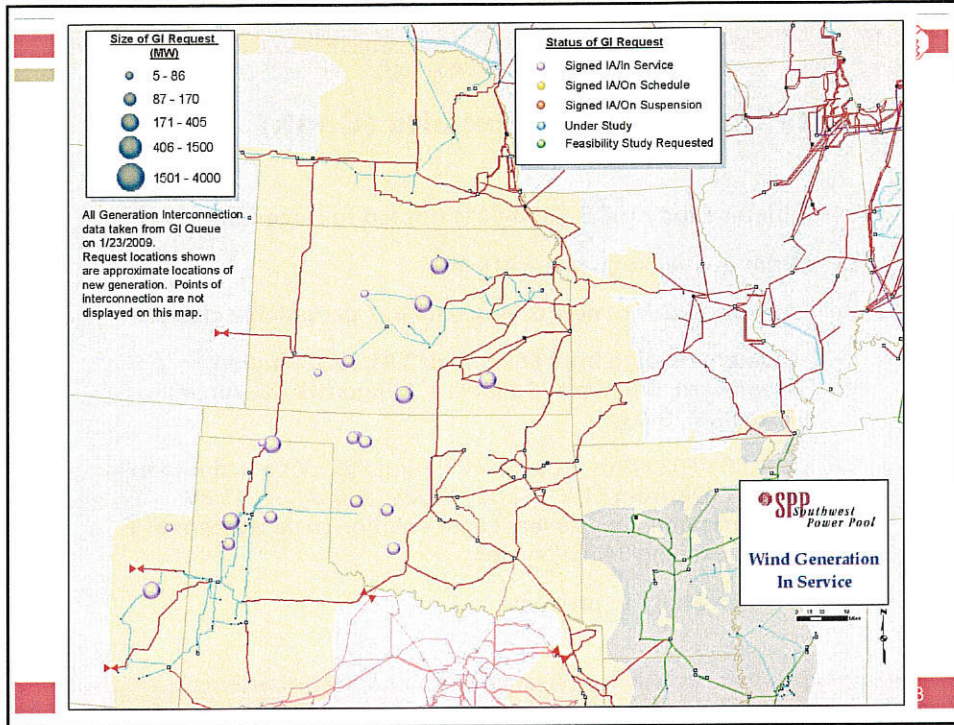
GQTF Recommendations

- Establish preliminary queue (separate from Impact Study queue) for Customers that require information about certain interconnection locations
- Increasing milestones to enter the queue, to stay in the queue, and to sign Interconnection Agreement
- Increased deposits to enter Impact Study queue
- Begin studying interconnection requests in clusters

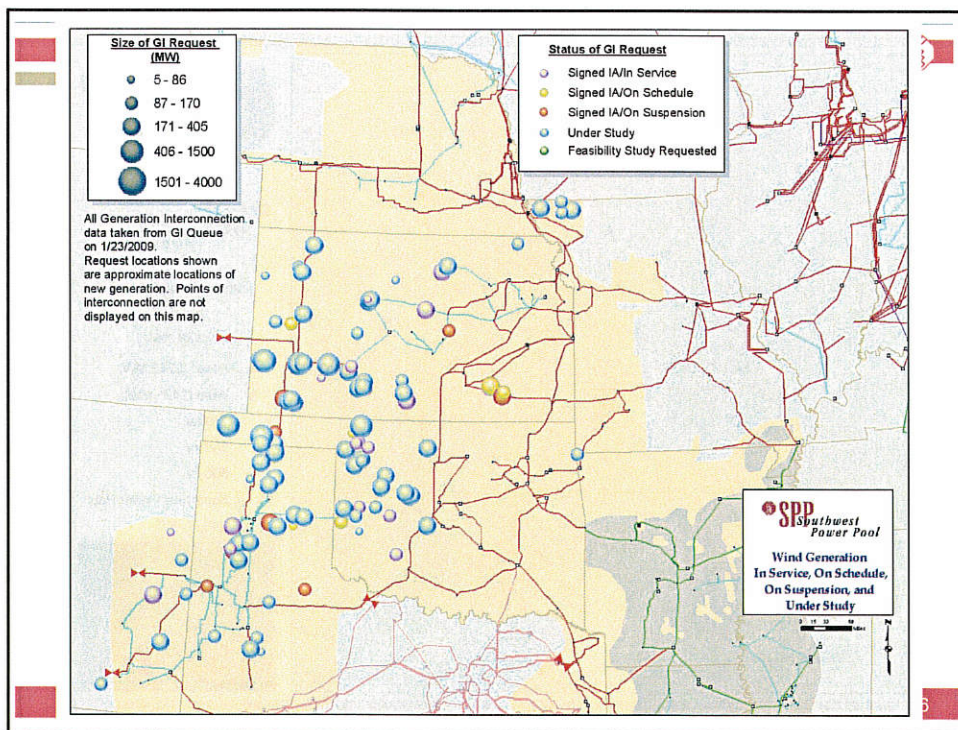
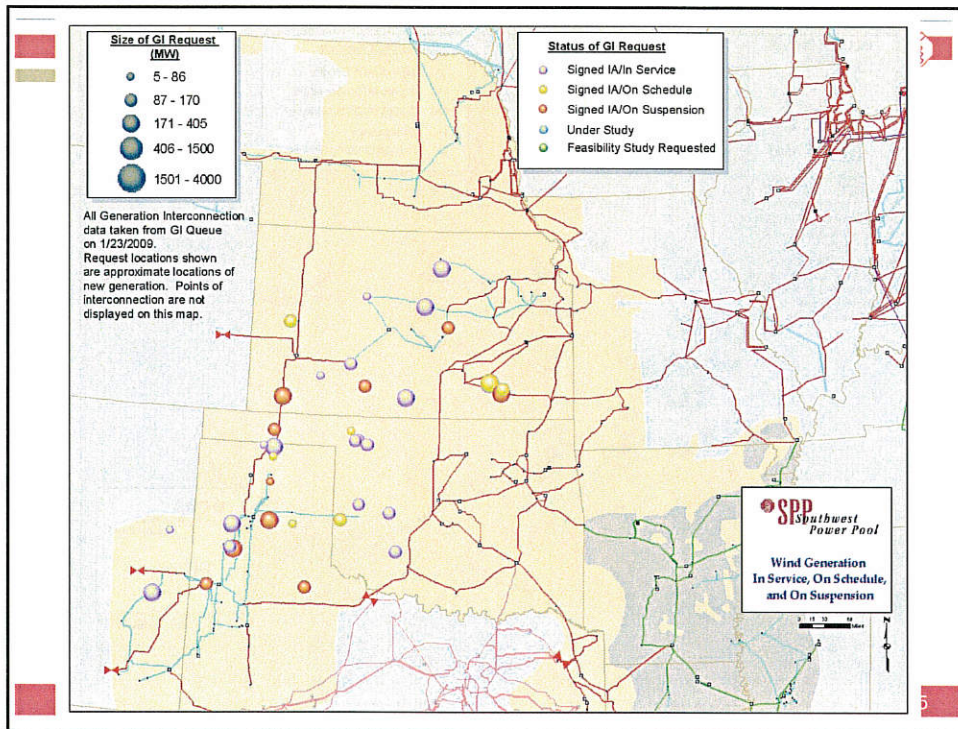
Feasibility Cluster Study Results

