



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



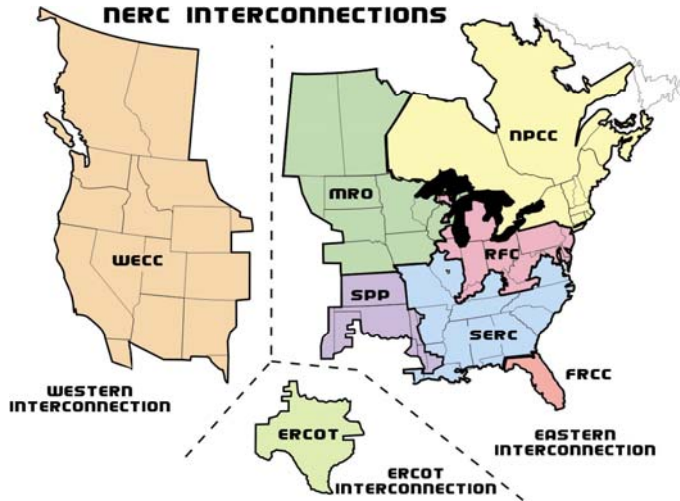
Expansion Planning and Cost Allocations

Transmission Summit 2010

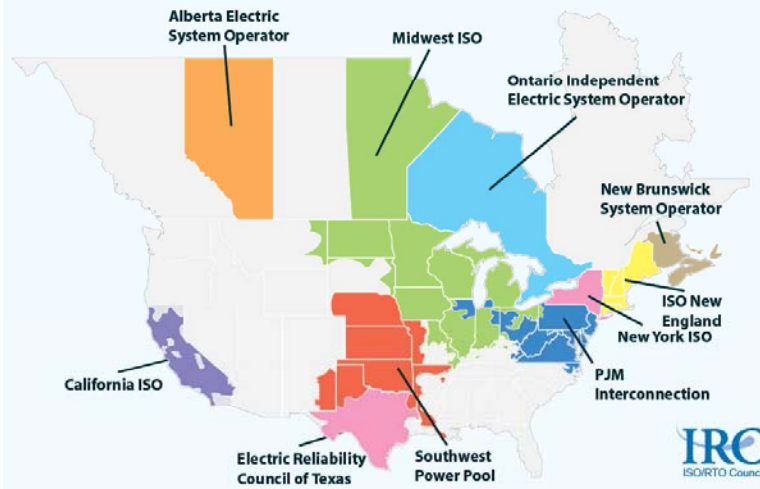
Sweetwater, TX

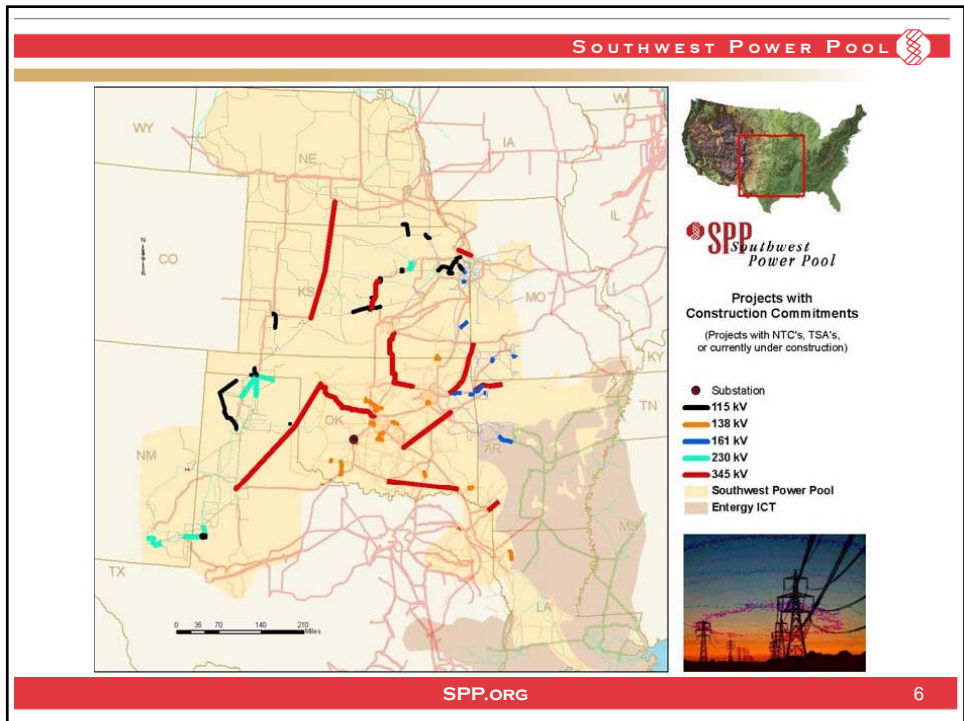
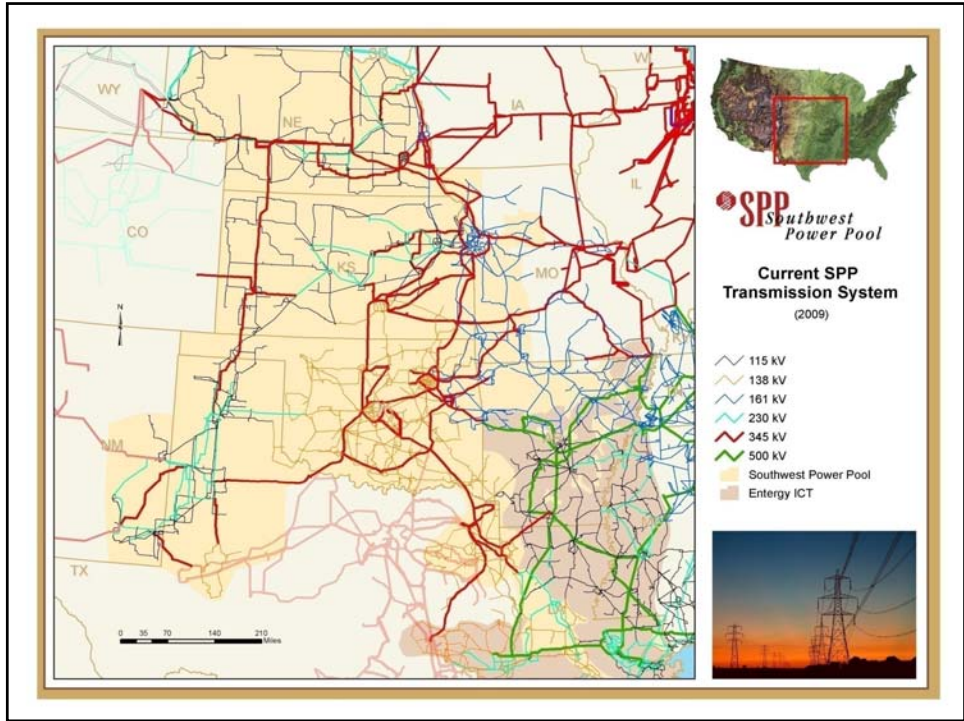
January 15, 2010

