High Plains Regional Transmission Summit

Coordinating Transmission Projects Across State/RTO Lines

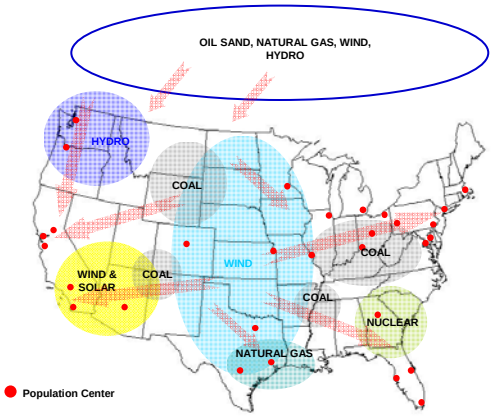
Kelly Harrison

Westar Energy

November 3, 2009

National Landscape

- Optimal use of resources constrained due to insufficient transmission infrastructure.
- Transmission backbone will enable the following:
  - Improved reliability
  - Improved stability
  - Renewable generation
  - Lower production costs
  - Lower system losses
  - Reduced environmental impact
  - Economic growth



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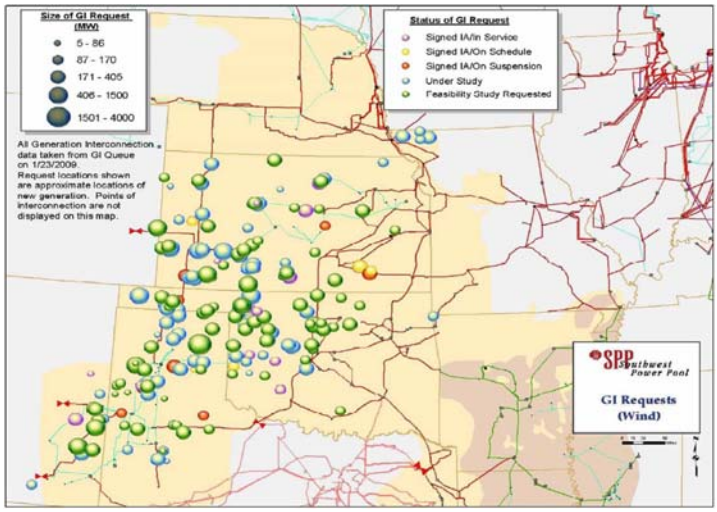
Map of the SPP Generator Interconnection Queue
(Wind Only - January 2009)



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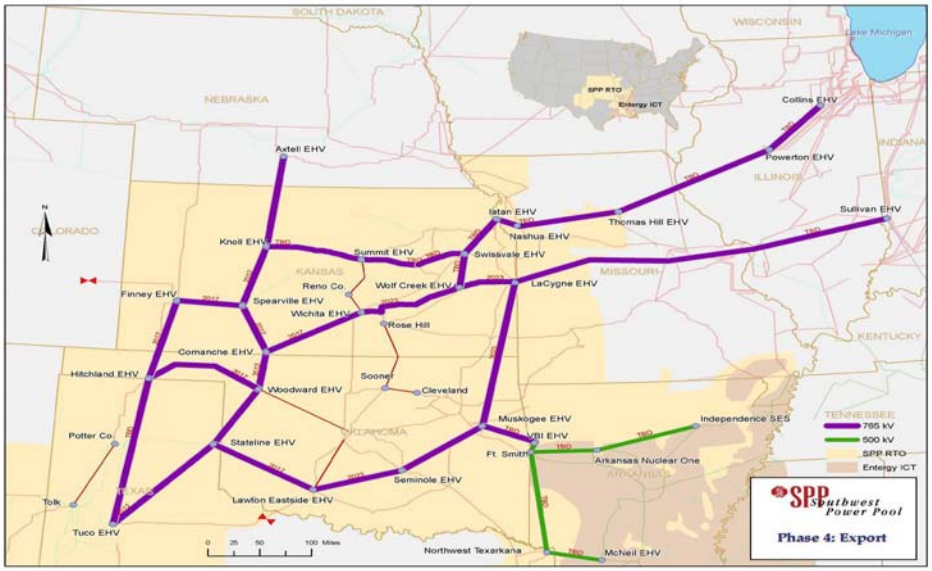
SPP EHV Overlay



