Interstate Transmission:
Opportunities and Challenges Ahead

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In the Past…

- Electrical demand was taken as a given, regardless of price
- System planning was done with the single overriding goal of meeting that demand within established reliability criteria
- Generation resources were incented through locational prices to locate in accommodation to the transmission system
- Planning was often company specific, rather than fully regional

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Today

- Price responsive demand and reliability are intertwined
- Environmental policy is not an afterthought but an equivalent goal to meeting reliability criteria
- Renewable resources are becoming a major part of our generation infrastructure, requiring deliverability and integration, not just RECs
- Regional and inter-regional planning have become essential

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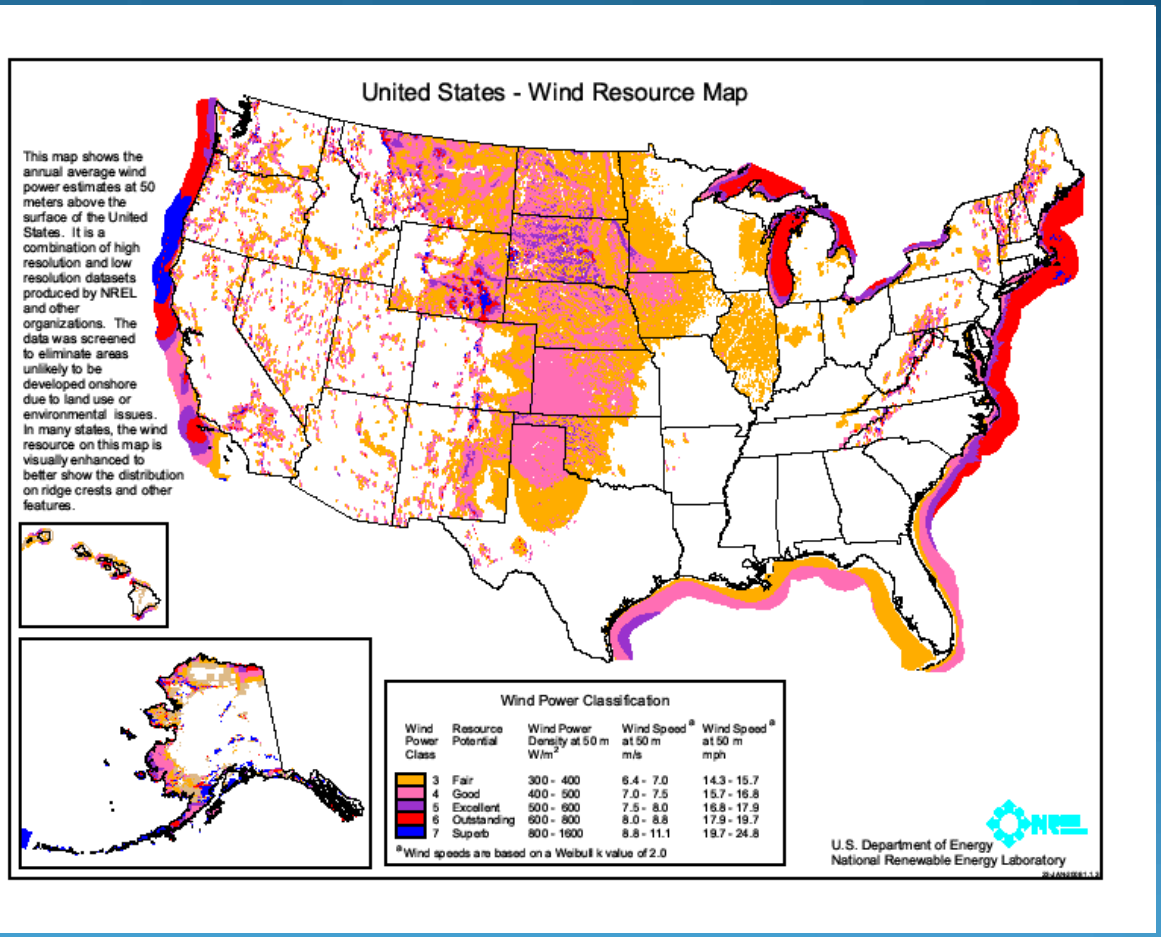
Challenges

- Transmission lines cross state borders and utility service area boundaries.
- Remote renewable resources will require new transmission infrastructure.



