

Wyoming: Where Power Transmission & Generation Meet

**Wyoming Infrastructure
Authority**

**Loyd G. Drain
Executive Director**

**State Authorities Meeting
September 15, 2010
Salt Lake City, Utah**

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



Wyoming Infrastructure Authority

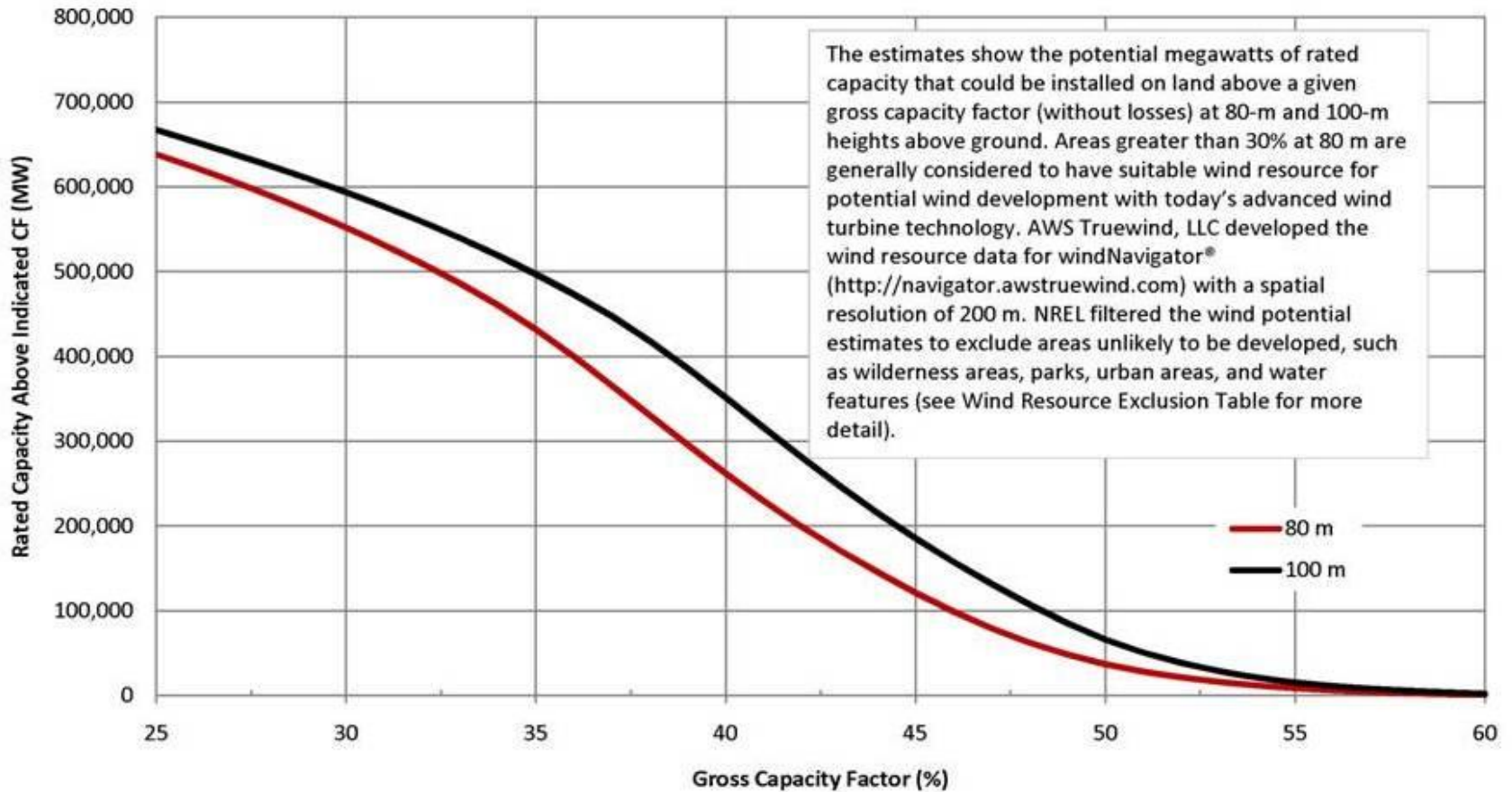
- **Created in 2004 by the Wyoming Legislature---**
<http://legisweb.state.wy.us/statutes/statutes.aspx?file=titles/Title37/T37CH5.htm>
- **Mission: diversify and expand the state's economy through improvements in the transmission grid**
- **Tools:**
 - **Can plan, finance, site, own, operate and otherwise promote transmission projects**
 - **\$1.6 million operating budget supports staff and consultants (biennium basis)**
 - **\$10 million venture account to develop projects**
 - **\$1 billion in bonding capability to help finance projects**