3 Interconnections / 8 NERC Regions



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

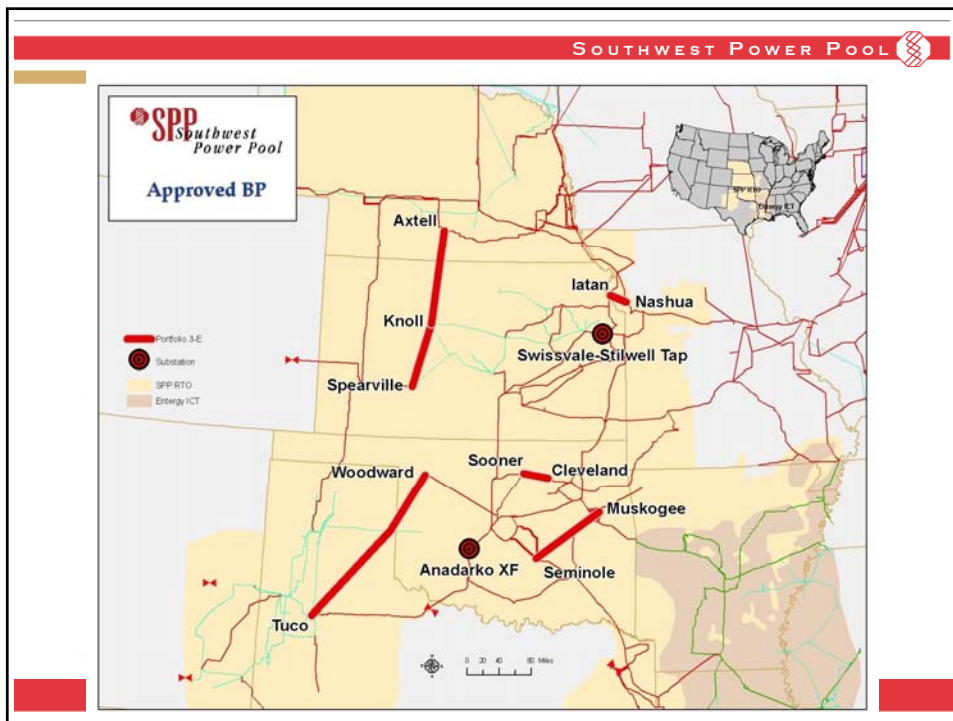




Planned Transmission over last 3 years

2009 STEP	2008 STEP	2007 STEP	Upgrade Type
\$540	\$320	\$290	Transmission Service Request and Generation Interconnection Service Agreements
\$2,110	\$880	\$720	Reliability - Base Plan
\$660	\$800	\$640	Reliability - Other
\$320	\$620	\$460	Sponsored Upgrades
\$770			Balanced Portfolio
\$60	\$60	\$90	Interregional Coordinated Upgrades
\$4.46B	\$2.7B	\$2.2B	Appendix A - TOTAL

Has filed Service Agreement or is BOD-approved



RSC is Key Success Factor for SPP

- **Regional State Committee (RSC) is responsible for cost allocation, as well as supply adequacy, for SPP**
- **Cost Allocation Working Group (CAWG) reports to RSC and focuses on recommendations on regional and zonal cost allocations for approved SPP projects**

Who pays for transmission now?



<i>Type</i>	Reliability	Economic
<i>Purpose</i>	Keep lights on	Reduce congestion with benefit/cost ≥ 1
<i>Also Called</i>	Base Plan Funding	Balanced Portfolio
<i>Funded By</i>	Region - 33% Impacted zone- 67%	Shared regionally (postage stamp)
<i>Voltage</i>	All	345 kV+
<i>Implemented</i>	2005	2009