- To immediately start clearing interconnection queue backlog before BOD and FERC approval, Staff asked for a tariff waiver from FERC to study backloged requests in clusters.
- Filing made in November, 2008

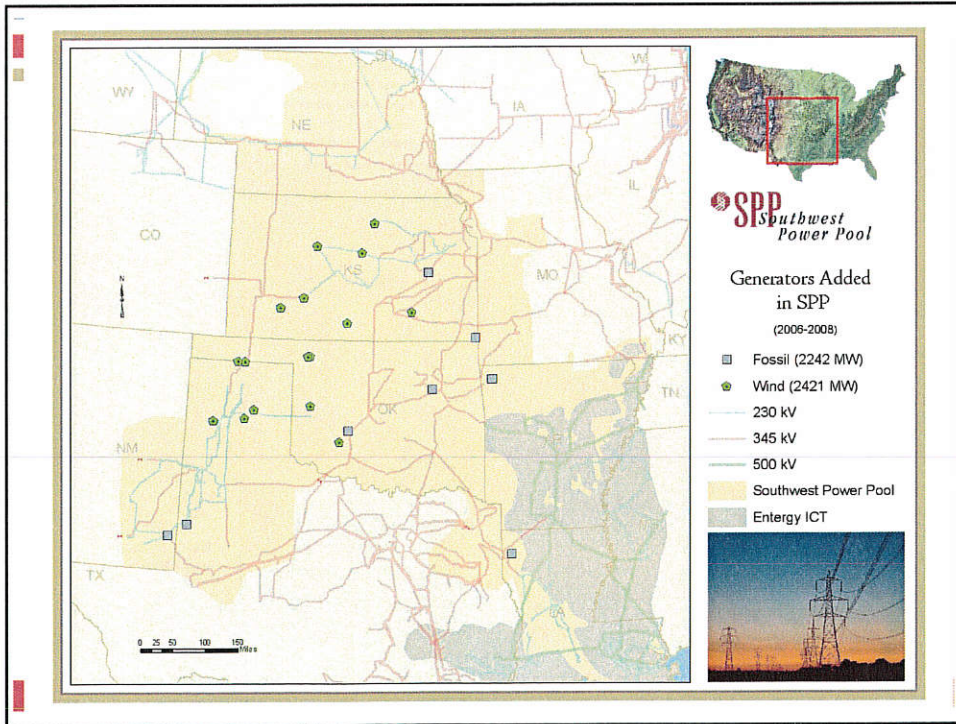
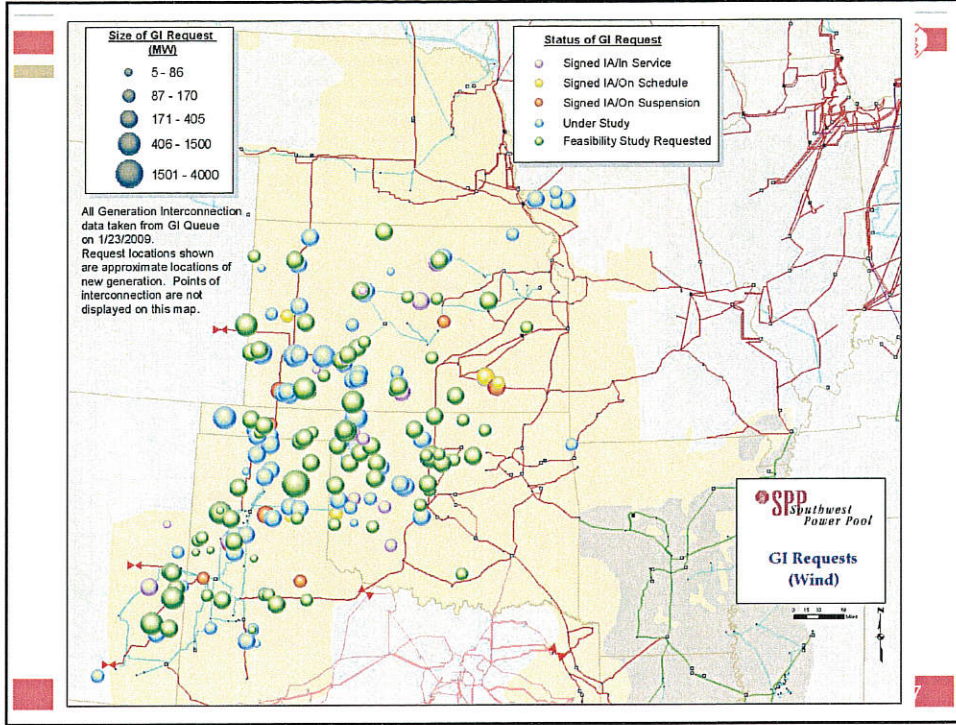
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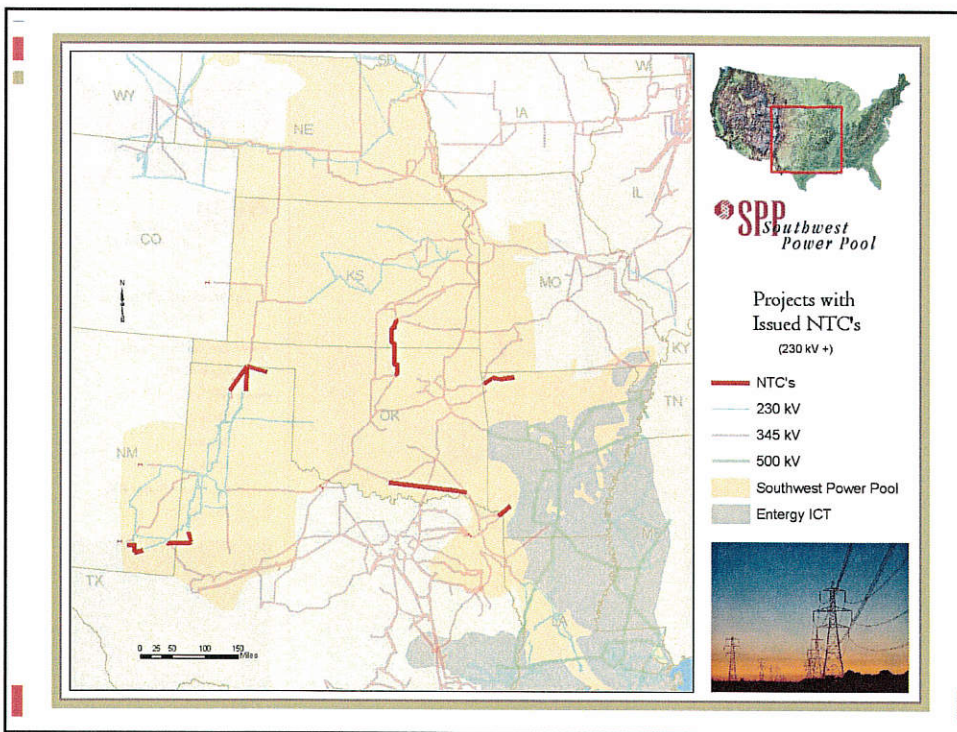
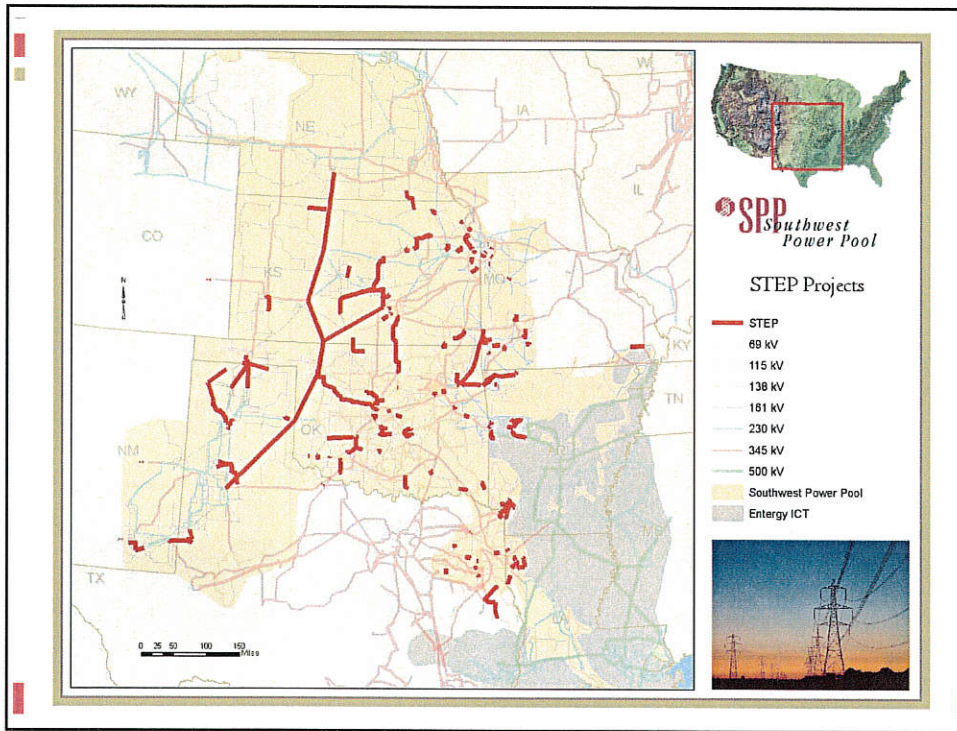