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More challenges

- "**Food Fight!!!**" - John Belushi (Animal House). The multi-party regional planning process is ill-suited to resolving cost allocation issues.

- "**The needs of the many outweigh the needs of the few, or even the one**" – Leonard Nimoy (The Wrath of Kahn). The tension between regional or even national priorities and localized impacts is not well served by ambiguous or ad hoc processes.

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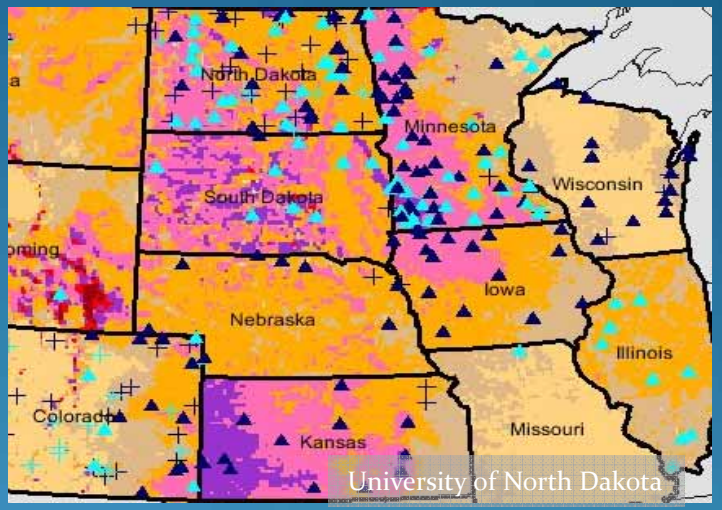
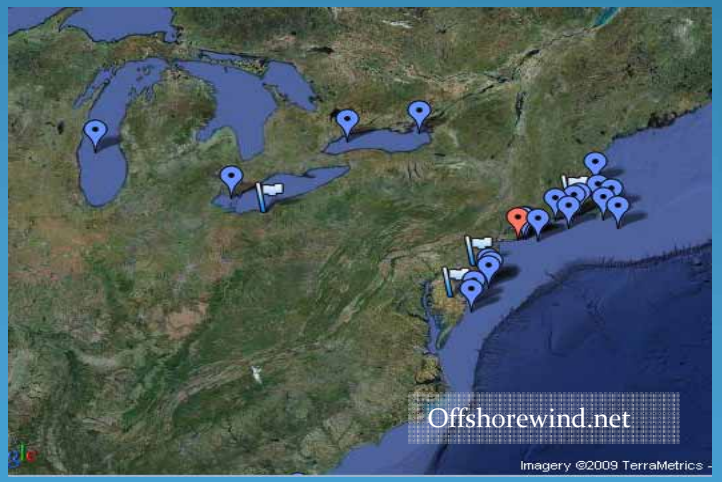
Where are the opportunities?

- Onshore: Wind in the Heartland. Wind resources in the upper Midwest should be delivered to urban load centers through a new "highway."
- Offshore: Wind in the Ocean. Coastal wind resources need an undersea path to coastal cities.