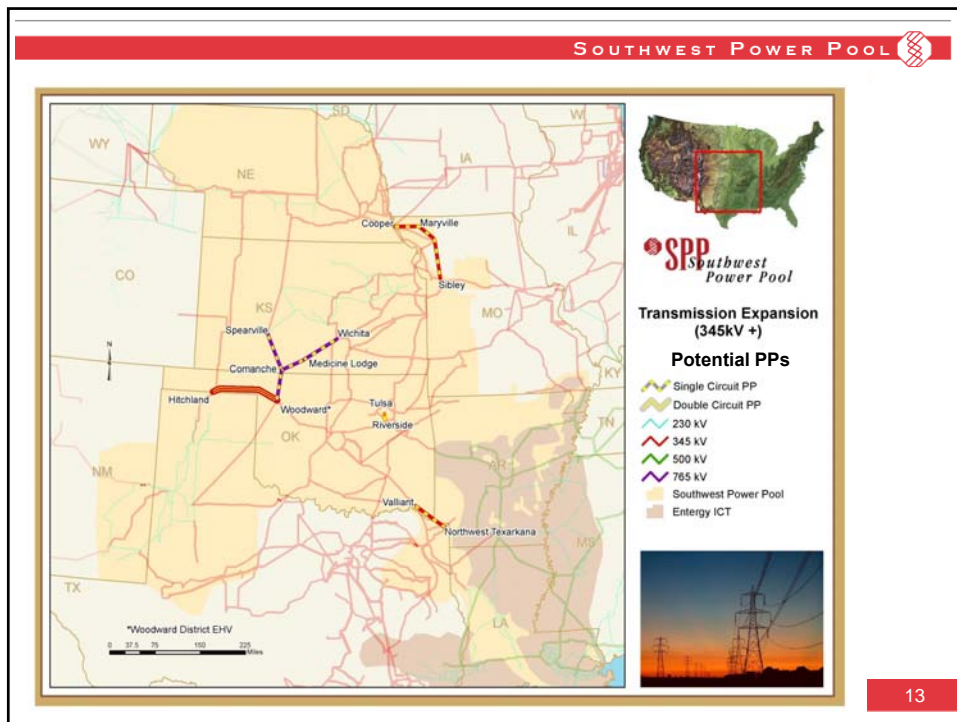
Synergistic Planning Project Team

- **Need to change planning and tariff studies processes beyond incremental least cost reliability solutions, then assuring self-funded economic upgrades would provide no harm &, at the same time, trying to get customers to agree to interconnection and delivery services in studies that were almost never ending with cost assignments that seemed unreasonable.**
- **Led to Integrated Transmission Plan (ITP) which has been approved and is in process of being implemented with Priority Projects (PPs) being evaluated now at 765 and/or 345 kV**

Need Simple and Fair Cost Allocation

- **At October meetings, RSC and BOD approved Highway/Byway rate design**
 - Highway for 300 kV+ with cost spread across region based on LRSs
 - Byway for facilities below 300 kV with cost split 1/3 region, 2/3 zone for projects from 100 – 299 kV and cost spread to zone for projects below 100 kV





Strategic & Other Benefits of Transmission

- **SPP staff is working with KEMA and its Strategic Planning Committee and Economic Studies Working Group to quantify fuel diversity and dynamic benefits of EHV transmission expansion.**
- **Preliminary results indicate that other benefits for transmission expansion are at least equivalent to, if not an ORDER OF MAGNITUDE higher than Adjusted Production Cost values which have traditionally been used to justify economic expansion projects.**

Future Plans Must Mitigate Stranded Investment

- **“Right Sizing” projects in SPP is not new, witness Stranger Creek – Platte City 161 kV, two Cap Rock 230 kV ties, Hoskins – Shell Creek 230 kV, etc. that were built for ultimate 345 kV operation.**
- **In many cases, joint projects have been driven by lowest common denominator solutions to ensure “least cost, used and useful” additions**
 - **Spearville – Mullegren – Knoll 230 kV was originally proposed at 345 kV**
 - **JEC Outlet**

Deferred / Displaced Reliability Projects May be Difficult to Identify

- **SPP has authorized SPS to build 35 mile 230 kV line from Hitchland to N. Perryton in NE Texas Panhandle to meet local reliability needs**
- **PP includes double circuit Hitchland – Woodward District EHV 345 kV which parallels route of approved Hitchland – N. Perryton (Ochiltree) 230 kV line to large extent**
- **Challenges in implementing collaborative, regional solutions that also meet local needs must be addressed and facilitated by SPP staff to extent its supported by stakeholders and policy makers**