Wyoming Infrastructure Authority—Our People

- **5 member Board appointed by the Governor with the advice and consent of the senate. Terms are for four (4) years.**
 - *Mike Easley (Chairman), CEO of Powder River Energy*
 - *Kyle White (Vice-Chairman), Vice President of Regulatory and Governmental Affairs for Black Hills Corporation*
 - *Bryce Freeman (Secretary), Administrator of the Wyoming Office of Consumer Advocate*
 - *J.M. Shafer, Recently retired from Tri-State Generation and Transmission Association, Inc.*
 - *Bret Jones, Sr. V.P., George K. Baum & Company*
- **Current Staff**
 - *Loyd Drain, Executive Director*
 - *Holly Martinez, Office Manager*
- **Counsel—Rothgerber, Johnson & Lyons, LLP**
 - *Former Governor Michael Sullivan, Partner*
 - *John Masterson, Special Counsel*







Wind Quality and Availability in Wyoming

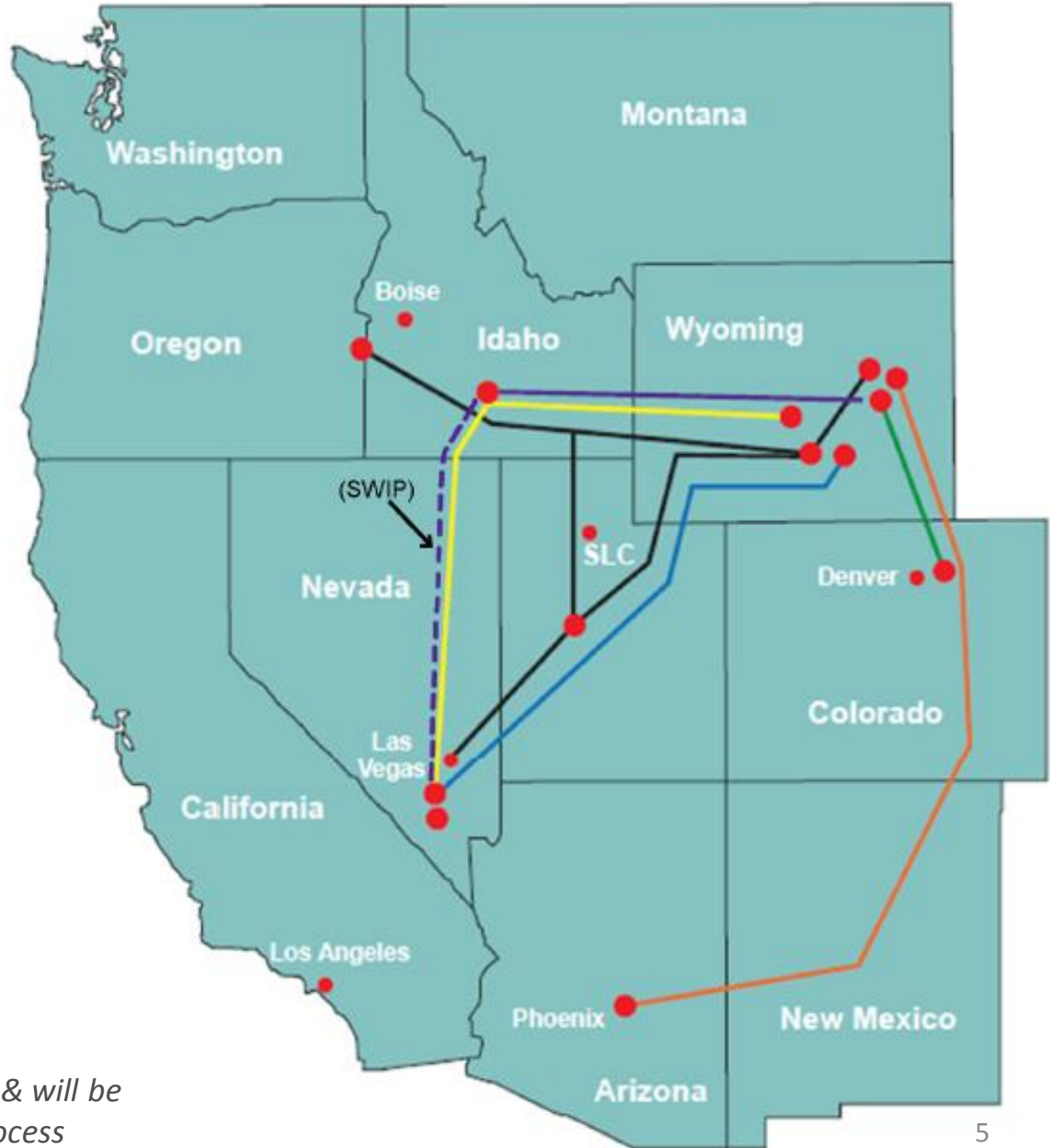
Wyoming - Wind Resource Potential Cumulative Rated Capacity vs. Gross Capacity Factor (CF)