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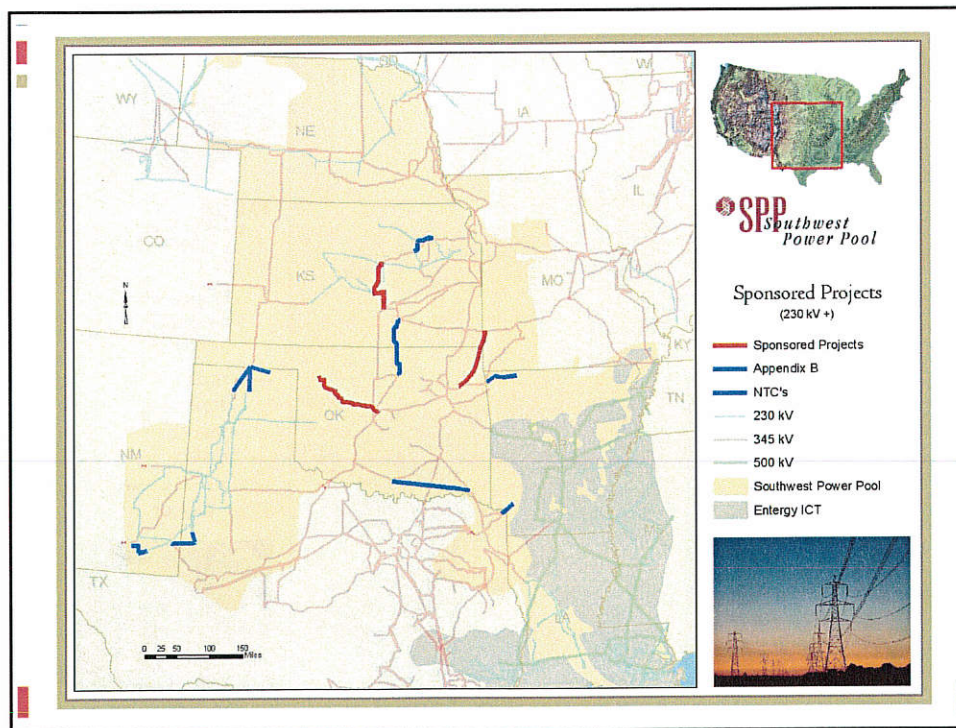
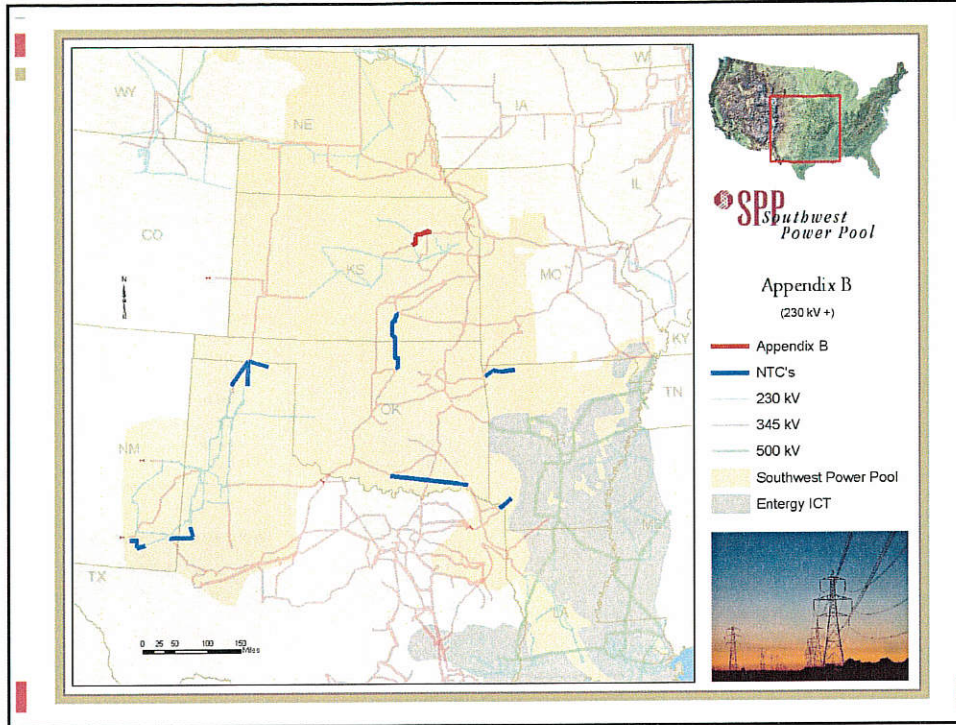