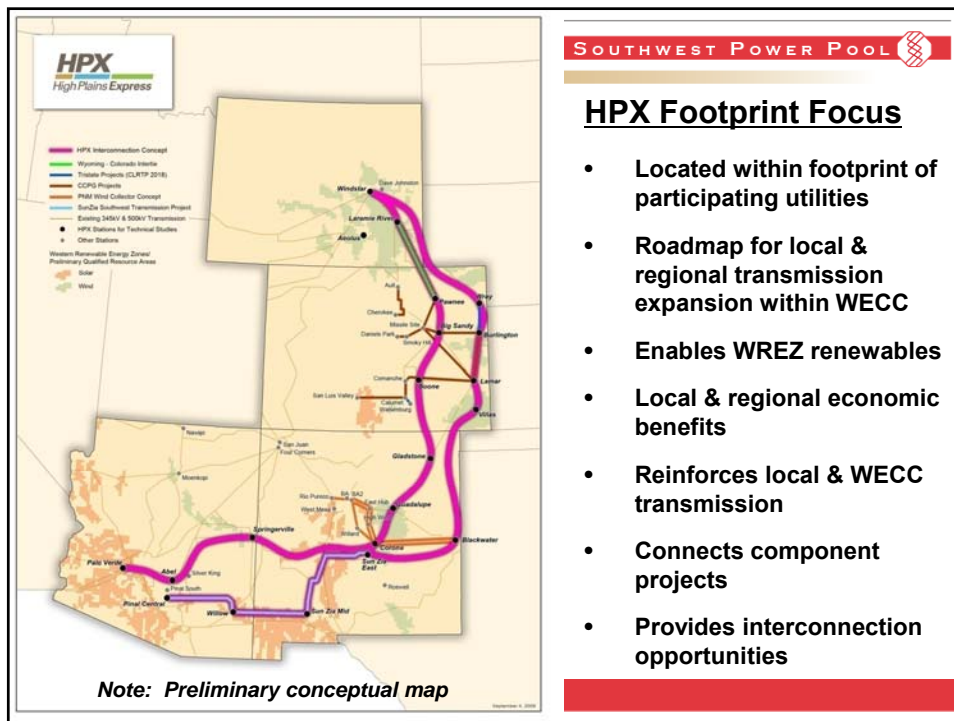
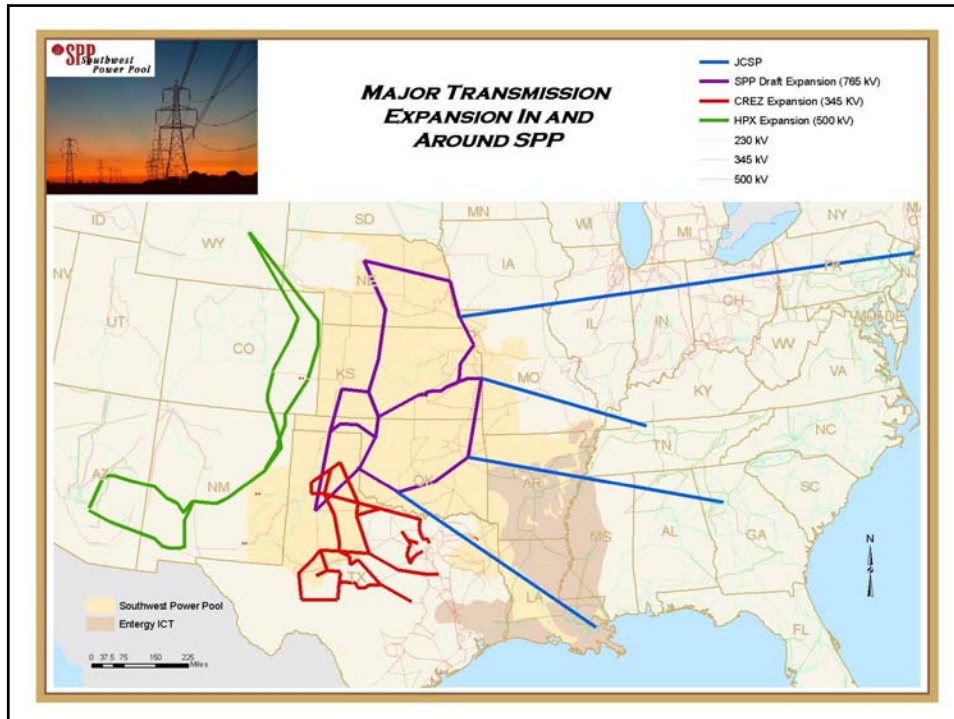
Other Thoughts...

The risk to overbuilding an EHV transmission project if it is a product of a regional planning process is hard to imagine, relative to the cost and potential stranded investment of underbuilding future transmission.

Avoided costs can be significant. Planners must consider land use impacts, wildlife fragmentation, etc. in initial plans to avoid corridor fatigue where Rights of Ways are, or will become, a major issue in terms of costs and time.

