



# WESTERN AREA POWER ADMINISTRATION TRANSMISSION INFRASTRUCTURE PROGRAM OVERVIEW AND UPDATE

## MEETING TRANSMISSION CHALLENGES IN THE ROCKY MOUNTAIN REGION

JUNE 21, 2011, FT. COLLINS, CO



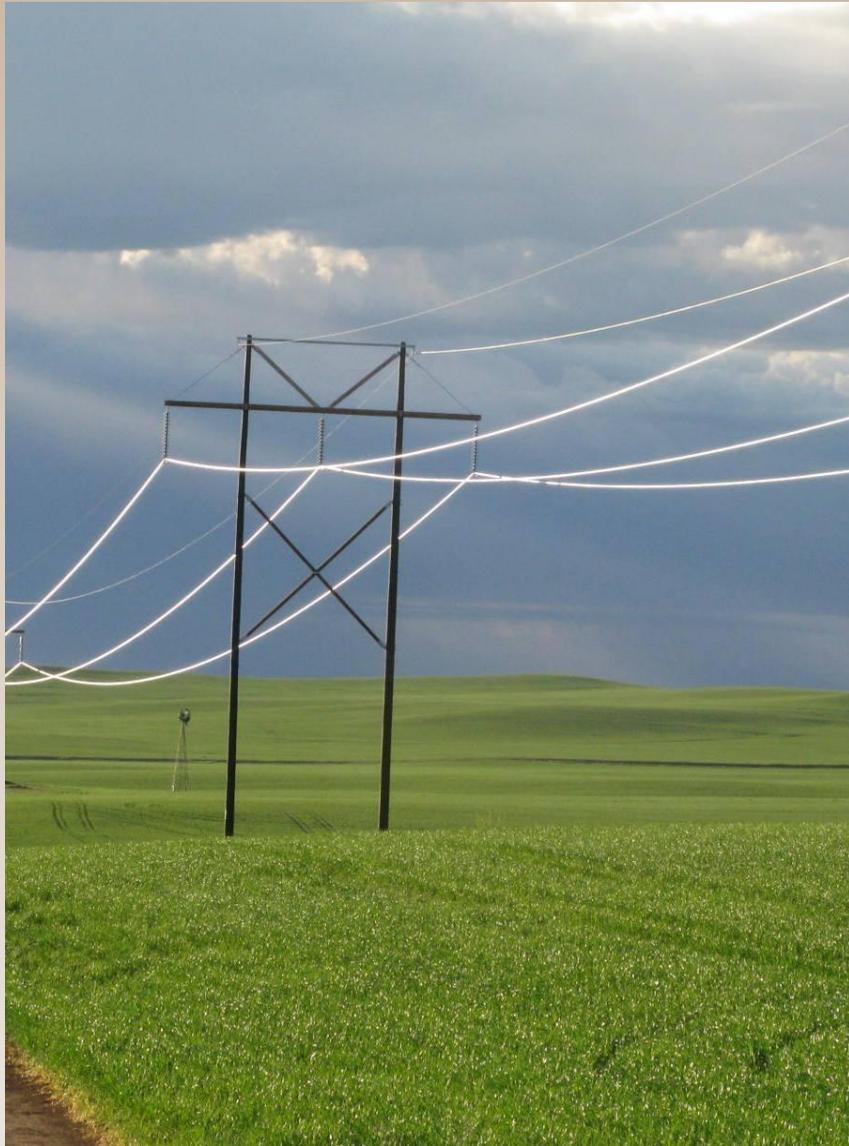


# TOPICS

- **Western**
- **TIP**
- **Current TIP Projects**
- **Potential TIP Projects**
- **Projects Expected to Borrow Next**



