

Wyoming: Where Power Transmission & Generation Meet

Wyoming Infrastructure
Authority



J.M. Shafer
Member, WIA Board of Directors

**CCPG/WestConnect
Meeting**

**August 17, 2011
Westminster, CO**

*Given our vast resources,
we're the Energy Gateway
to the West*



INFRASTRUCTURE AUTHORITY
An Instrumentality of the State of Wyoming



Wyoming

- *Wyoming is #1 in total energy produced in the U.S.*
- *#1 in coal production—PRB coal is marketed in 37 states*
- *#2 in natural gas production*
- *#1 in uranium reserves*
- *#1 in developable Class 6 & 7 wind resource in the West*
- *In the last year, WY has added 2BCFD+ of gas pipeline capacity*
 - *El Paso's Ruby Line from Opal, WY to Malin, OR: 1.5 BCFD*
 - *TransCanada's Bison Line from NE WY to ND: .477 BCFD*
 - *MidAmerican's Kern River expansion (WY to CA): .145 BCFD*



Wyoming Infrastructure Authority

- *Created in 2004 by the Wyoming Legislature---*
<http://legisweb.state.wy.us/statutes/statutes.aspx?file=titles/Title37/T37CH5.htm>
- *Mission: diversify and expand the state's economy through improvements in the transmission grid*
- *Tools:*
 - *Can plan, finance, site, own, operate and otherwise promote transmission projects—model used contemplates plan & development only (i.e. no construction, ownership or operating role)*
 - *\$10 million venture account to develop projects*
 - *\$1 billion in bonding capability to help finance transmission projects*



Wyoming Infrastructure Authority

Structure:

- *Five (5) member Governor-appointed Board of Directors*
 - *Mike Easley, Chairman: CEO of Powder River Corporation*
 - *Kyle White, Vice-Chairman: VP of Regulatory and Governmental Affairs Black Hills Corporation*
 - *Bryce Freeman, Treasurer: Administrator of the Wyoming Office of Consumer Affairs*
 - *J.M. Shafer, member: Former executive with both Tri-State and Western Area Power Administration*
 - *Dave Sparks, member: Executive Vice President with TransCore*

- *Staff*
 - *Loyd Drain, Executive Director*
 - *Holly Martinez, Administrative Manager*
 - *Tom Dennis, Cassidy & Associates; and other Consulting Support*



Transmission Authorities in the West

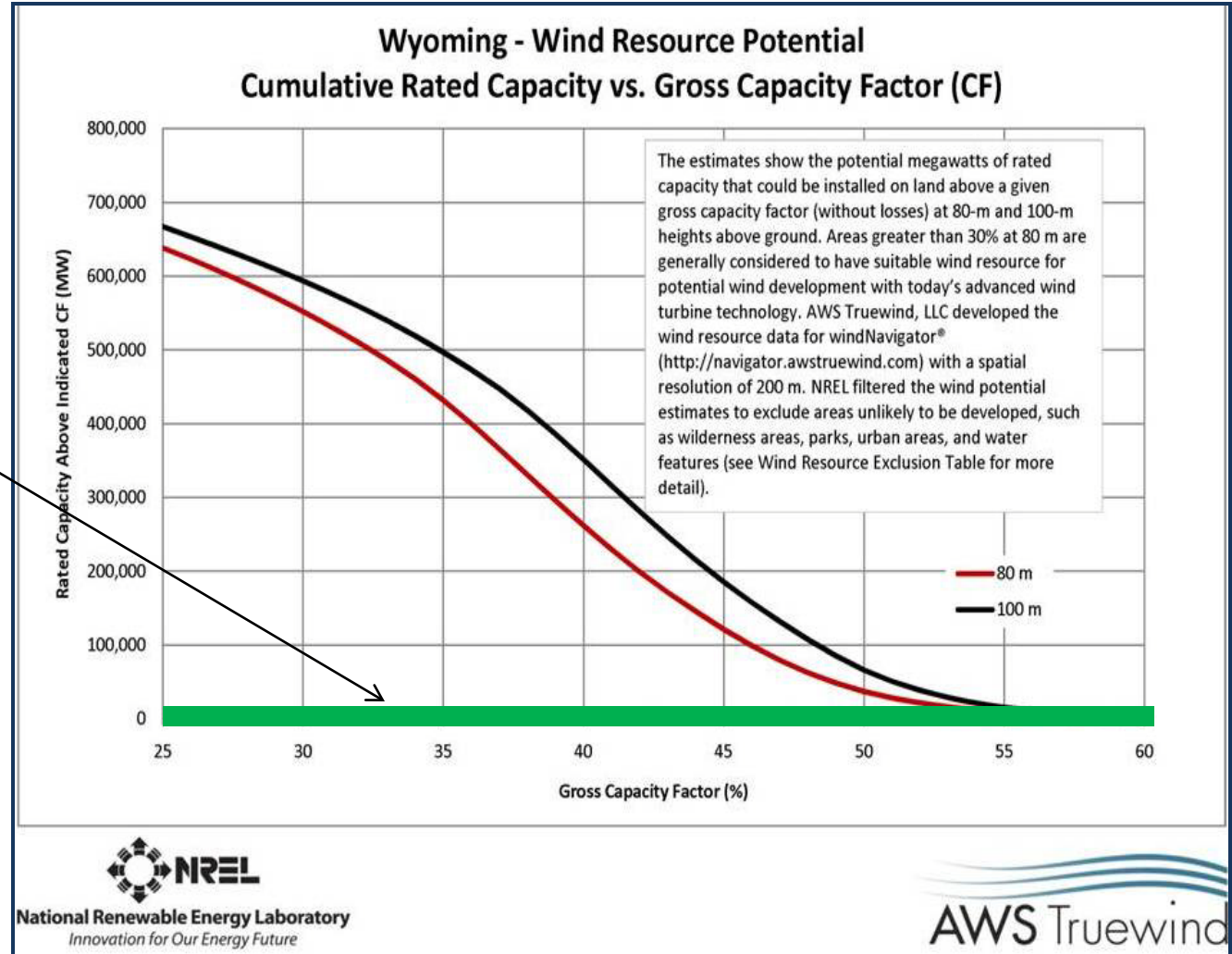
Eight States have dedicated varying resources to support transmission infrastructure and Development