Wyoming-Based Transmission Projects in the Development Stage

Projects (In-service dates)

Wyoming-Colorado Interie		(2013)
Energy Gateway (West & South)		(2010-2017)
TransWest Express		(2015)
High Plains Express		(2018)
Zephyr		(2015)
Overland Transmission		(2015)



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



Wyoming-Colorado Intertie Project

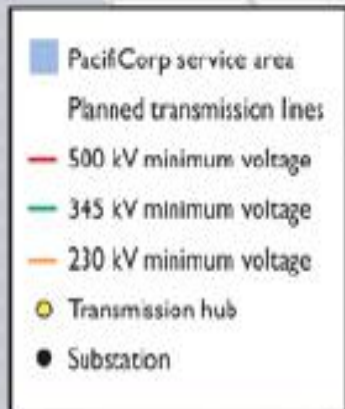
*LS Power & WIA—850 MW
from LRS to Colorado*

*The WIA has a 50% interest
in the development of this project*



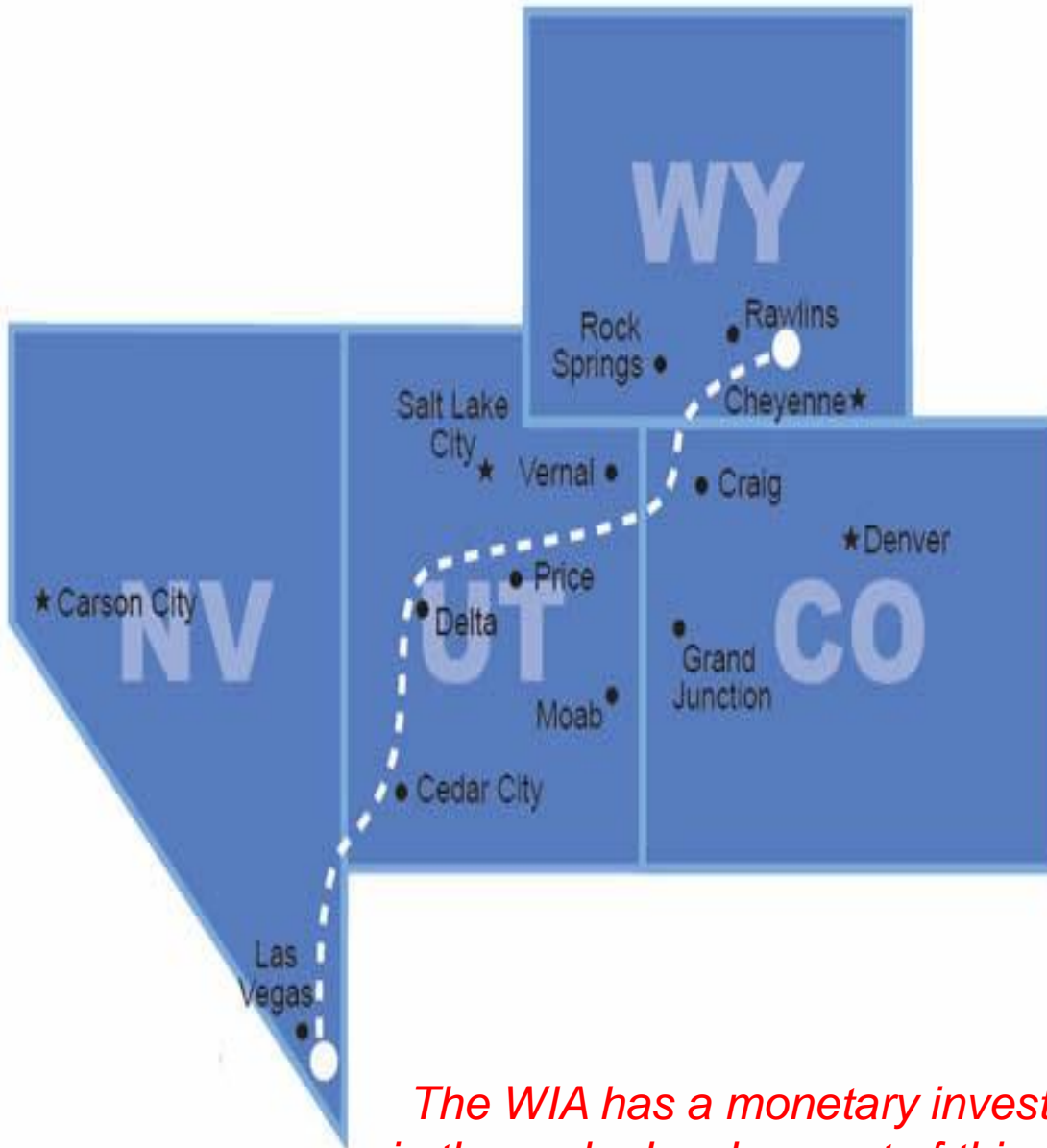
Energy Gateway Projects

*PacifiCorp/MEHC & Idaho
Power: 3,000 MW total from
WY to Idaho & Utah*



TransWest Express Project

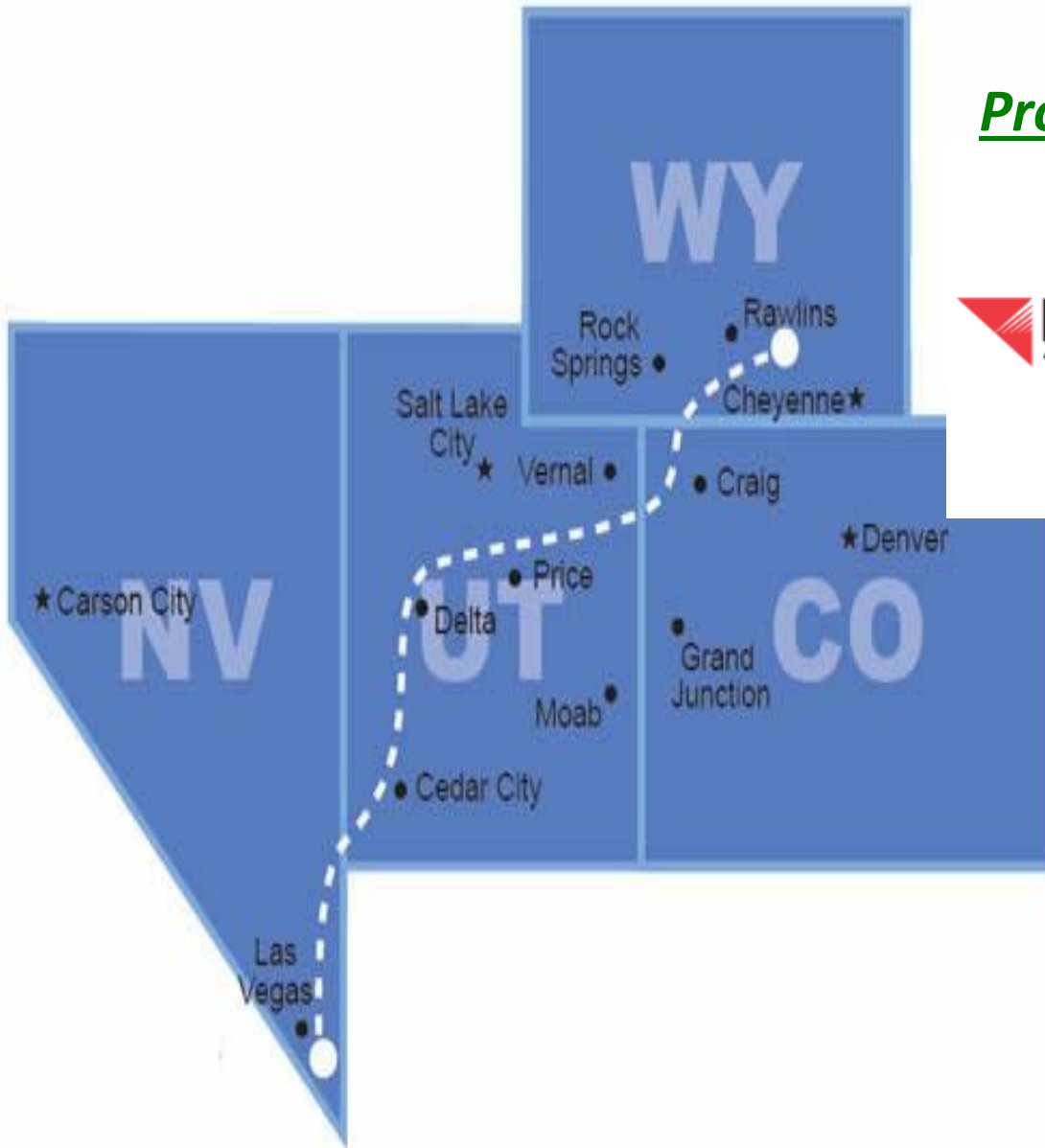
*TransWest Express, LLC:
3,000 MW from WY to
CAISO south of Las Vegas*