# WHAT IS WESTERN?

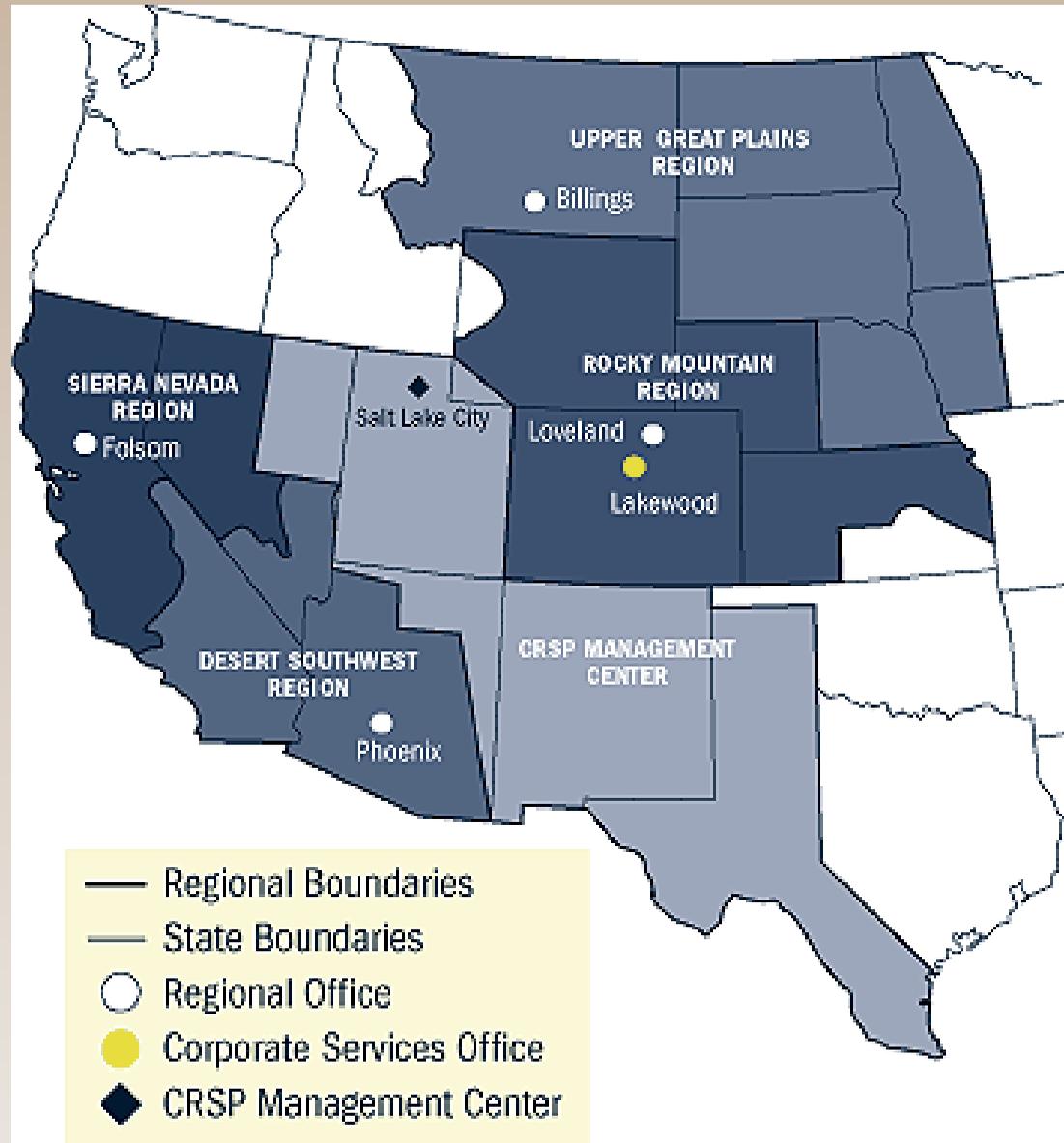


- Power Marketing Administration under DOE
- Wholesale electricity supplier, 57 hydropower plants, 10,479 MW capacity
- 682 long-term/firm power preference customers