Next Steps Regarding Other Benefits

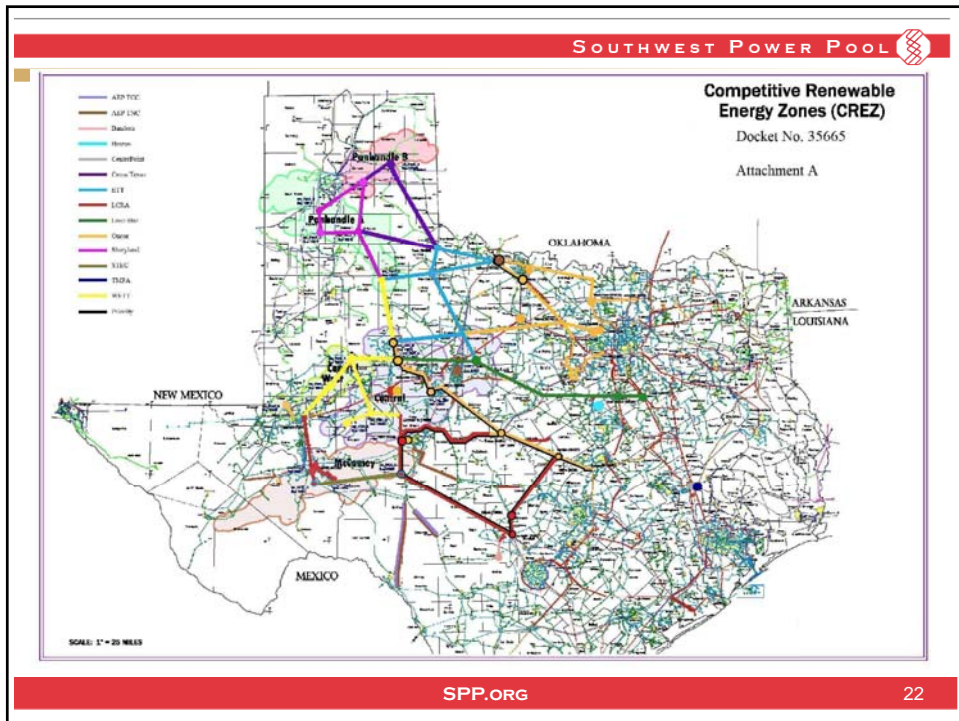
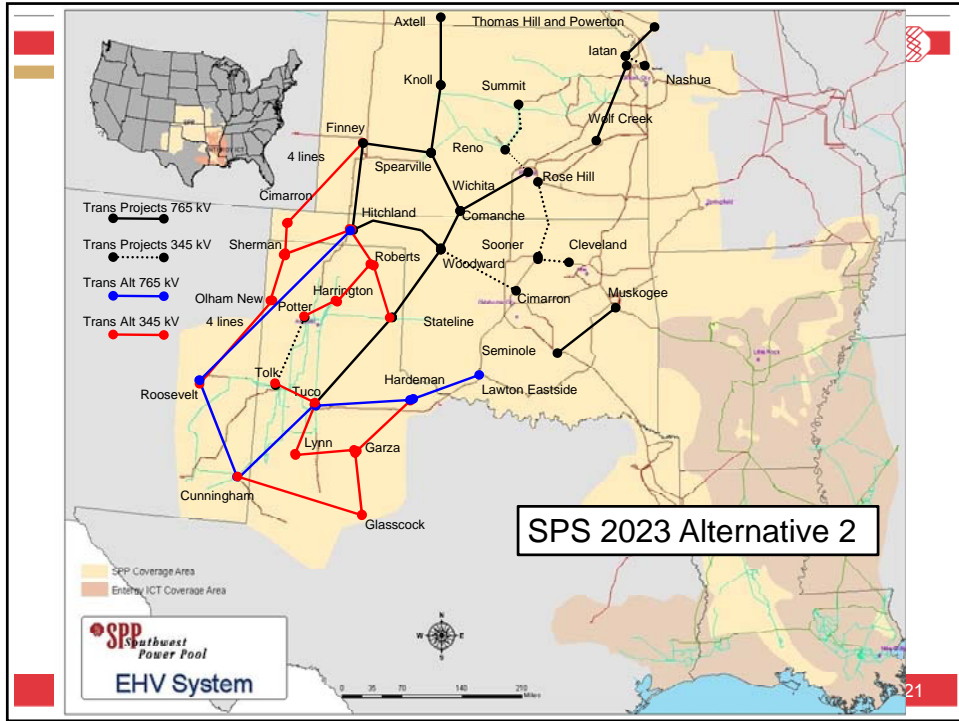
- **Get stakeholder and policy maker support for work to date and incorporate approved benefits into future planning**
- **Continue to refine and expand strategic and others benefits of EHV transmission within SPP and beyond**
 - Unusual and extreme events
 - Competitive fuel markets and future resource options