*The WIA has a monetary investment
in the early development of this project*



TransWest Express Project—Previous Developers





Zephyr Project

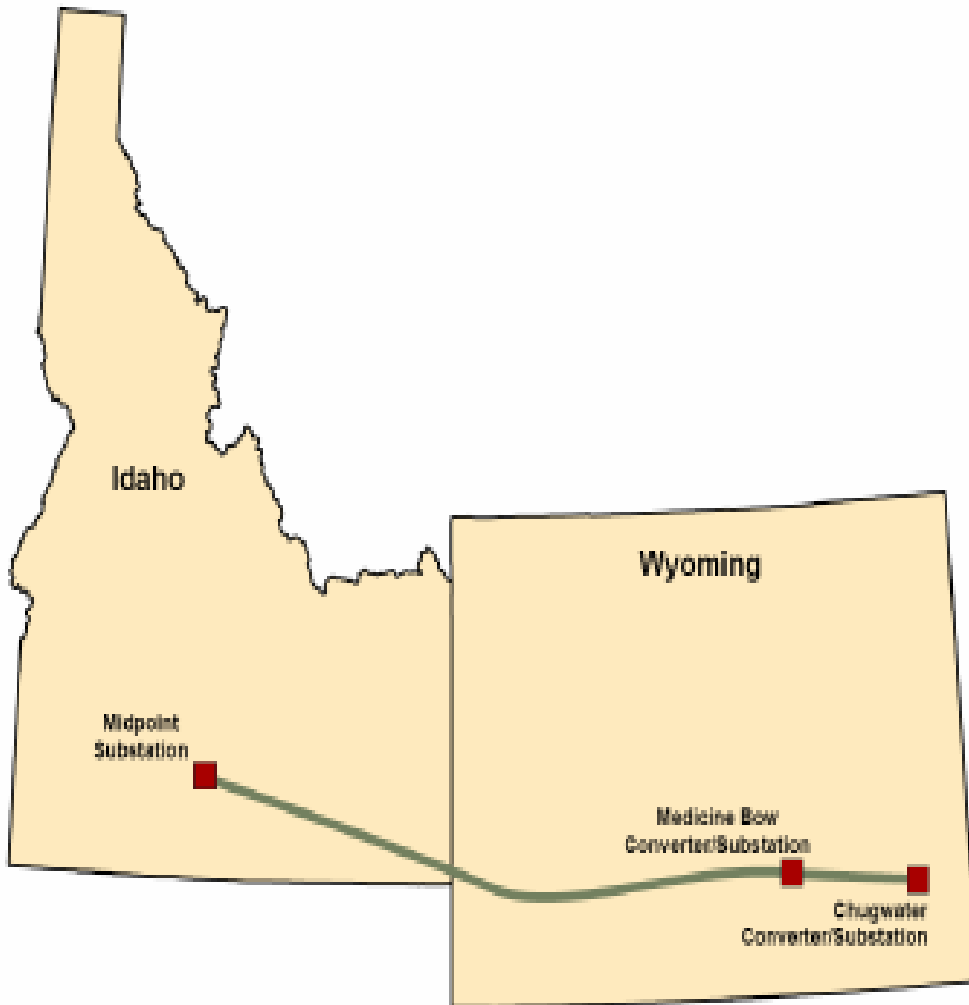
TransCanada: 3,000 MW from WY to a DC/AC converter station south of Las Vegas

Open season results—Pathfinder, Horizon & BP



Overland Intertie Project

*Jade Energy Associates,
LLC: up to 3,000 MW from
WY to Midpoint in Idaho to
interconnect with SWIP*