# WESTERN'S SERVICE TERRITORY





# OUR ROLES IN ENERGY



Glen Canyon Dam, Arizona

- Markets clean hydropower at cost-based rates
- Operates 17,000+ miles of transmission lines
- Controls parts of the energy grid
- Manages interties
- Provides open access to transmission



# TIP PROGRAM OVERVIEW



Projects must pass TIP evaluation criteria to include:

Have one terminus within area served by Western

Deliver, or facilitate the delivery of, power generated by renewable energy resources to be constructed or reasonably expected to be constructed



# TIP PROGRAM OVERVIEW (CONT'D)

Implement Title III, Hoover Power Plant Act of 1984  
(under American Recovery and Reinvestment Act)

Borrowing authority of \$3.25 billion

Identify, prioritize and participate in the study, facilitation, financing, planning, operating, maintaining, and construction of new or upgraded transmission facilities



# TIP PROGRAM PRINCIPLES

## Program Principles

- Encourage broad-based participation
- Uses project revenue as the only source of revenue for:
  - Repayment of the project loan
  - Payment of ancillary service and O&M expenses
- Maintain controls for accounting and repayment - projects under this authority are separate and distinct
- Ensure project beneficiaries repay project cost



# TIP PROJECT PRINCIPLES

## Project Principles

- Must be in the public interest
- Must not impair system reliability or statutory obligations
- Have reasonable expectation of repayment of principal and interest of Treasury loan and associated project costs on a stand alone basis – costs cannot be integrated into existing projects
- Western uses a public process to set new rates for any transmission capacity resulting from new facilities developed from TIP participation in such projects.
- Must independently obtain and arrange for the delivery of generation-related ancillary services

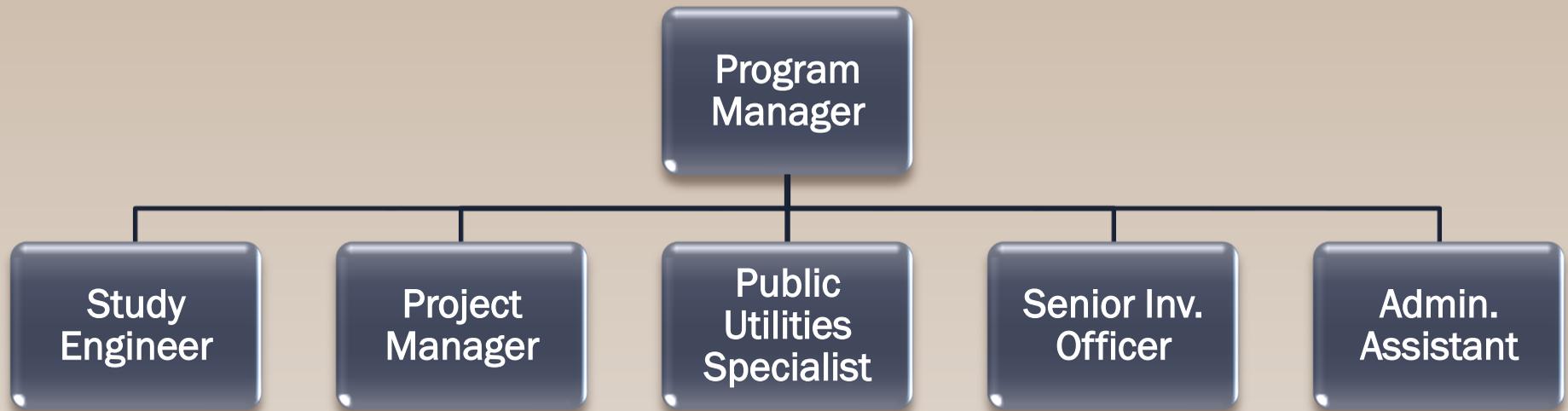


# PROJECT EVALUATION CRITERIA

- Facilitate delivery of renewable energy to market
- Public interest
- No adverse impact to system reliability
- Project will generate enough revenue to repay costs
- At least one terminus in Western's territory
- Economic benefits, including jobs
- Satisfies Western's OATT
- Technically feasible
- Partners' financial stability and capability Project readiness
- Participation in region-wide and/or interconnection-wide transmission planning