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Economic Planning

Reliability and Economics are Inseparable

Economic Upgrades – sponsored under existing tariff but eligible for credits based on new service sold

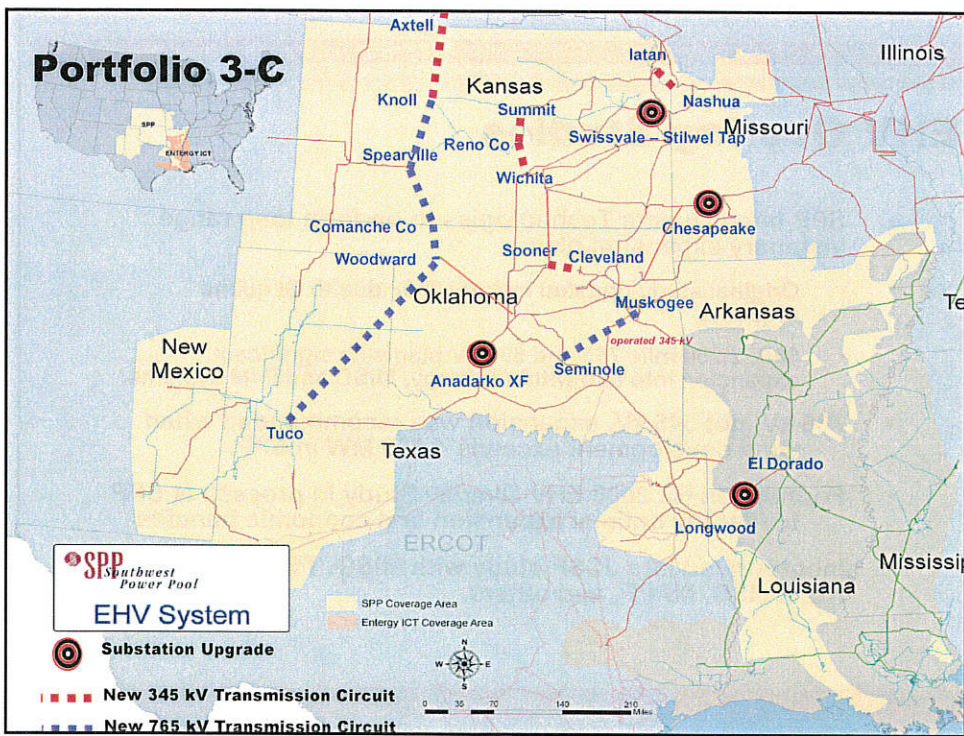
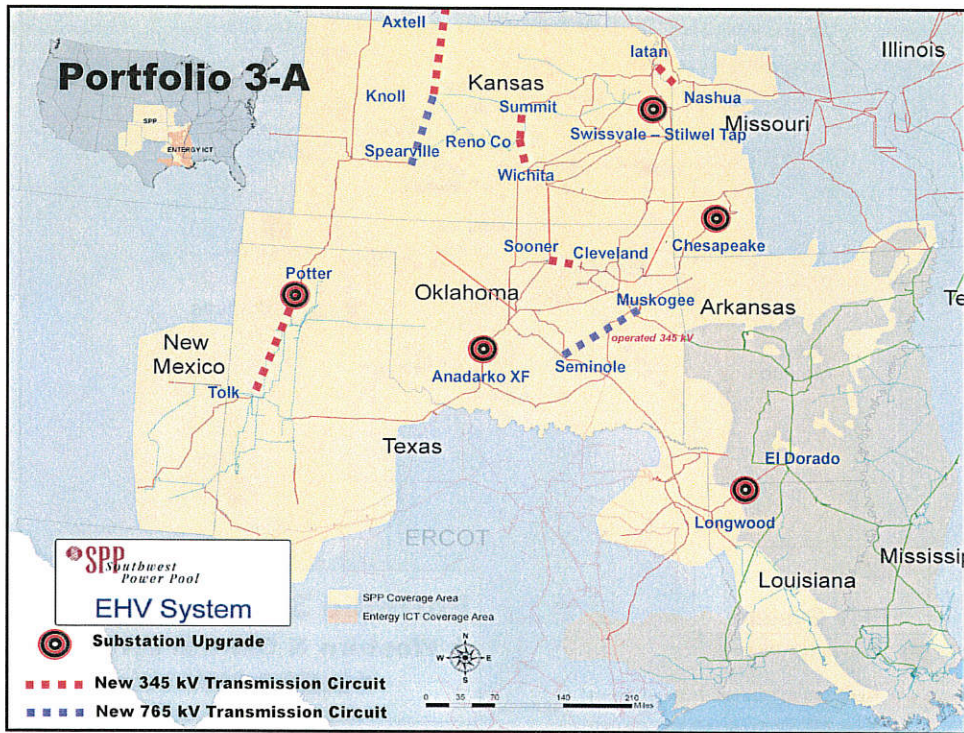
Balanced Portfolio

- Postage stamp cost allocations for a portfolio of Economic Upgrades which benefit SPP as a whole, and for which each zone realizes benefits in excess of their costs
- FERC Approved 10/16/08 in Docket ER08-1419
- Balanced Portfolio in final stages of development