- *Wyoming Infrastructure Authority (2004)*
- *Idaho Energy Resources Authority (2005)*
- *Kansas Electric Transmission Authority (2005)*
- *North Dakota Transmission Authority (2005)*
- *South Dakota Energy Infrastructure Authority (2005)*
- *Colorado Clean Energy Development Authority (2007)*
- *New Mexico Renewable Energy Transmission Authority (2007)*
- *Utah Generated Renewable Energy Electricity Network (2010)--**Latest***

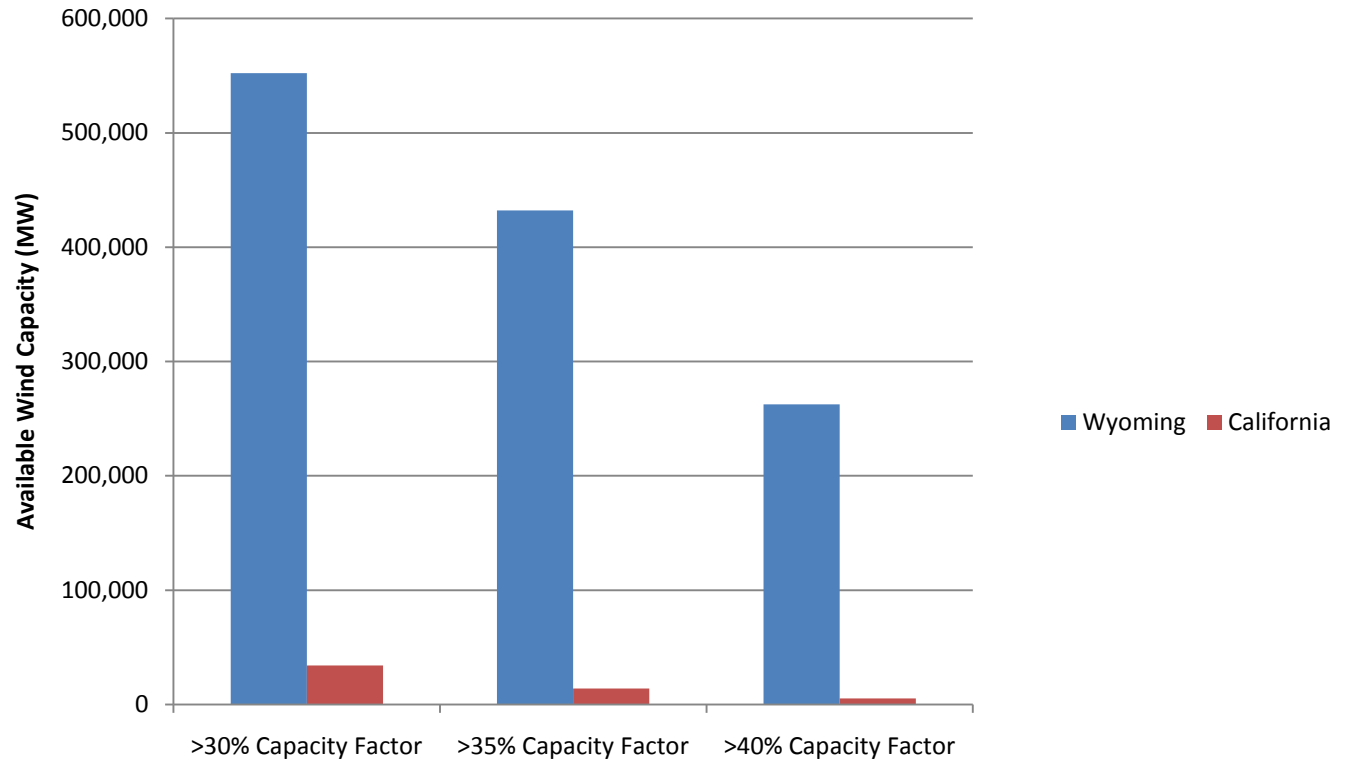


Wind Quality and Availability in Wyoming

Amount of transmission and wind development that is possible to be constructed in the next 10 years