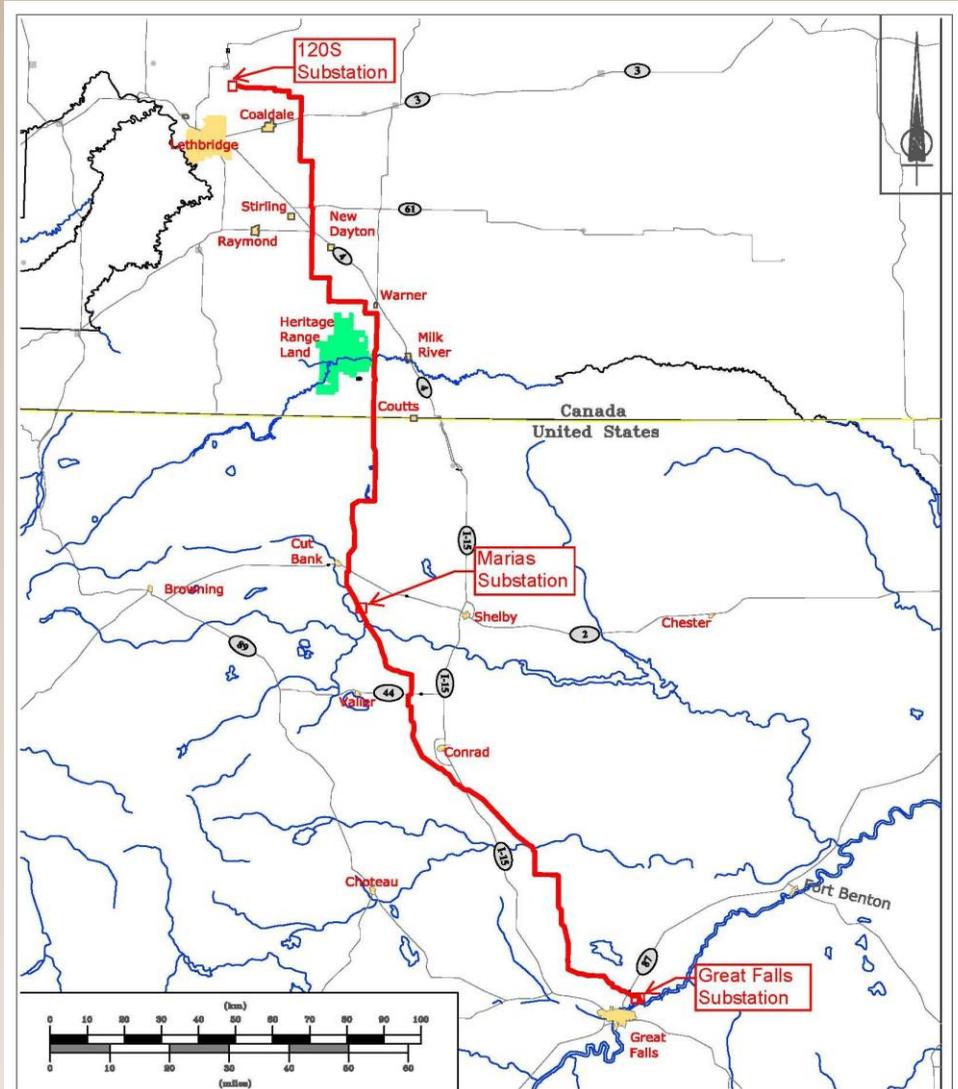
# TIP OFFICE



TIP office, created in May 2009, establishes the policies and practices to implement Western's borrowing authority