High Plains Express Project

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

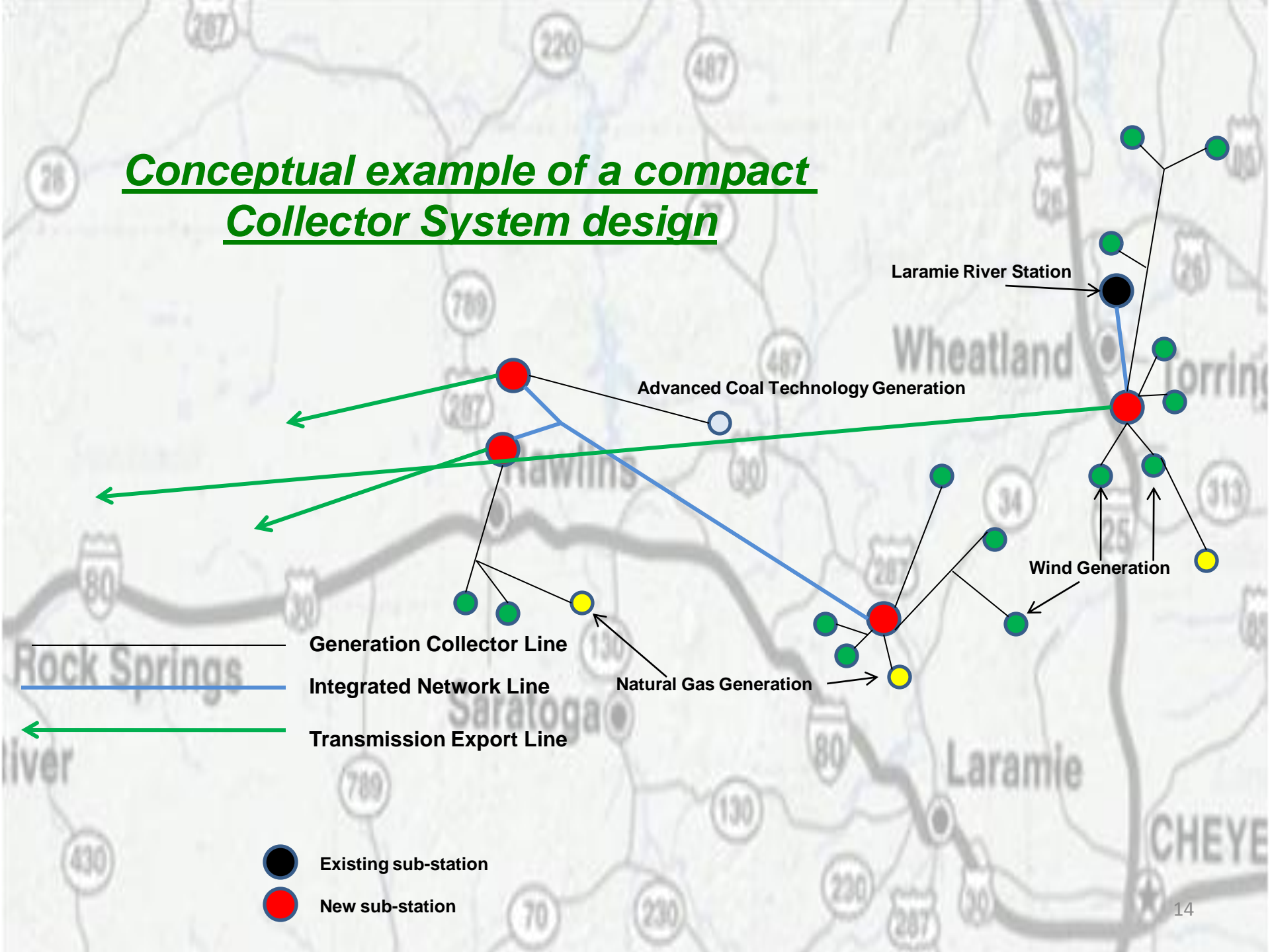
The Project participants include:

- 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

It's not just about Wind

- **While wind is the catalyst that will drive new transmission, the WIA is fully supportive of:**
 - *Natural gas-fired generation—studies suggest that it makes economic sense to site such generation in Wyoming to support wind development*
 - *Strides continue to be made in both clean coal technology and carbon sequestration*
 - *New transmission lines will remain operational for 70-100 years and no one knows what the source of electrons flowing down the lines will be in the future*