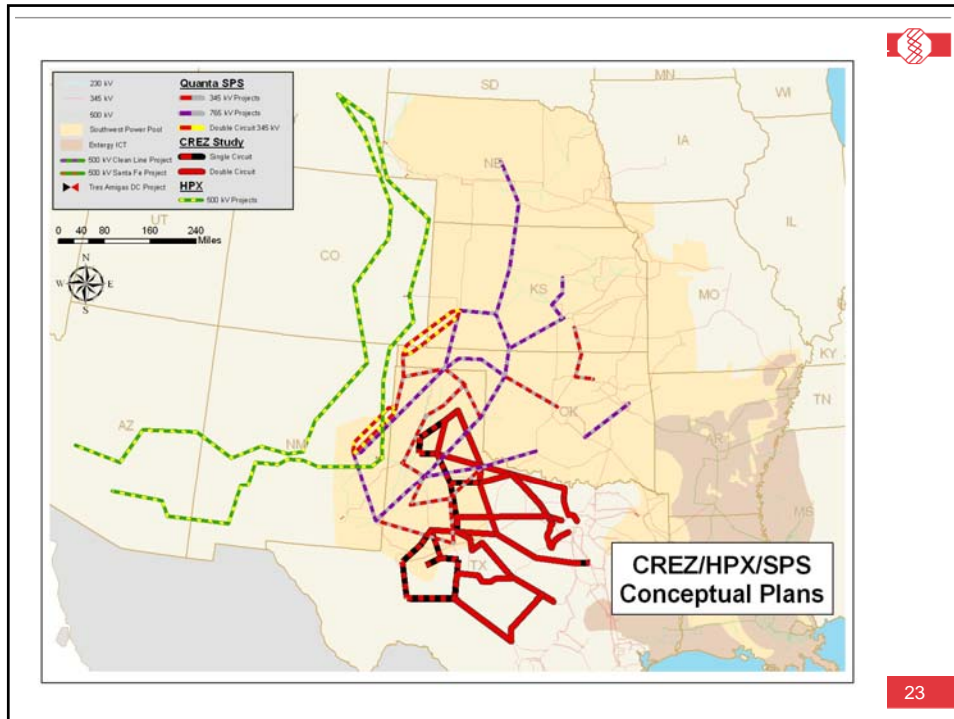


SOUTHWEST POWER POOL

HPX Footprint Focus

- Located within footprint of participating utilities
- Roadmap for local & regional transmission expansion within WECC
- Enables WREZ renewables
- Local & regional economic benefits
- Reinforces local & WECC transmission
- Connects component projects
- Provides interconnection opportunities