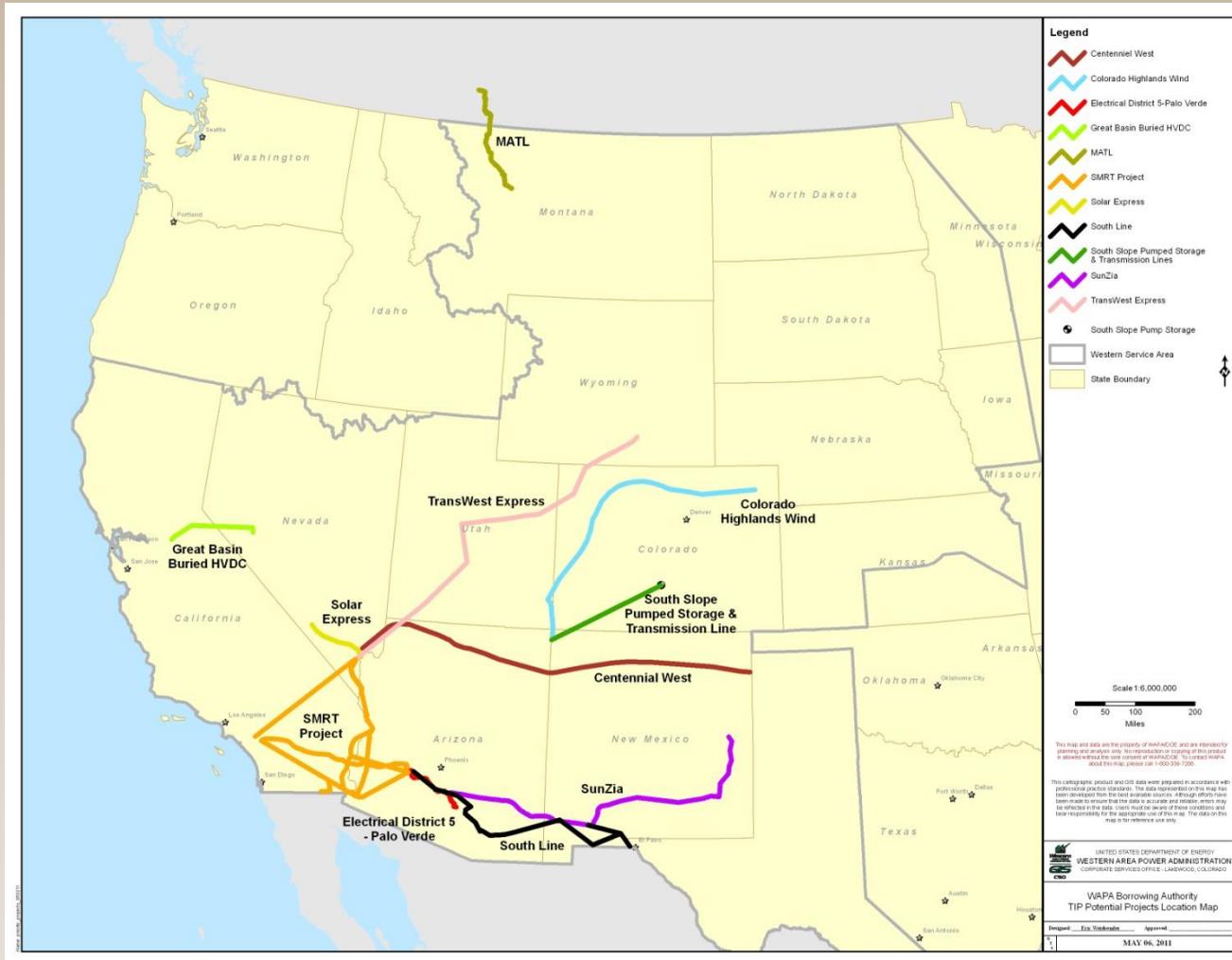
# MATL - SELECTED PROJECT - WESTERN AS FINANCIER



- New 230-kV transmission from Lethbridge, Alberta to Great Falls, Montana
- 300 MW (bi-directional) of wind energy connecting near line's midpoint
- \$161 million in TIP funding; \$213 million project cost
- Substation construction began June 2010
- Transmission construction began August 2010
- Commercial Operation Date Late 2011