Wind Quality Comparisons WY vs. CA

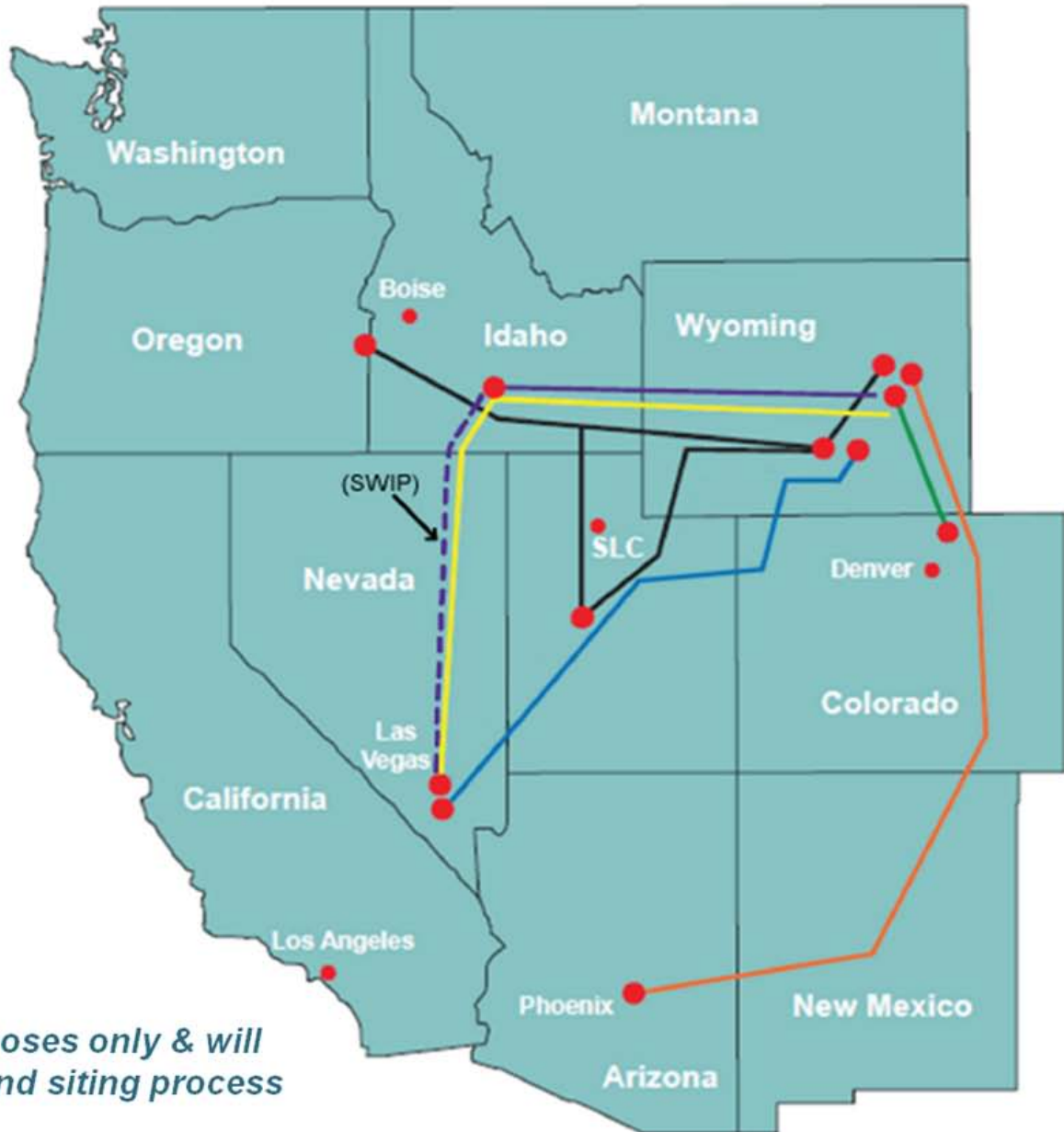


Transmission Projects under development in Wyoming



Projects

Wyoming-Colorado Interie	
Energy Gateway (West & South)	
TransWest Express	
High Plains Express	
Zephyr	
Overland Transmission	



Routes shown are for illustrative purposes only & will be finalized following the permitting and siting process

Permitting & Siting Status of Transmission Projects in Wyoming

Project	Developer	Initiated NEPA Process?	Est. Draft EIS	Est. In-Service Date
Gateway West	PacifiCorp	YES	2011	2016-2018
Gateway South	PacifiCorp	YES	2013	2017-2019
TransWest Express	TransWest LLC/Anschutz	YES	Mid 2012	2015-2016
Zephyr	TransCanada	NO		2018
Overland	LS Power	NO		2018
Wyoming-Colorado Intertie	LS Power/WIA	N/A	N/A	2014-2015
High Plains Express	12 Developers	NO		2019

JULY 14, 2011



NEWS RELEASE
For Immediate Release

Date: July 14, 2011
Contact: Adam Gassaway, LS Power
Email: agassaway@lspower.com
Phone: 636.532.2200

WYOMING COLORADO INTERTIE ANNOUNCES TRANSMISSION SERVICE REQUEST

July 14, 2011 – Wyoming Colorado Intertie, LLC (WCI) has received a request for 100% (up to 900 megawatts) of the Initial Long-Term Firm Point-to-Point electric transmission service on the Wyoming Colorado Intertie Project. Pursuant to the terms of its Open Access Transmission Tariff, WCI must hold an auction if any qualified party submits a competing request, subject to minimum bid criteria and security requirements, on or before August 11, 2011. Any party interested in purchasing transmission service on the Wyoming Colorado Intertie Project is encouraged to visit www.WCIntertie.com for more information.

The Wyoming Colorado Intertie Project is a planned electric transmission facility between Southeast Wyoming and Northeast Colorado. The project is being developed through a public/private partnership between the Wyoming Infrastructure Authority, an instrumentality of the State of Wyoming, and WCI, a member of the LS Power Group.

JULY 22, 2011

**BLM publishes Draft Environmental Impact Statement
for Chokecherry and Sierra Madre Wind Energy Project**

Important milestone marks start of 90-day public comment period

July 22, 2011 – The Bureau of Land Management has released its Draft Environmental Impact Statement for the Chokecherry and Sierra Madre Wind Energy Project, a 2,000-3,000 megawatt wind farm proposed by Power Company of Wyoming LLC in south-central Wyoming.

The Notice of Availability of the Draft EIS is published in today's edition of *Federal Register*, the official daily publication of the federal government, and begins a 90-day comment period.

The approximately 1,100-page Draft EIS document results from more than three years of analysis, public input and collaboration among federal, state and local cooperating agencies.

The report informs the public of various factors associated with the wind power plant, including its ecological, aesthetic, cultural, economic and social effects. BLM is preparing this EIS pursuant to the National Environmental Policy Act because about half of the PCW wind project is sited on federal land.....



JULY 29, 2011

Release Date: 07/29/11
Contacts: Beverly Gomy
307-775-6158

Draft Environmental Impact Statement for Gateway West Transmission Line Available for Review

A draft environmental impact statement (EIS) analyzing a proposed electric transmission line between Wyoming and Idaho has been released by the Bureau of Land Management (BLM) for public review and comment. The public has until Oct. 28 to review and comment on the draft EIS. The Environmental Protection Agency (EPA) published a notice of availability of the document on July 29 which started the comment period.