Prairie Wind Transmission

A joint venture between Westar Energy and ETA

Prairie Wind Timeline

- ✔ JV formed
- ✔ Regional cost-benefit study
- ✔ FERC incentive approval
- ✔ KCC utility certificate – received October 5, 2009
- ✓ SPP approval of project – **January 26, 2010 ????**
- ✓ SPP regional rate authority – **1st or 2nd Qtr. 2010 ????**
- KCC siting application – 2nd Qtr. 2010
- Construction – 2011-2013

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Impediments To Progress

- Cost allocation
- Too much focus on wind
- Self interests

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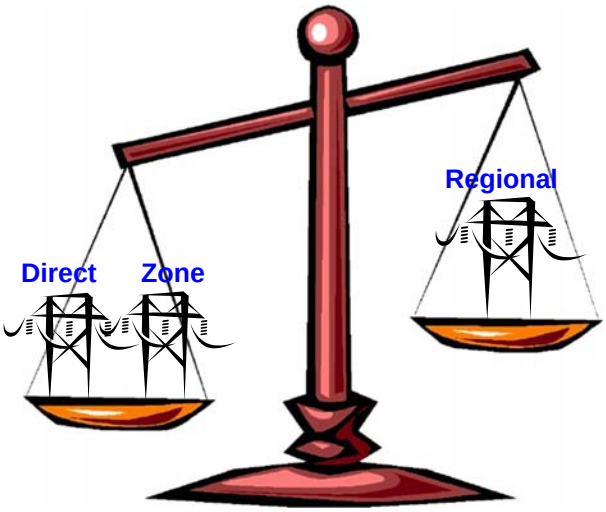
Current SPP Cost Allocation



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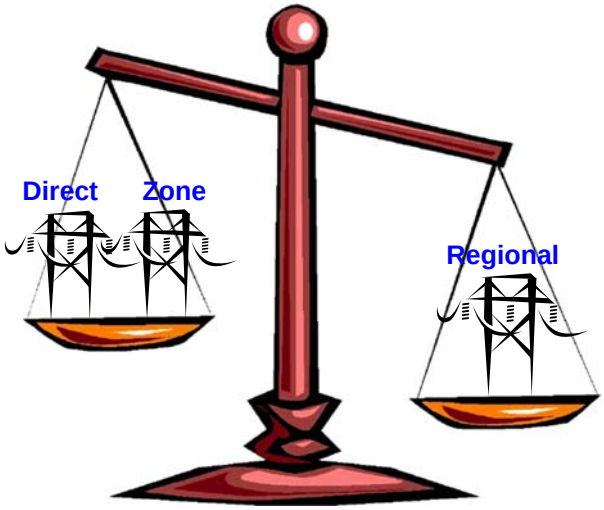
Desired SPP Cost Allocation



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Level Of Wind

- What are we solving for?
  - Current level of wind 3,000 MWs
  - 10% wind (7,000 MWs)
  - 20% wind (14,000 MWs)

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Level Of Wind

- The SPP should be planning for at least 10,000 MWs of wind
  - 3,000 MWs in operation
  - 6,800 MWs with signed Interconnect Agreements

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Self Interests

- We have all the wind and transmission we need
- Protection of market share for wind
  - Building at 345 kV caps the amount of wind that can be developed
- Increased wind results in lower prices for power marketers in some areas
- Increased wind brings challenges in operating the system
- 765 kV is too expensive

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What Next?

- **MORE STUDIES!!!!**

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Need A Long-Term Vision

- Benefits of a transmission backbone extend beyond wind
- 765 kV vs. 345 kV
  - Do we want to spend $500 / MW-mile (bundled 345 kV) to move energy with higher losses or,
  - $300 / MW-mile (765 kV) with half the losses
  - SPP staff has determined that 765 kV transmission is more cost effective if wind generation level is above 8,000-10,000 MWs
- We should be more concerned about the cost of under-building than over-building transmission

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