# PROJECT PROPOSALS UNDER DISCUSSION





# TWE – PUBLIC/PRIVATE PARTNERSHIP

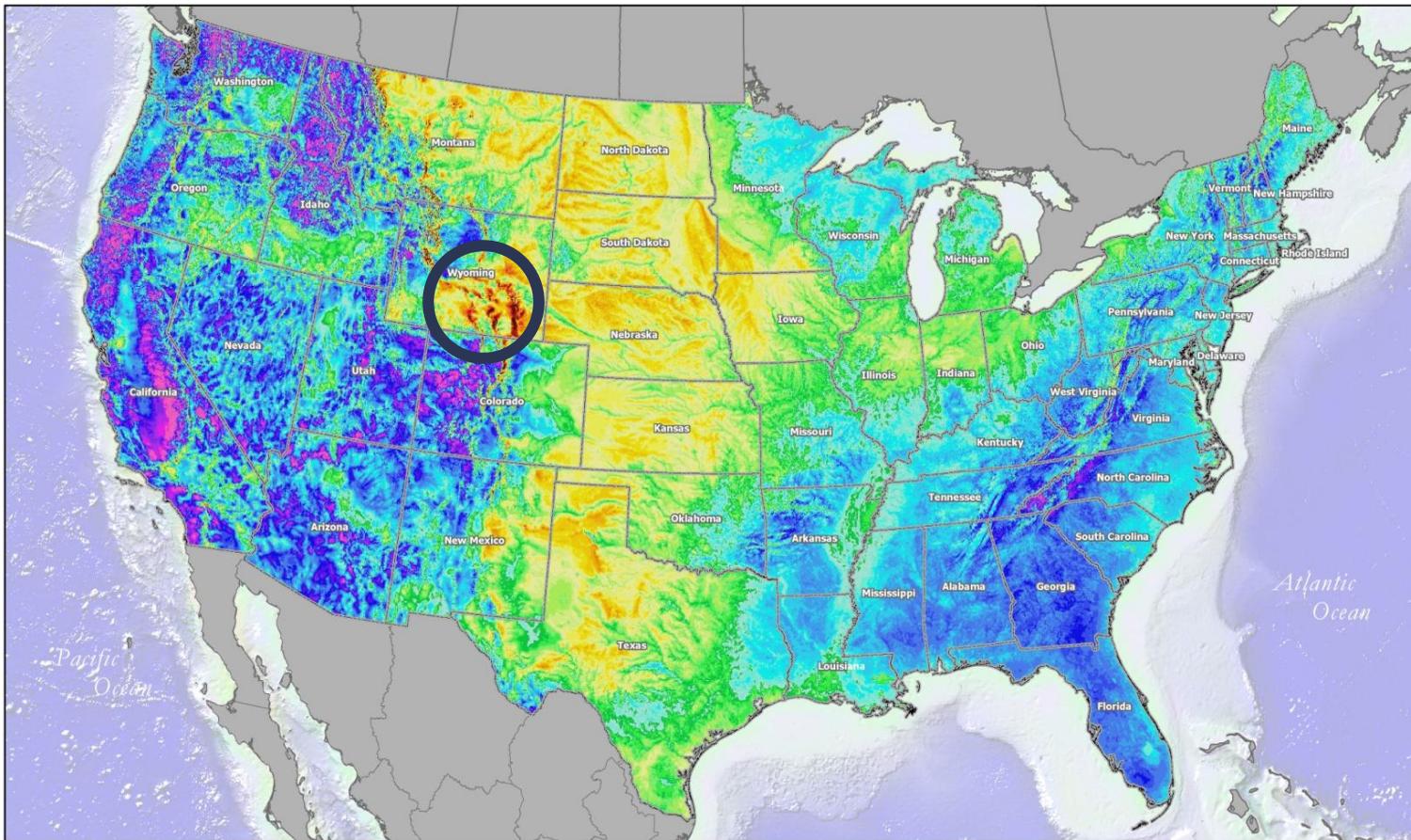
- 3,000 MW capacity
- 600 kV HVDC
- About 725 miles
  - Federal: 434
  - Private: 240
  - State: 51
- 2015 in-service date
- Capable of delivering reliable, cost-effective renewable energy from various Wyoming wind projects
- Western joint lead with BLM on EIS