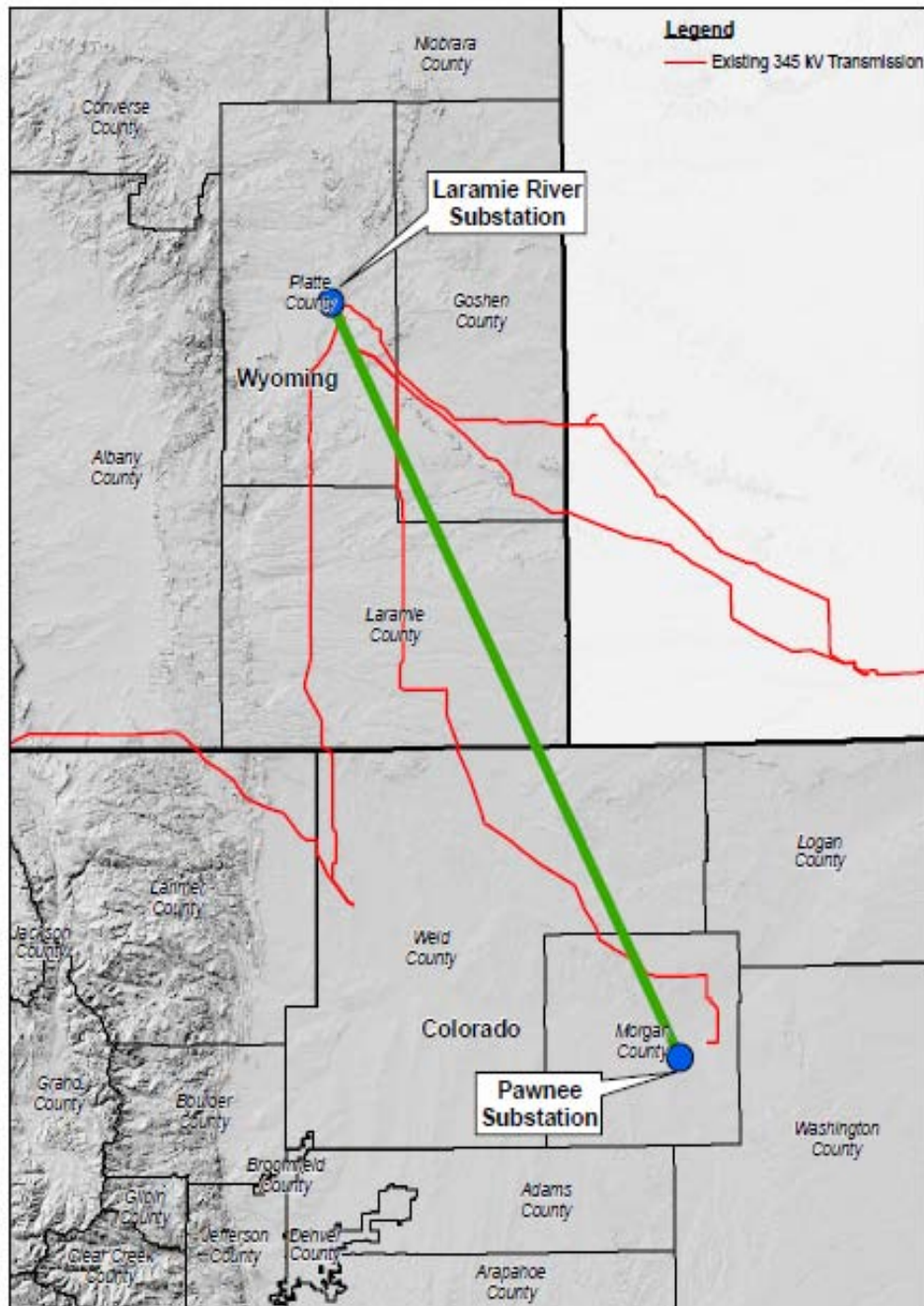
This project is jointly proposed by Idaho Power and Rocky Mountain Power, and would result in construction of nearly 1,100 miles of high voltage transmission lines across southern Wyoming and southern Idaho. The project proponents have applied to the BLM and U.S. Forest Service (USFS) for right of way grants to construct, operate and maintain transmission lines from the proposed Windstar substation near Glenrock, Wyo. to the proposed Hemingway substation near Melba, Idaho, approximately 20 miles southwest of Boise.

Construction of Gateway West would add 3,000 megawatts (MW) of transmission capacity. The transmission line will serve present and future needs of customers, enhance electric system reliability and transmit electricity generated from new and existing resources, including wind.

The BLM is the lead federal agency for the National Environmental Policy Act process for this project, and is working with cooperating agencies including the USFS; National Park Service; U.S. Fish and Wildlife Service; U.S. Army Corps of Engineers; Bureau of Indian Affairs; states of Idaho and Wyoming, including the Idaho Army National Guard; Cassia, Power, and Twin Falls counties in Idaho; Carbon, Lincoln, and Sweetwater counties in Wyoming; the Saratoga-Encampment-Riverside and Medicine Bow conservation districts in Wyoming; and the City of Kuna, Idaho.

The BLM, local, and state cooperators have worked together to develop a range of reasonable alternatives to this proposed action that will be discussed during public information meetings. Those meetings are planned for: Idaho – Boise, Kuna, Murphy, Melba, Mountain Home, Twin Falls, Burley, Almo, Fort Hall, Montpelier, American Falls and Pocatello; Wyoming - Kemmerer, Rock Springs, Rawlins, and Douglas; and Jackpot, Nev. Specific dates for meetings will be announced at least two weeks in advance. All meetings will be from 4:00 p.m. to 7:00 p.m.

To submit comments and to review the draft EIS and related documents, including detailed maps, visit the project website at:
www.wy.blm.gov/nepa/cfodocs/gateway_west.