Conceptual example of a compact Collector System design



Laramie River Station

Advanced Coal Technology Generation

Wind Generation

Natural Gas Generation

Generation Collector Line

Integrated Network Line







Transmission Export Line

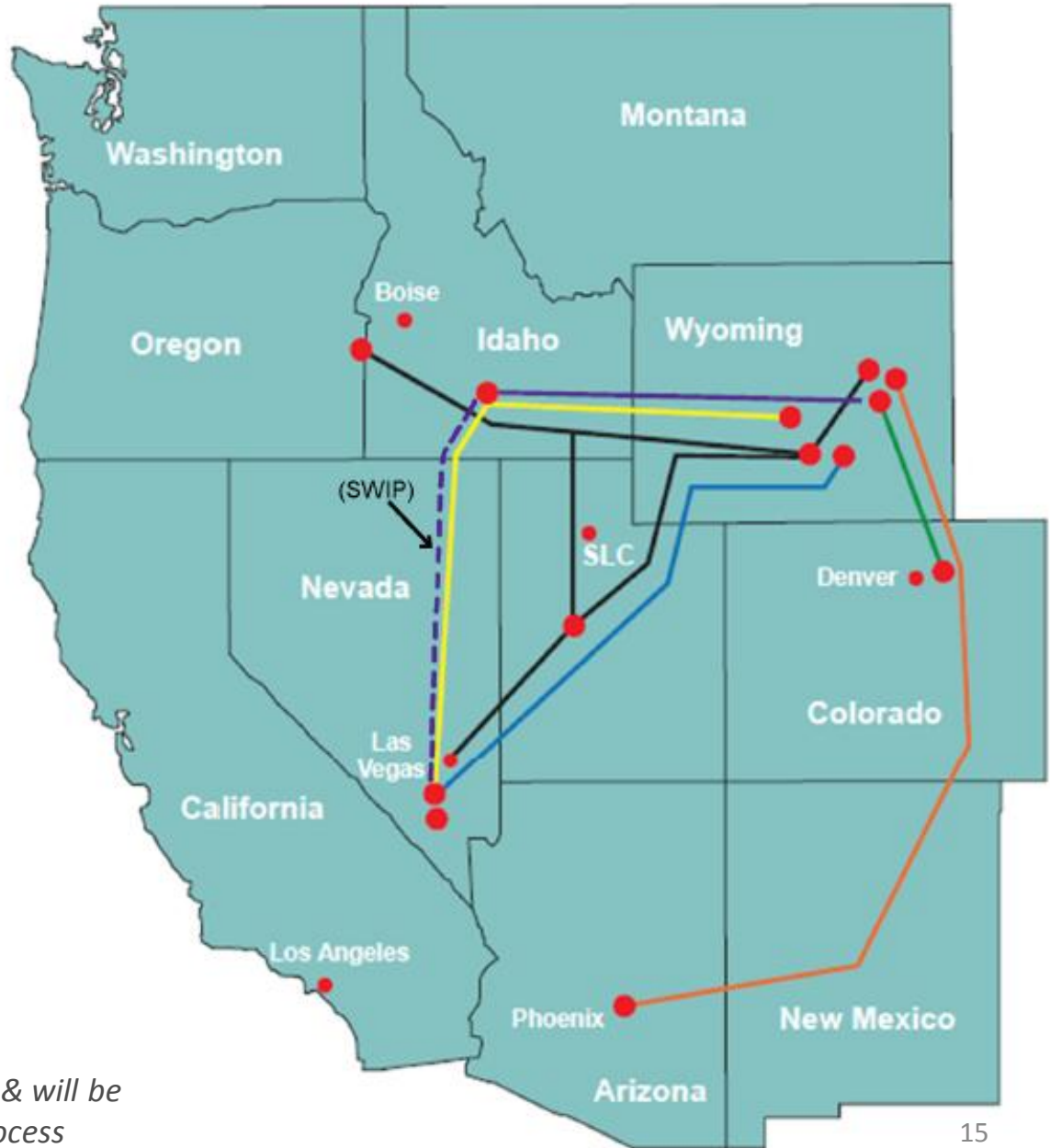
- Existing sub-station
- New sub-station

Wyoming-Based Transmission Projects in the Development Stage

Projects total
15,000 MW +/-

Projects (In-service dates)