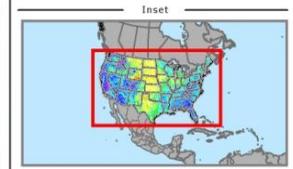


# HIGH-QUALITY WYOMING WIND

## WIND RESOURCE OF THE UNITED STATES Mean Annual Wind Speed at 80 Meters

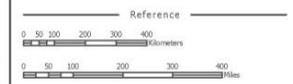


windNAVIGATOR<sup>™</sup>  
Chart Your Course



Legend

Mean Annual Wind Speed at 80m	
m/s	
< 3.00	6.50 - 6.75
3.00 - 3.25	6.75 - 7.00
3.25 - 3.50	7.00 - 7.25
3.50 - 3.75	7.25 - 7.50
3.75 - 4.00	7.50 - 7.75
4.00 - 4.25	7.75 - 8.00
4.25 - 4.50	8.00 - 8.25
4.50 - 4.75	8.25 - 8.50
4.75 - 5.00	8.50 - 8.75
5.00 - 5.25	8.75 - 9.00
5.25 - 5.50	9.00 - 9.25
5.50 - 5.75	9.25 - 9.50
5.75 - 6.00	9.50 - 9.75
6.00 - 6.25	9.75 - 10.00
6.25 - 6.50	> 10.00



Wind Data Resolution: 2.5 km  
Coordinate System: N. America Lambert Conformal Conic  
Datum: NAD83  
Date: June 2008

**Disclaimer**  
This map depicts the approximate annual average wind speed over a 2.5-kilometer (1.6-mile) wide grid square at the indicated height above ground. It was created by AWS Truewind using its advanced atmospheric models and historical weather data and derived from AWS Truewind's high-resolution 200 m MapMap® product. The map is intended to provide a general indication of the wind resource over large areas, and should not be used to design wind projects or to estimate energy production. For further information on services that address wind project design and energy production, please visit the Services section of our website or contact us.



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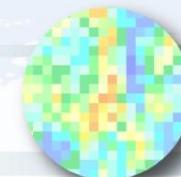
10 km



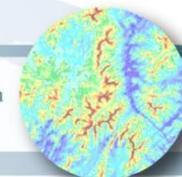
5 km

### The Difference Is Clear

Higher resolution means higher confidence. Our emphasis on high-resolution modeling and extensive validation has resulted in products that energy developers and government planners rely upon for siting projects and assessing development potential. With windNavigator you get the accuracy and quality you have come to expect from AWS Truewind with the convenience of an online environment. Chart Your Course<sup>™</sup>