Wyoming-Colorado Intertie Project

*LS Power & WIA—850 MW
 from LRS to Colorado*

345 kV Line AC—180 miles

As early as 2013

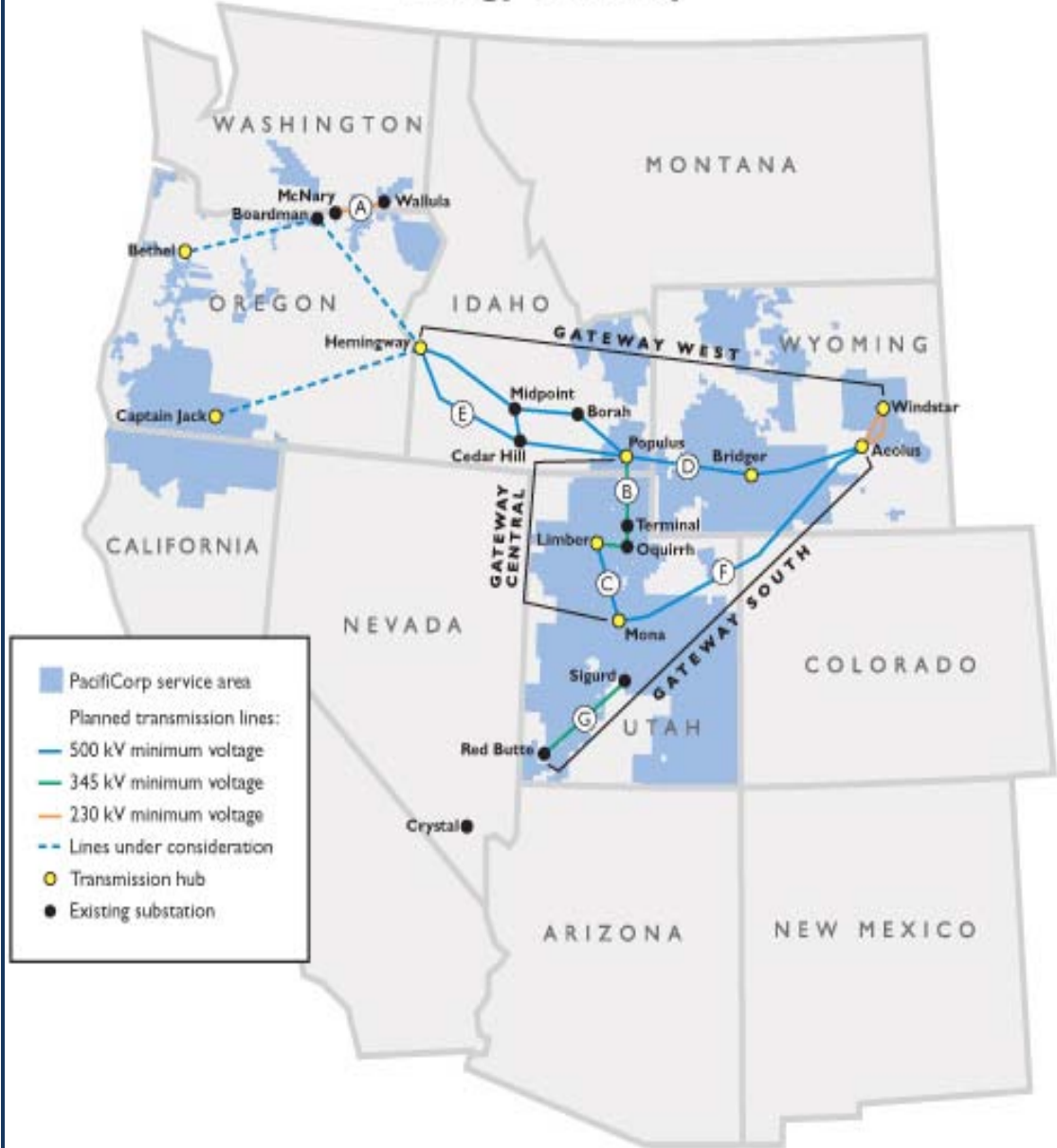
Less than \$300 million

***There continues to be a strong
 interest by generation
 developers for space on WCI***

***The WIA has a 50% interest
 in the development of this project
 and its investment will be returned
 upon financing***



Energy Gateway



This map is for general reference only and reflects current plans.
It may not reflect the final routes, construction sequence or exact line configuration.

Energy Gateway Projects

*PacifiCorp/MEHC & Idaho Power: 3,000 MW total from WY to Idaho & Utah
2,000 miles when complete
2014-2019--\$6.1 billion
500 kV and 230 kV AC*