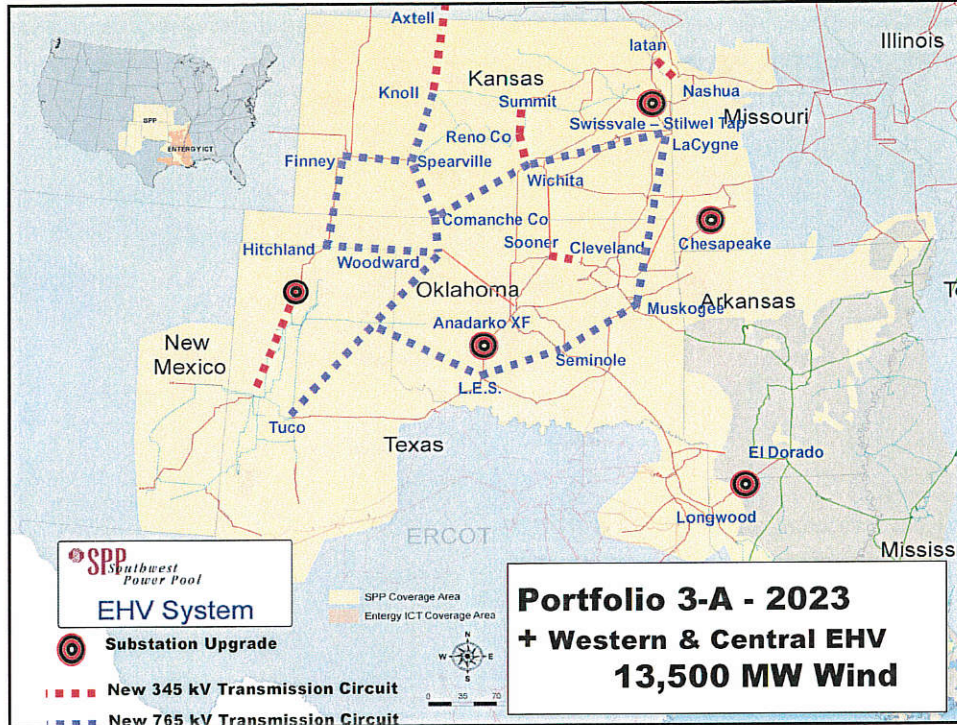
Balanced Portfolio

- On January 7, 2009 the CAWG reviewed plans for the near final updates to the two recommended draft Balanced Portfolios
- Evaluating 2 alternatives focusing on wind development impacts and associated 765 kV buildout of EHV Overlay on 3-C
- Results are promising in terms of aggregate and zonal B/Cs (ability to balance)
- Focusing on possible BP with 345 kV costing to minimize transfers with incremental cost for 765 kV construction handled external to BP

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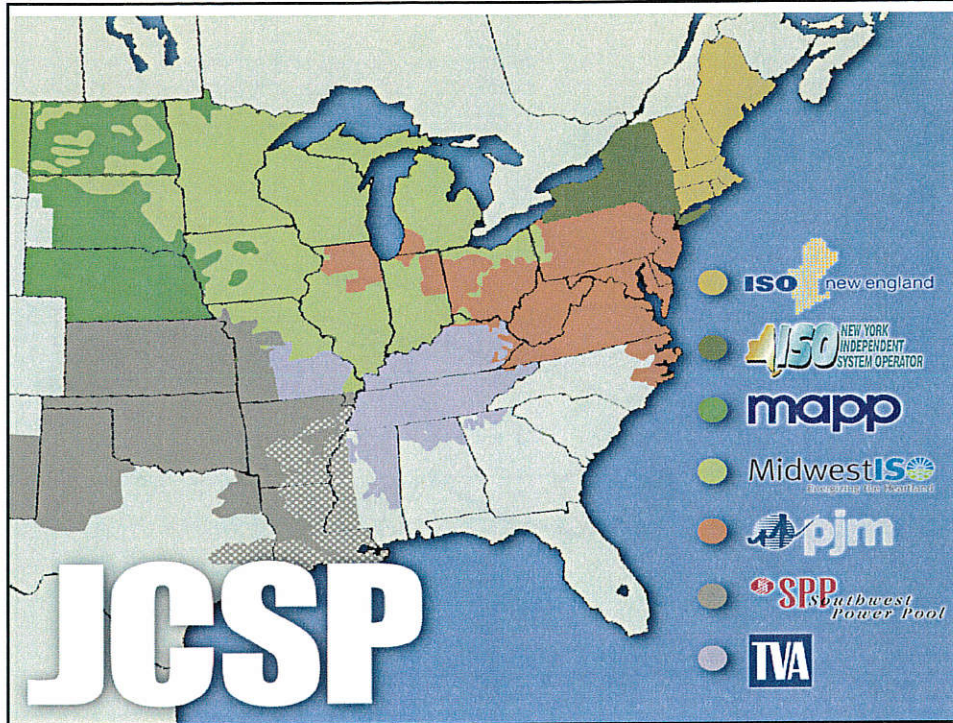


SOUTHWEST POWER POOL

EHV Overlay Studies

- SPP hired Quanta Technologies to perform long range visionary expansion plan.
 - Original study updated in early 2008 due to GI queue requests.
 - \$8B, 2,250 mile 765 and 500 kV plan with significant expansion into and within Entergy, MISO and PJM systems.
- 765 kV, not 345 kV, expansion was recommended when wind development exceeds 4,600 MW in SPP.
- Foundation for 2008 EHV Overlay Study in process at SPP to identify optimal expansion and economic benefits
- Incorporated into JCSP study with MISO, TVA, PJM, ISO-NE, NYISO, MAPP, and others.