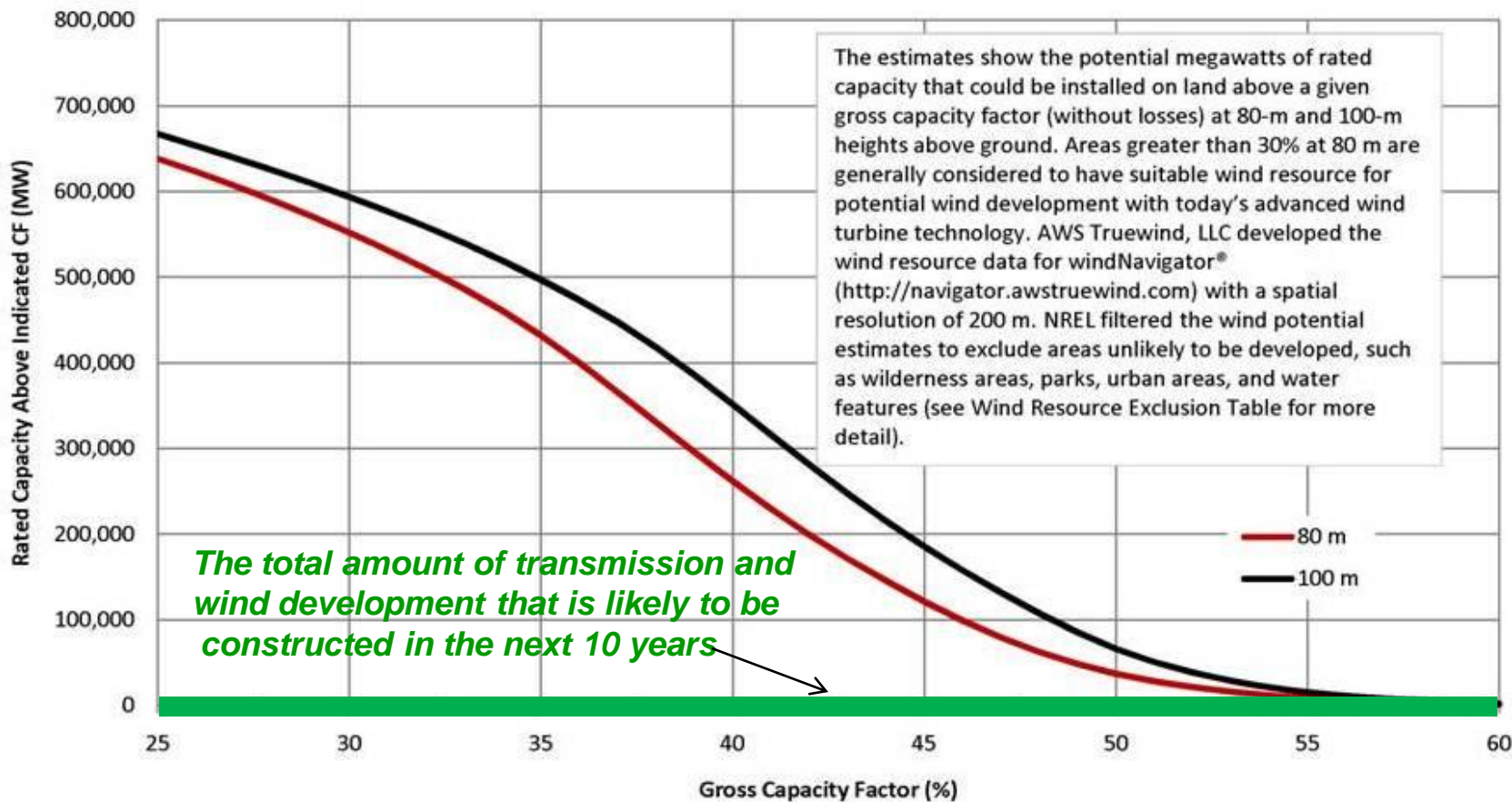
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NREL Economic Benefits & Job Creation Study

- The WIA has commissioned NREL to conduct a study which will consider the following development:
 - 9,000 MW of transmission to the marketplace
 - 9,000 MW of wind generation
 - 9,000 MW collector system
 - 1,800 MW of natural gas-fired generation
- Based on other studies which have been conducted, the WIA expects that the annual monetary benefit to the State of Wyoming will be in excess of \$1 billion annually for the 20 year economic life of the generation plus the construction period and the transmission line will still be carrying electrons 70 to 100 years from now!

Alliances

- *On the Federal level with entities such as the FERC, DOE, BLM and NREL*
- *WECC regional and sub-regional planning groups (NTTG, SWAT, West Connect & CCPG)*
- *Western Governors' Association, American Wind Energy Association*
- *Wyoming Power Producers Coalition*
- *Wyoming Business Council*
- *Wyoming Public Service Commission*
- *Wyoming Pipeline Authority*
- *Wyoming Department of Environmental Quality/Industrial Siting Commission*
- *University of Wyoming's School of Energy Resources*
- *Landowner Associations relative to generation development*
- *Other State Transmission Authorities*
- *AWEA*





Questions?

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

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WYOMING INFRASTRUCTURE AUTHORITY