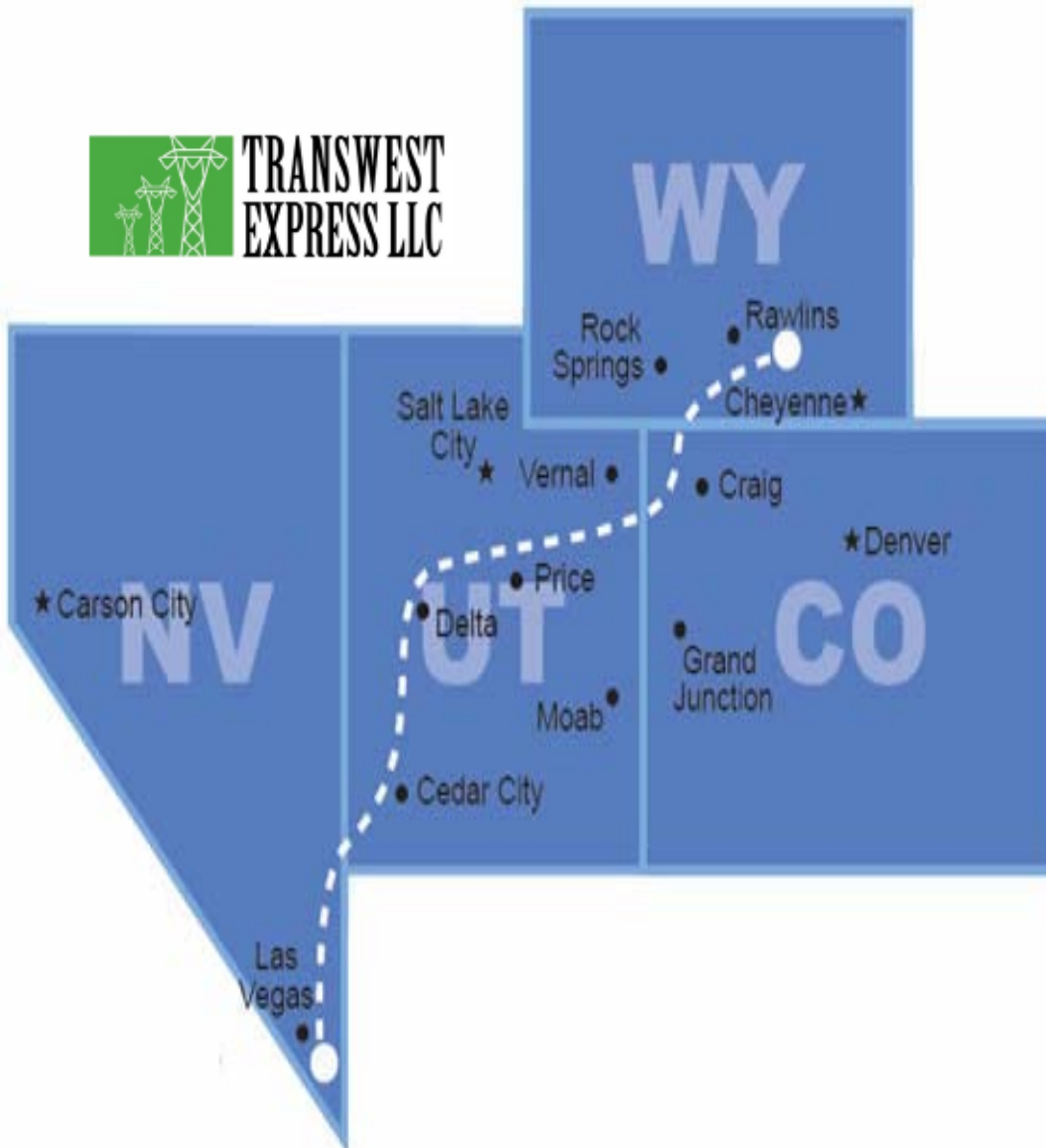
Scoping meetings relative to the NEPA process have commenced



TransWest Express Project

*TransWest Express, LLC:
3,000 MW from WY to
CAISO south of Las Vegas
600 kV DC line—725 miles
As early as 2015
\$3 billion*

*Western Area Power
Administration has signed a
non-binding agreement to
participate in up to 50% of
the Project--WAPA serves
as a Joint Lead Agency
in the NEPA process*



Zephyr Project

TransCanada: 3,000 MW from WY to a DC/AC converter station south of Las Vegas

*Double-circuit 500 kV DC
1,100 Miles as early as 2016
\$3 billion*

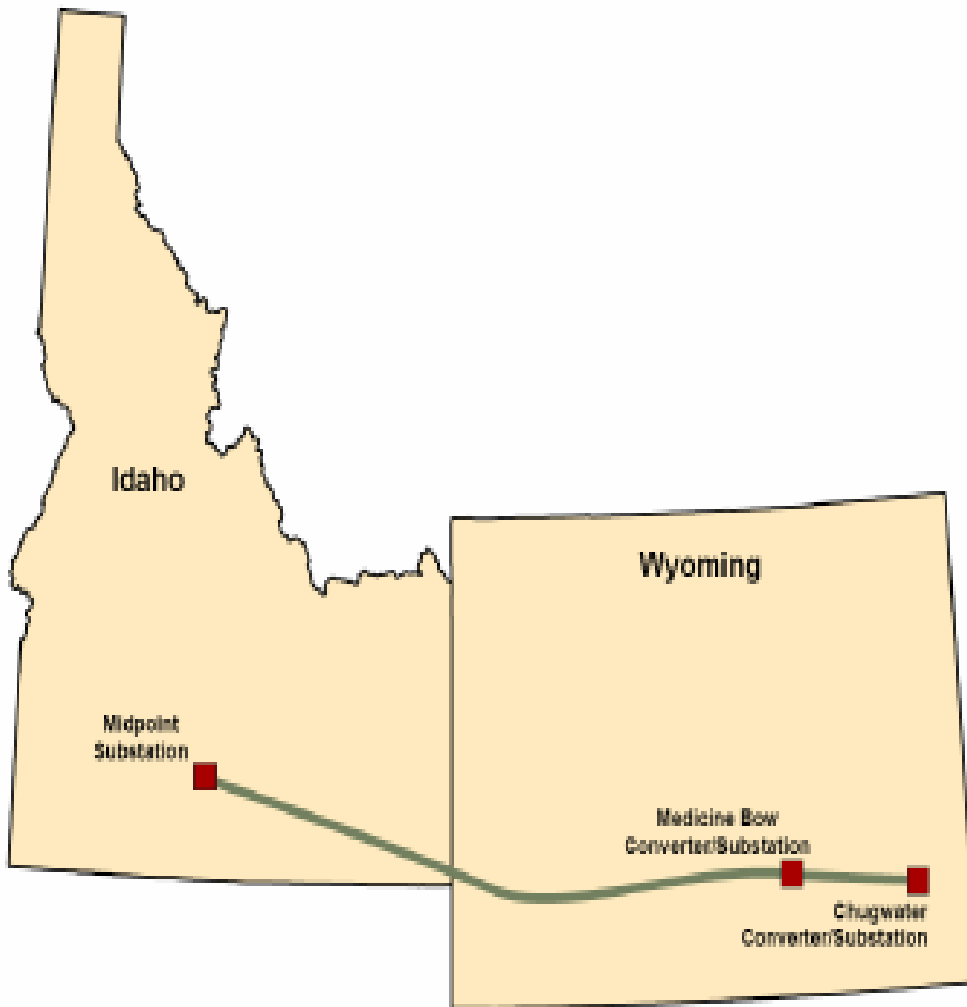
*Open season results—
Pathfinder, Horizon & BP
have subscribed 100%
of the capacity*