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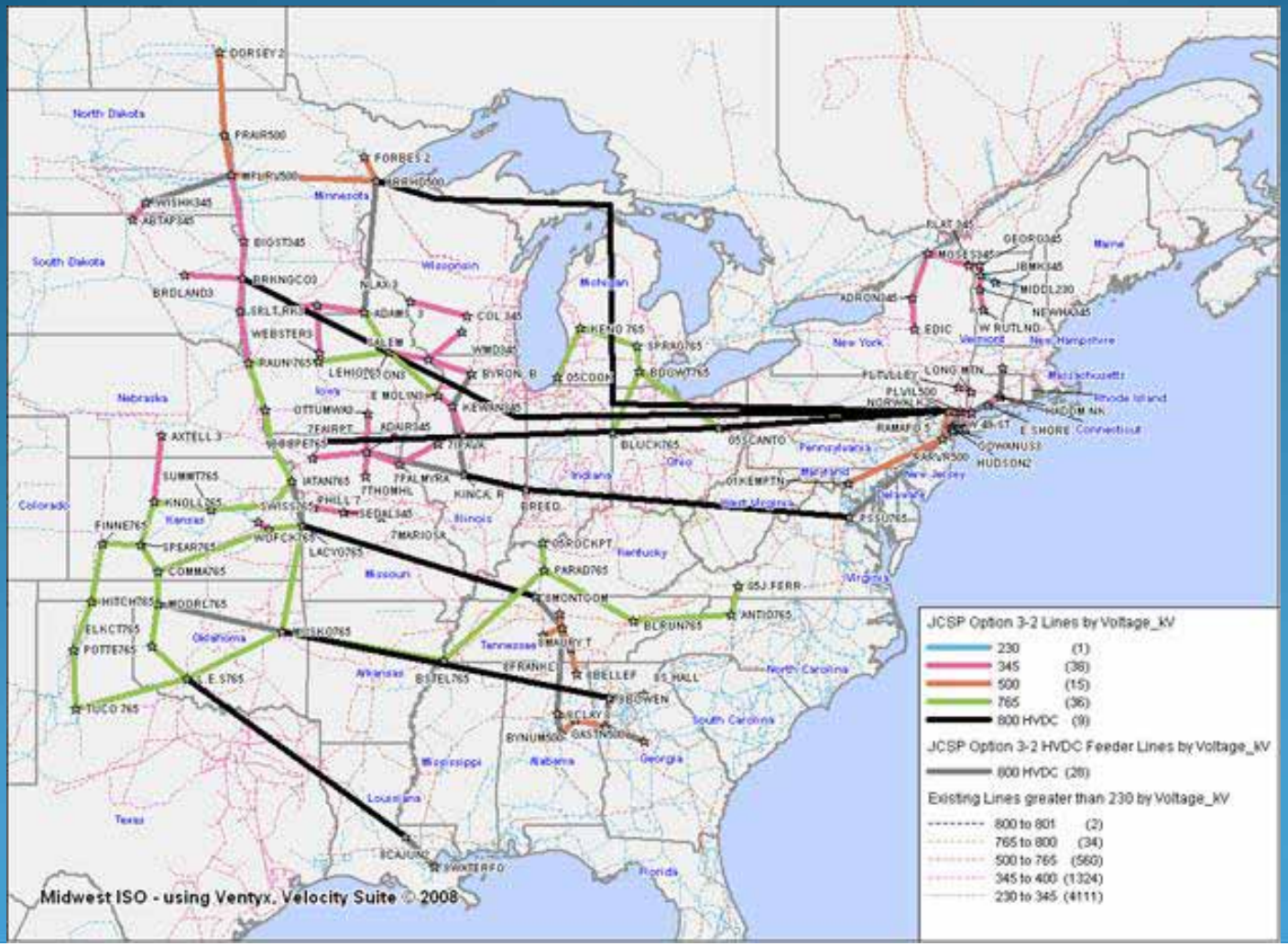
The proposed superhighway

"Skies filled with silver"