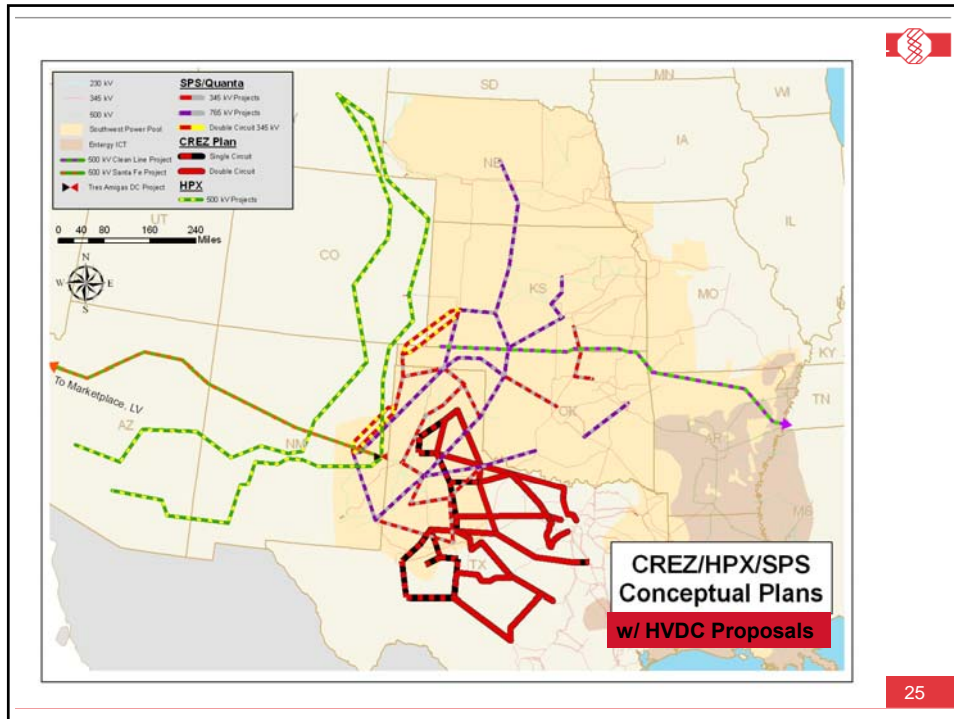
SOUTHWEST POWER POOL


Other Opportunities In Process

- **Merchant activities in/around SPP are noteworthy and may need to be part of long range plans**
 - **Proposed Santa Fe 500 kV HVDC from SPP / WECC to AZ, NM and CA**
 - **Proposed Tres Amigas Super Station (TASS) 5 GW Superconductor hub between WECC, SPP and ERCOT, expandable to 15 -20 GW**
 - **Proposed Plains and Eastern Clean Line dual 500 kV HVDC from Western OK/KS to TVA**
- **While transmission projects are making headlines, all these proposed HVDC projects require robust EHV networks**

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SOUTHWEST POWER POOL 

Interstate Cost Allocation Observations

- **Unprecedented levels of cooperation and coordination among transmission providers, regulators, and stakeholders are critical.**
 - MISO/SPP JOA Section 9.4.3 addresses cost allocation, but is little more than a placeholder with no specifics, timelines, etc.
- **“Right-sizing” future projects is key to mitigate stranded investments, but “least cost, used and useful” mandates may be stumbling blocks on the retail level, similar to lack of any mechanisms to fund right-sizing projects on wholesale level.**

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Inter-Regional Planning Works

- In the 1960s, 11 South Central Electric Companies (SCEC) built first 500 kV network in US with 345 kV extensions to facilitate 1,500 MW seasonal diversity interchange with TVA using common design standards
- The benefits of this expansion were grossly underestimated, e.g., planners and transmission / substation design engineers assumed only a fraction of 500 kV line thermal capacity would be needed and utilized in operations. Difficult to comprehend any line ever loading over 1,000 MVA

IEEE TRANSACTIONS ON POWER APPARATUS AND SYSTEMS

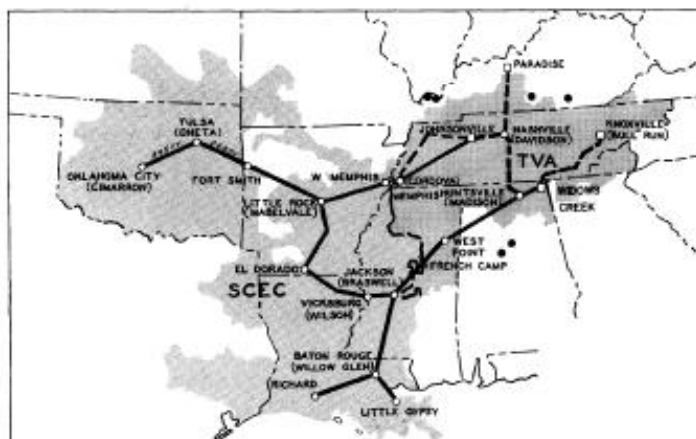


Fig. 1. TVA-SCEC transmission lines.

Cost Allocation Can and Must Be Resolved

- **...but we seem to be going backwards with respect to inter-regional and interconnection wide (let alone national grid) studies lately.**
 - **JCSP scope included cost allocation, but topic was not addressed**
 - **EIPC scope does not include cost allocation despite need expressed by several stakeholders**
- **Coordinated System Congested Flowgate Study with MISO, PJM, SPP and TVA is a good next step**

FERC AD09-8 Holds Promise

- **Diverse opinions on what is needed to improve the effectiveness of inter-regional planning and cost allocations. Comments and reply comments are posted at www.ferc.gov**
- **SPP suggestions may be viewed by many as being unnecessary and too aggressive, but let's start the dialogue on the merits of meaningful changes with milestones, default seams agreements, super-regional tariffs, etc.**
- **Doing nothing is a choice which may have significant costs and consequences...**



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