Overland Intertie Project

*Jade Energy Associates,
LLC (an affiliate of LS
Power: up to 3,000 MW
from WY to Midpoint in
Idaho to interconnect with
SWIP*

*Double-circuit 500 kV DC
As early as 2016—625
miles--\$1 billion +*

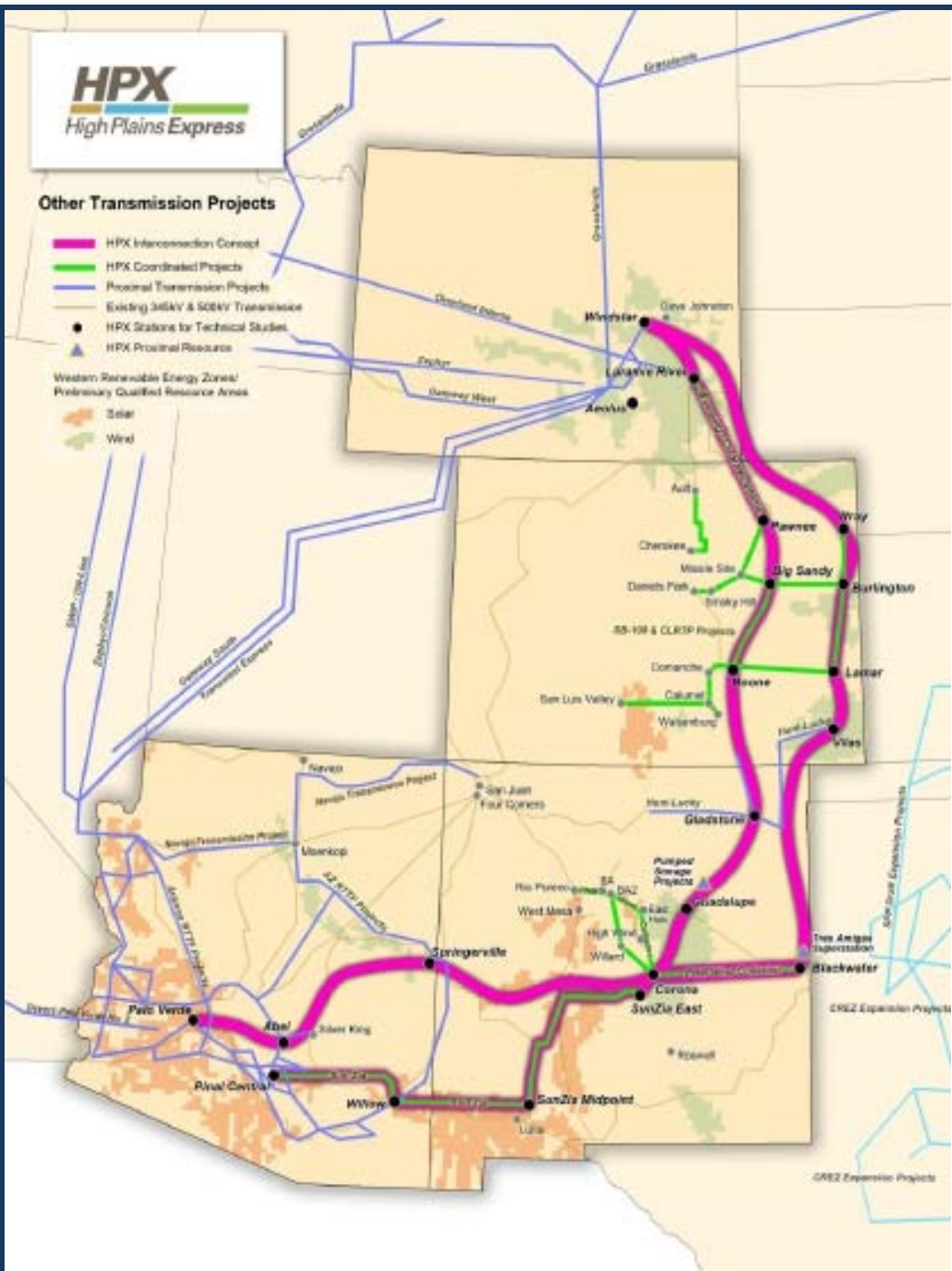


Other Transmission Projects

- HPX Interconnection Concept
- HPX Coordinated Projects
- Proximal Transmission Projects
- Existing 345kV & 500kV Transmission
- HPX Stations for Technical Studies
- ▲ HPX Proximal Resources