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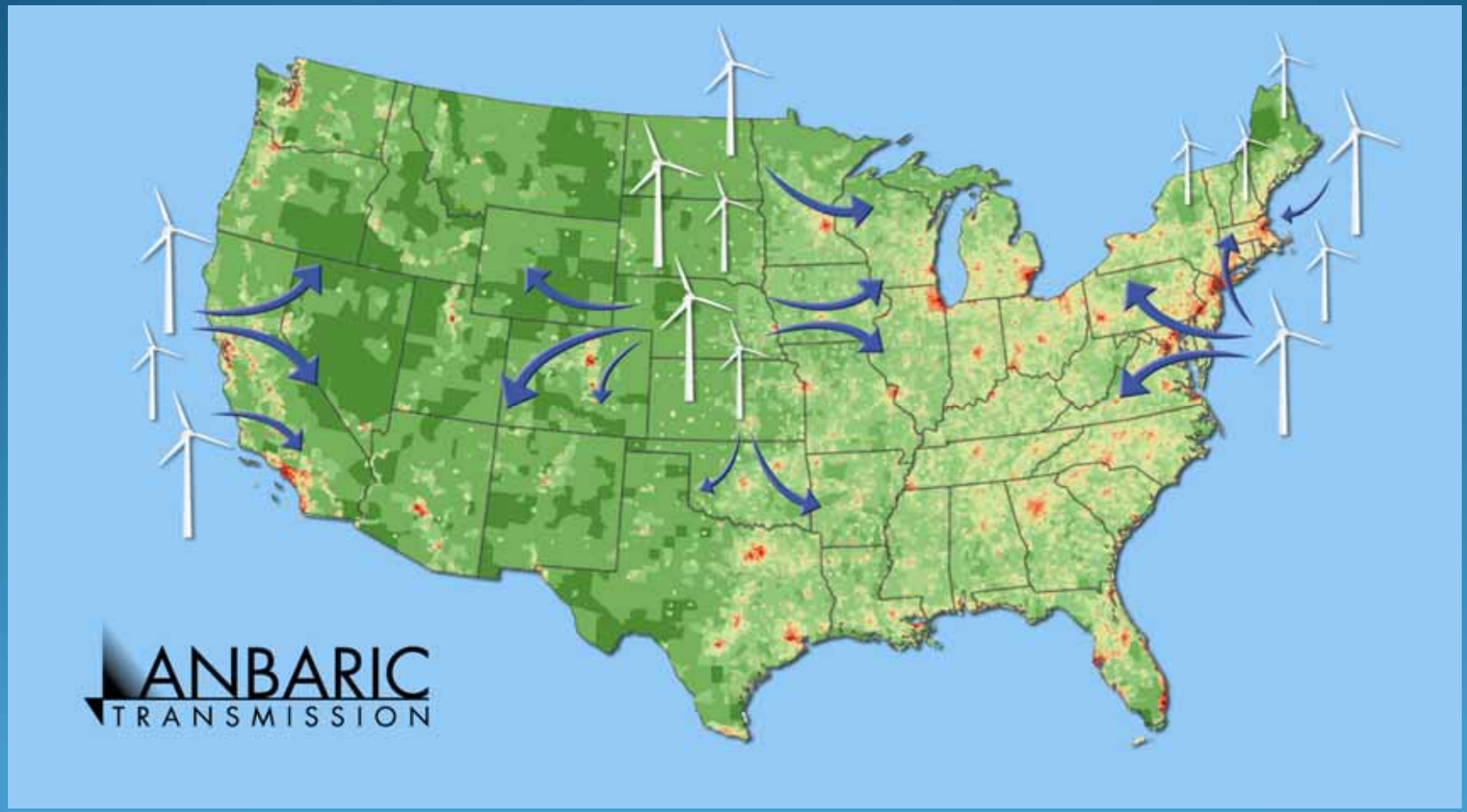
An alternative solution



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Combined wind and transmission development should be sequenced in order of least cost.

	Near Onshore	Offshore	Far Onshore
All in Cost	**$ 102.61**	**$129.91**	**$141.37**
Transmission	$15.28	$15.28	$45.85
Wind	$87.33	$114.62	$95.52
Assumptions			
Capacity Cost	$2,000	$4,500	$2,500
Capacity Factor	35%	60%	40%
Transmission ($/kw)	$1,000	$1,000	$3,000

Hypothetical combined development costs.

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Business Models

- Traditional. Regulated AC networks with cost sharing for high voltage upgrades and local responsibility for lower voltage facilities. This model will continue to dominate near term, but not forever.
- Contract. Contract-based solutions like Neptune and Hudson or HQ/NU/Nstar. This model is lowest risk to the consumer.
- Independent. Regulated facilities owned by ITCs with no distribution franchises. This model fits easily within regional network tariffs.

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Vision

- Enhanced regional planning that looks beyond state and utility boundaries
- Transmission planning reform that makes economy and environment equivalent and inter-related goals with reliability.
- Competitive procurement of long term supply contracts that support combined development of renewable generation and the transmission to deliver it cost effectively.
- Siting reforms that put incumbents and independents on the same footing

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