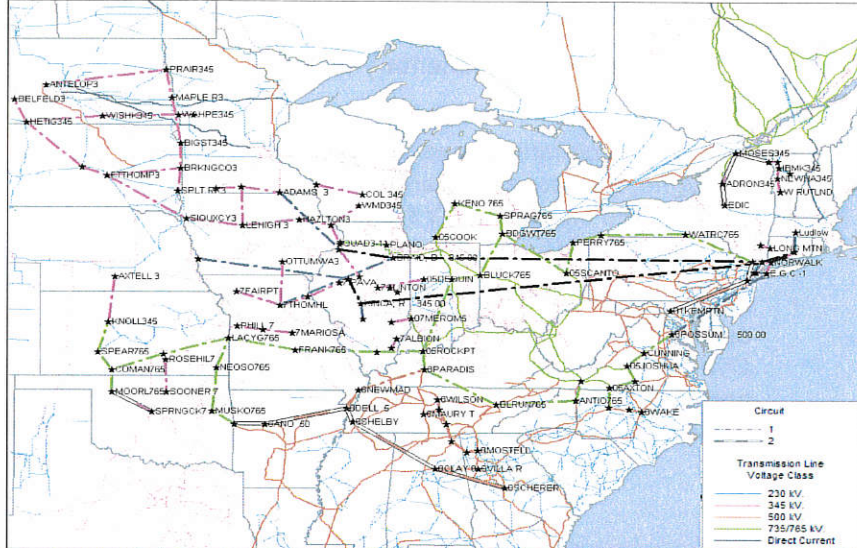
SPP.ORG 60



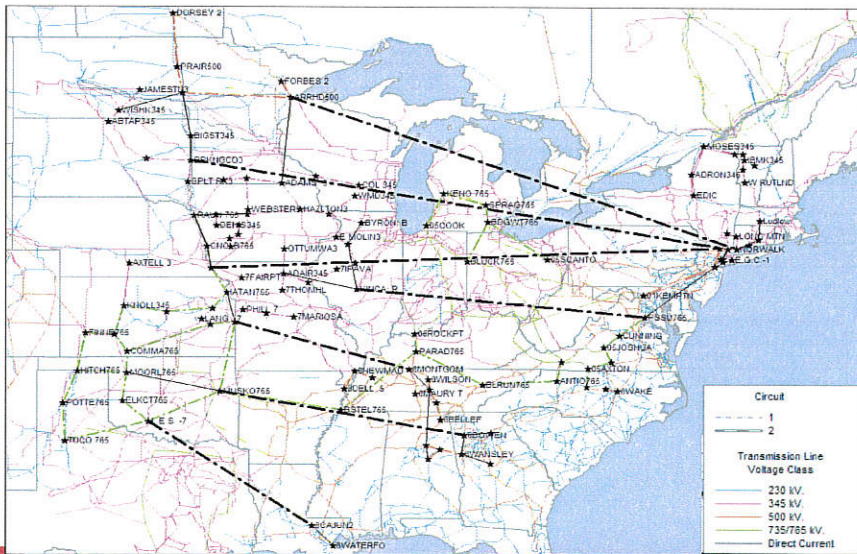
2007 - 2008 JCSP Overview

- Evaluate 1/1/08 RPS mandates in 26 states/DC as reference scenario, as well as a 20% National RPS scenario as part of 2008-2009 NREL/DOE Eastern Wind Integration & Transmission Study (EWITS)
- Studies will be used to demonstrate the value of bulk power transmission to harvest best wind resources in central plains for future scenarios.
- Check out www.jcspstudy.org

Reference Scenario – Current Overlay



20% Wind Scenario – Current Overlay



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SPP Implications

- JCSP plans are complimentary to EHV Overlay designs for SPP.
- Reference scenario shows need for 765 kV from LaCygne, KS across MO and IL to AEP in Western IN, plus double circuit 500 kV from Ft Smith, AR across Entergy and TVA to SoCo.
- 20% Wind Scenario has 3 - 800 kV HVDC terminals in central and southern plains sourced from 765 kV EHV Overlay in SPP at Lawton Eastside & Muskogee in OK, and LaCygne KS with another 800 kV HVDC terminal north of KC near Omaha, NE.

JCSP Transmission Results / Costs

Cost per Mile Assumption							
	345 KV	(2) - 345 KV	500 KV	(2) - 500 kV	765 KV	DC - 400 kV	DC - 800 KV
2024\$	2,250,000	3,750,000	2,875,000	4,792,000	5,125,000	3,800,000	6,000,000

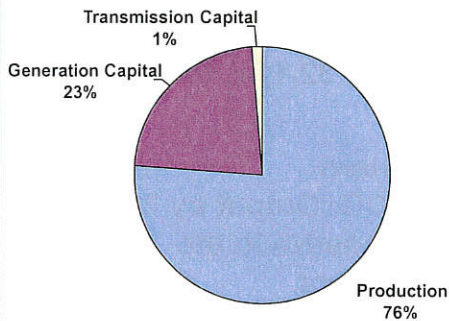
Estimated Line Mileage Summary (Miles)								
	345 KV	(2) - 345 KV	500 KV	(2) - 500 kV	765 KV	DC - 400 kV	DC - 800 KV	Total
Reference	3,329	292	508	946	3,118	282	2,400	10,875
20% Wind	2,042	193	864	279	3,977	0	7,582	14,937

Estimated Cost Summary (Millions of 2024\$)								
	345 KV	(2) - 345 KV	500 KV	(2) - 500 kV	765 KV	DC - 400 kV	DC - 800 KV	Total
Reference	9,363	1,371	1,825	5,668	19,975	1,698	14,400	54,298
20% Wind	5,742	905	3,106	1,671	25,478	0	45,492	82,394

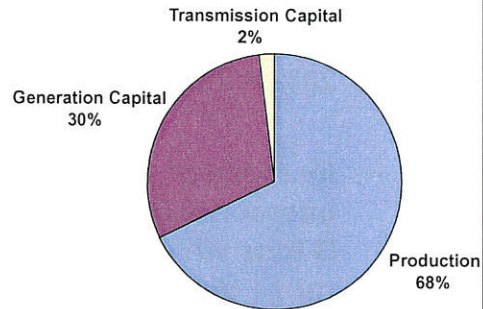
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Cost Perspectives

Reference Future Cumulative
Costs through 2024



20% Wind Future Cumulative
Costs through 2024



Benefit to Cost Ratios are Impressive

- Assuming an 15% annual carrying charge rate and existing plans, the B/C for the reference and 20% Wind scenarios are roughly 1.4 and 1.0, respectively.
- Economic models are showing annual adjusted production cost savings in either scenario in excess of \$10B.

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Estimated CO₂ Implications by Scenario

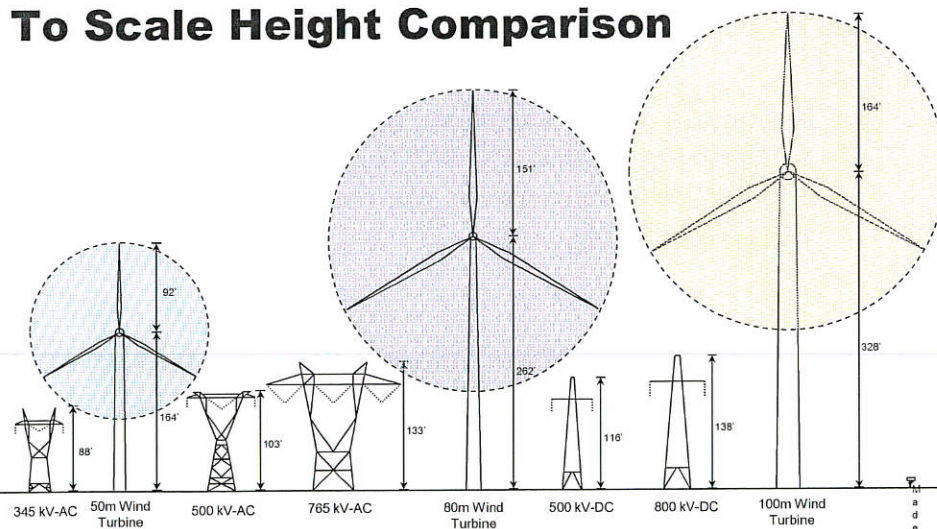
- 2008 – 2024 Cumulative CO₂ Output

Reference Future (5% Wind): 34.98 B tons

20% Wind Future: 32.11 B tons

- Increase of 15% Wind in Eastern Interconnection will reduce CO₂ Output by 2.87 B tons which some would monetize in the range of tens of billions of dollars