Western Renewable Energy Zones/
Preliminary Qualified Resource Areas

- Solar
- Wind



High Plains Express Project

3,500 MW from WY to CO, NM and AZ

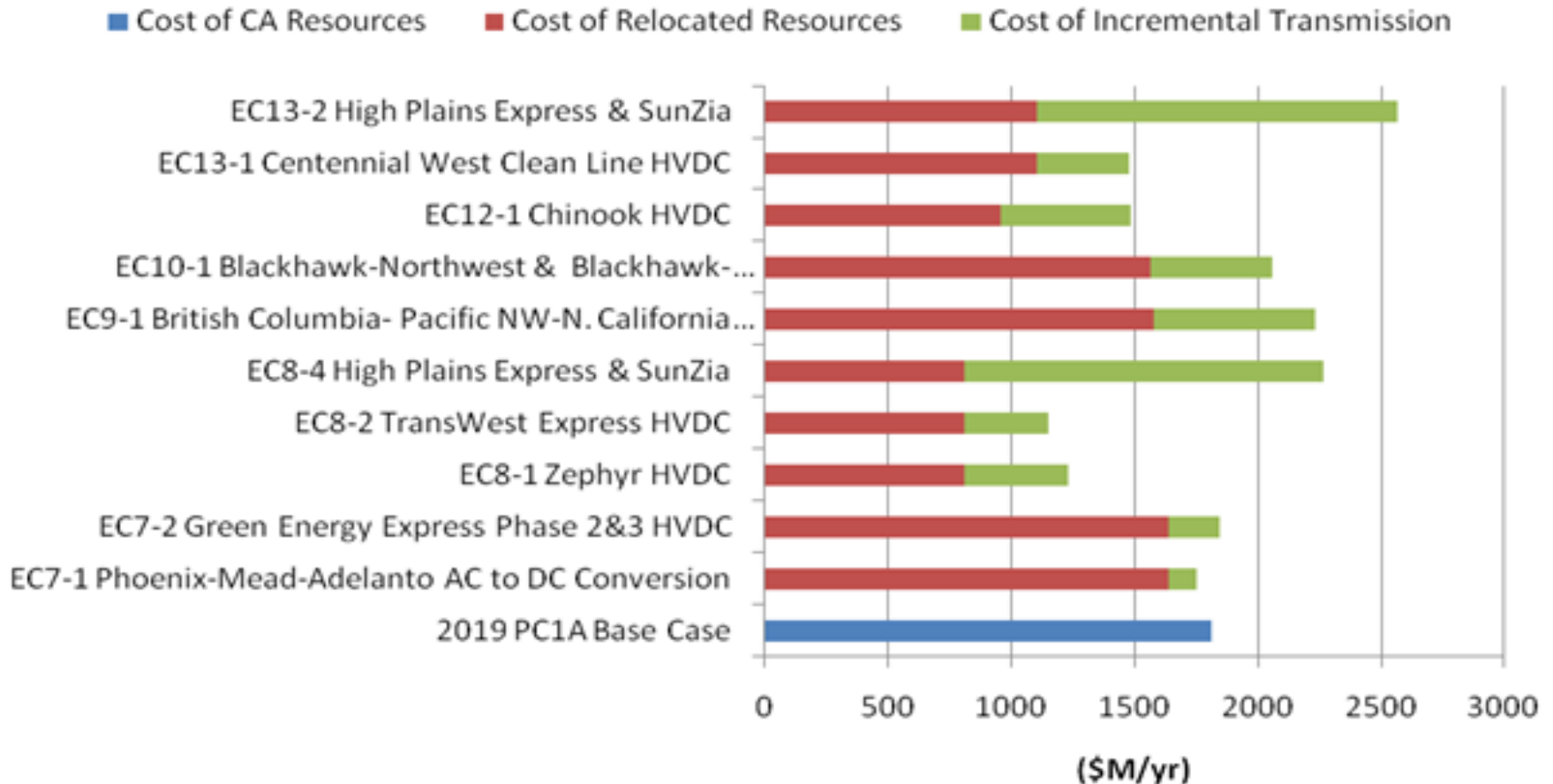
Double-circuit 500 kV AC line--\$5 billion

The Project participants include:

- Black Hills Corporation
- Colorado Clean Energy Development Authority
- Colorado Springs Utility
- LS Power
- New Mexico Renewable Energy Transmission Authority
- NextEra Energy Resources
- Public Service Company of New Mexico
- Salt River Project
- Tri-State Generation & Transmission Assoc.
- Western Area Power Administration
- Wyoming Infrastructure Authority
- Xcel Energy

Preliminary Data from WECC 10 year plan

Capital Cost Comparison of Resource Relocation with Similar-Sized Transmission Expansion





Market Information

DEVELOPABLE RENEWABLE ENERGY SUPPLY IN THE WEST

STATE	SURPLUS (TWh/yr)
Colorado (NREL data)	27.0
Arizona (NREL data)	14.5
Nevada (NREL data)	11.5
New Mexico (NREL data)	5.0
Wyoming (2—3,000 MW projects)	23.6
Montana (2—3,000 MW projects)	23.6
California (Sierra Club data)	262.6
TOTAL:	367.8
California's requirements from 2011 to 2025	75.0
Surplus	292.8
Ratio of Supply to Demand	3.9 to 1
Number of 3,000 MW projects that <u>will not be built</u> between now and 2025	<i>approximately 25 throughout the West</i>
Number of 100 MW projects that <u>will not be built</u> between now and 2025	<i>approximately 750 throughout the West</i>

Important Issues being addressed

- *Exploring ways to mitigate the time required and cost relative to the NEPA process which currently takes 4 to 5 years at a cost of \$40 to \$60 million*
- *A market that wants to develop indigenous renewable resources*
- *Recognizing that every renewable project has an associated cost component, the WIA is confident that load serving entities in the marketplace and their associated regulators will seek to source renewable supplies that will have the least economic impact on the ultimate consumers, residential and commercial rate payers*
- *Studies suggest that Wyoming wind will provide geographical diversity benefits when combined with renewable resources closer to the load which will result in the mitigation of ramping events with a corresponding savings relative to integration costs*
- *Wyoming's Joint Revenue Committee has been tasked with reviewing the current tax policy on wind*
 - *had a meeting in Saratoga in May, 2011*
 - *Scheduled to meet in Buffalo on August 25-26*



NREL Economic Benefits & Job Creation Study

- *The WIA commissioned NREL in 2010 to conduct a study which will consider the following development:*
 - *9,000 MW of transmission to the marketplace*
 - *9,000 MW of wind generation*
 - *10,800 MW collector system*
 - *1,800 MW of natural gas-fired generation*
- *The benefits of such 9,000 MW of development would result in:*
 - *\$11.8 to \$14.8 billion in additional economic output to our State (includes construction period and 20 years of operations)*
 - *2,300 to 2,600 permanent jobs during 20 years of operation*
- *\$20,000 DOE grant was applied-for and obtained mitigating WIA's cost*



Questions?

For more information, please visit our website at www.wyia.org

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An Instrumentality of the State of Wyoming