To Scale Height Comparison



Produced by Midwest ISO

2009 – 2012 Work Plan

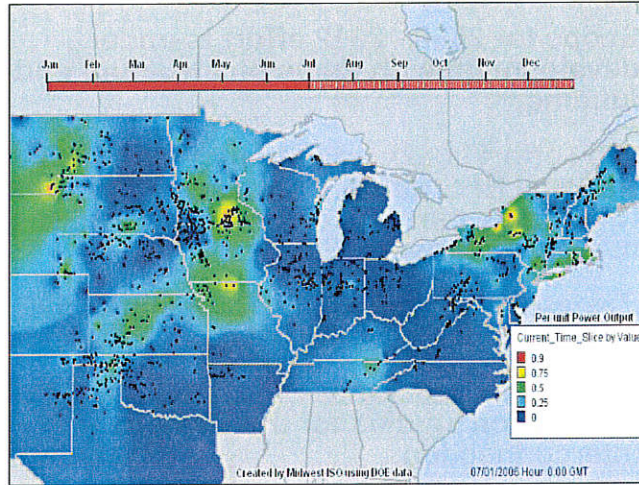
- Scope for 2009 - 2012 effort is under development with focus on structure and funding.
- 2009 effort is expected to include a 10% National RPS future, as well as other futures to evaluate carbon constraints, increased nuclear expansion, etc.
- Eastern Interconnection Transmission Assessment Group (EITAG) being proposed.
- DOE is anxious for JCSP/EITAG to take over congestion studies for the Eastern Interconnection.

What's a 20% National RPS mean to SPP?

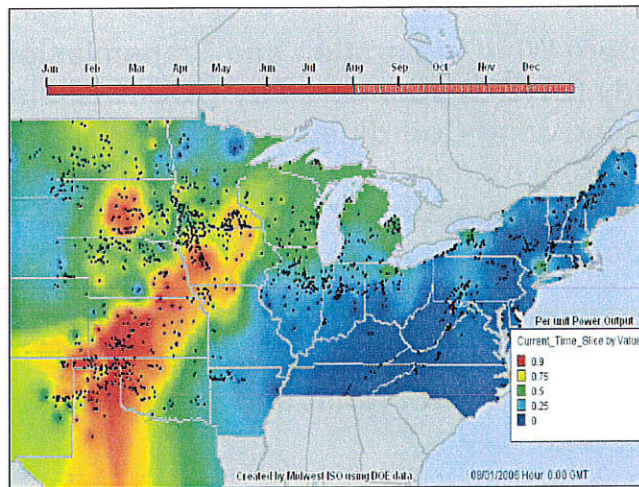
- Eastern Wind Integration and Transmission Study (EWITS) sponsored by DOE/NREL is refining Joint Coordinated System Plan 2008 (JCSP'08) models to investigate transmission needs and operational impacts for a 20% National RPS
- Latest projections show 91 GW of incremental wind development in SPP with 66 GW in the traditional SPP footprint and another 25 GW in Nebraska

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July 1 2006 HE 0100 Wind Profile



Aug 1 2006 HE 0100 Wind Profile

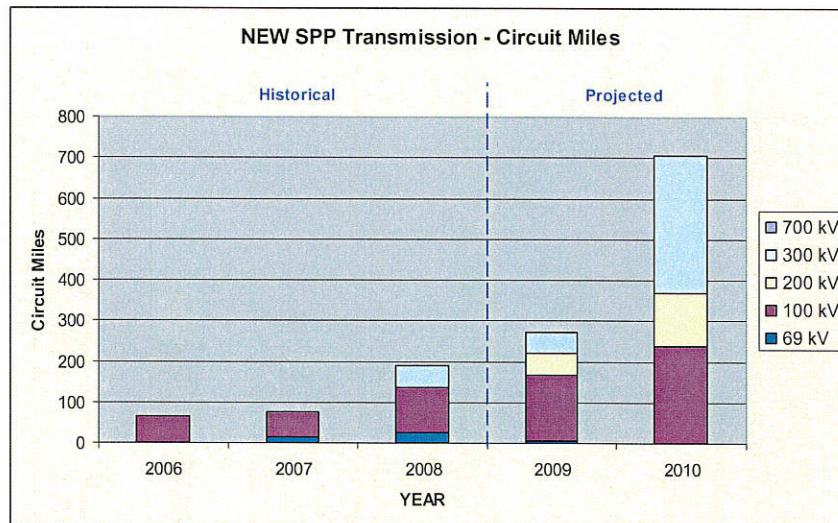


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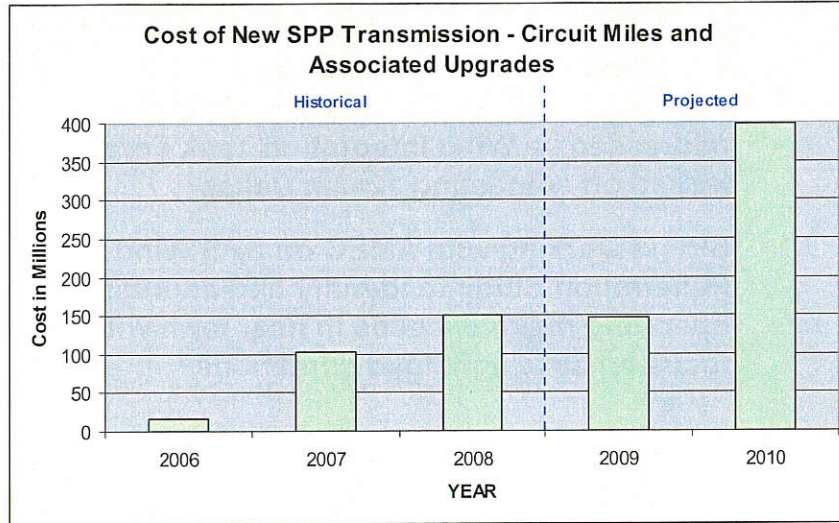
Wind Integration / Penetration

- Concerns about operational issues associated with wind integration must be addressed => Wind Integration Task Force kicked off at meeting 12/4 in Dallas
- SPP is working with AMEC on SPS Wind Penetration Study to identify and address operating reserve issues in near term with focus on 2010 light load conditions

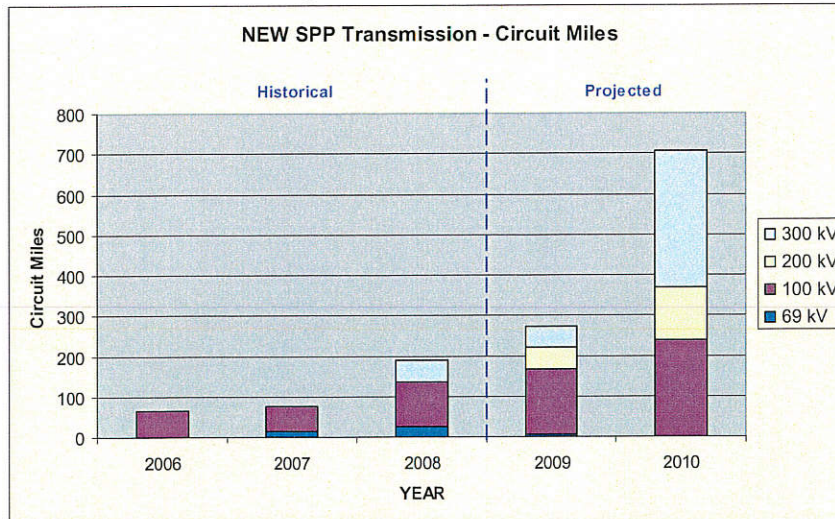
SPP is Building Transmission



Transmission Expansion - Costs







Transmission Expansion - Miles



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Cost Allocation

SOUTHWEST POWER POOL 		
 Reliability	 Economic	 EHV
Base Plan Funding 33% / 67%	Balanced Portfolio Postage Stamp	Postage Stamp
Criteria or Designated Resource	Benefits / Cost ≥ 1	
Transmission	345 kV and above	765 kV
2005	Accepted on 10/16/08	Work in Progress

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PROJECT TYPE	FUNDING		
	Direct Assigned	33% / 67%BPF	PostageStamp
Aggregate Studies (Transmission Service) *	X	X	
Regional Reliability *	X	X	
Generation Interconnection *	X		
Balanced Porfolio *			X
EHV Overlay in SPP			X
Beyond SPP			X

* included in STEP

SPP Today

- a. Regulatory Scene - President, Congress, RSC, CAWG
- b. Support of Regulators and Members at the State Level
 - Need for Transmission
 - Policy Development
 - FERC Dockets - # 433, State Proceedings - # 58
- c. Wind

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RSC & CAWG

	Regional State Committee (RSC)	Cost Allocation Working Group (CAWG)
Arkansas	Chairman Suskie	Sam Loudenslager
Kansas	Commissioner Moffet	Larry Holloway/Tom DeBaun
Oklahoma	Commissioner Cloud	Bob Vandewater
Missouri	Chairman Davis	Mike Proctor/Adam McKinnie
New Mexico	Commissioner King	Stacy Starr-Garcia
Texas	Chairman Smitherman	Christine Wright/Richard Greffe

RSC Responsibilities

The RSC has primary responsibility for determining regional proposals and the transition process in the following areas:

- a) Whether and to what extent participant funding will be used for transmission enhancements
- b) Whether license plate or postage stamp rates will be used for the regional access charge
- c) FTR allocation, where a locational price methodology is used
- d) The transition mechanism to be used to assure that existing firm customers receive FTRs equivalent to the customers' existing firm rights

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SPP Strategically

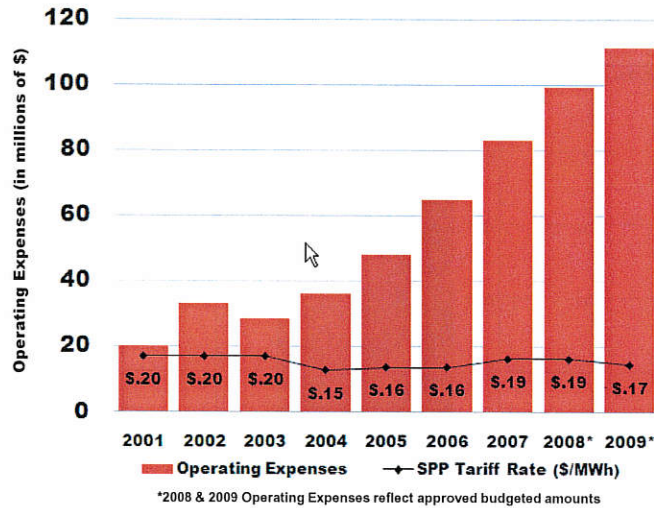
- A. Communication and Education**
- B. Membership Development**
- C. Market Development**
- D. Transmission Expansion**
- E. Regional Entity**

SPP Today (continued)

- d. Seams Agreements - Operations, Planning, Cost allocation**
- e. Nebraska**
- f. Improvements to the Aggregate Study and Generator Interconnection Processes**
- g. SPP's Budget**

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SPP Expenses: 2001-2009

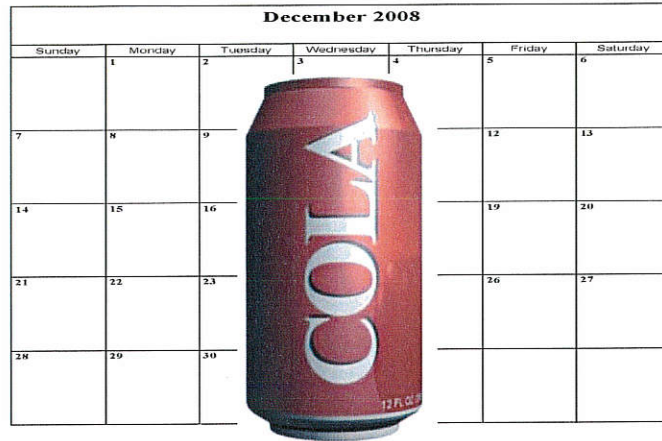


Current Issues

1. Reliability
2. Renewables
3. Demand Response and Energy Efficiency
4. Planning
5. National Energy Policy
6. Education

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“A can of coke per month.”



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