2.5 km



200 m





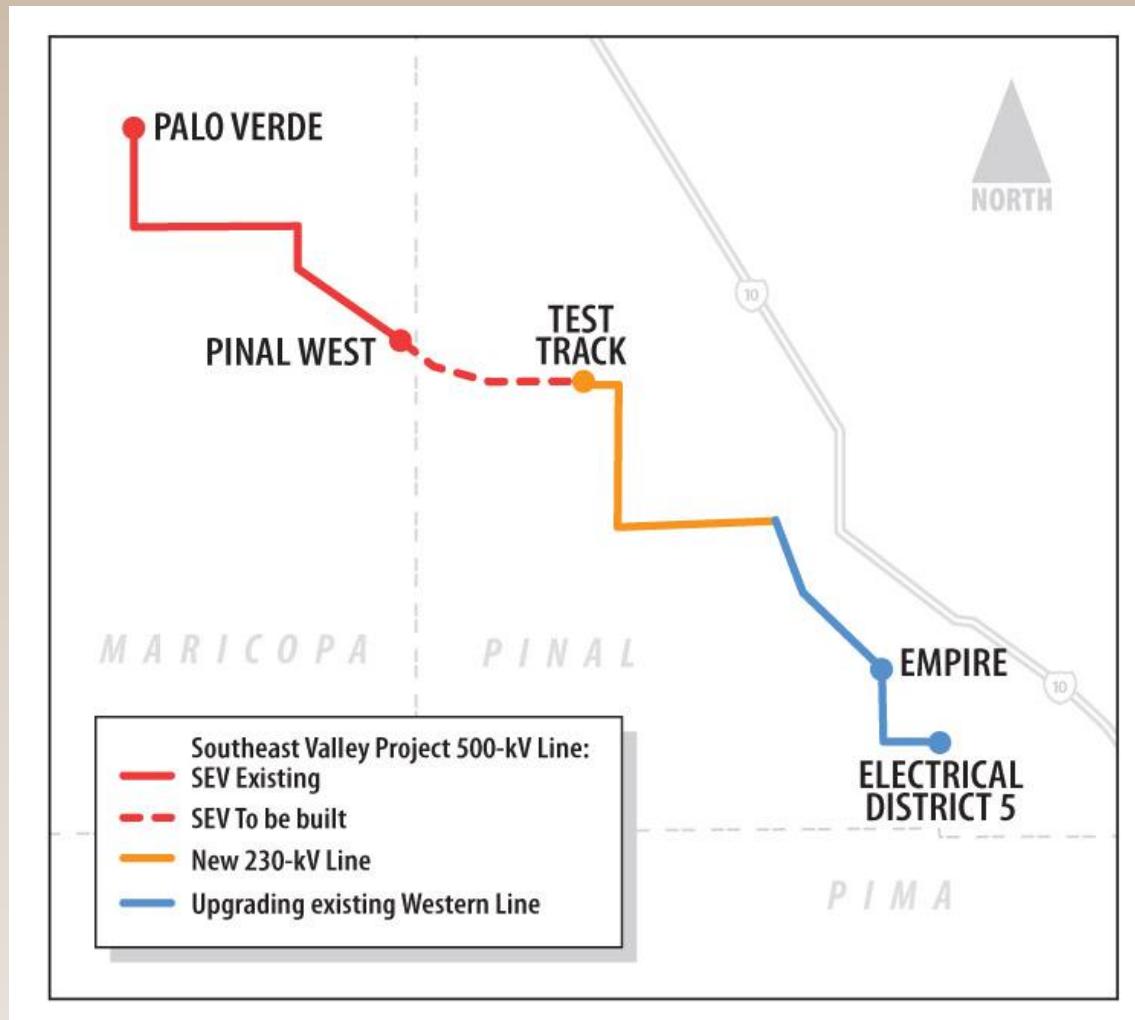
# TRANSWEST PROJECT PROPOSAL – PUBLIC/PRIVATE PARTNERSHIP

- 2010: TWE and Western enter into non-binding agreement for Western to potentially acquire 50% ownership of the TWE Project
- 2010-11: TWE and Western continue due diligence and working to define the partnership to construct, operate and maintain TWE Project
- Financing: Western will finance its ownership contribution using borrowing authority; funds ultimately will be repaid to Treasury with interest through the transmission rate for this facility.



# ED5-PALO VERDE HUB PROJECT PROPOSAL – CUSTOMER PARTNERSHIP

Maricopa & Pinal Counties, AZ





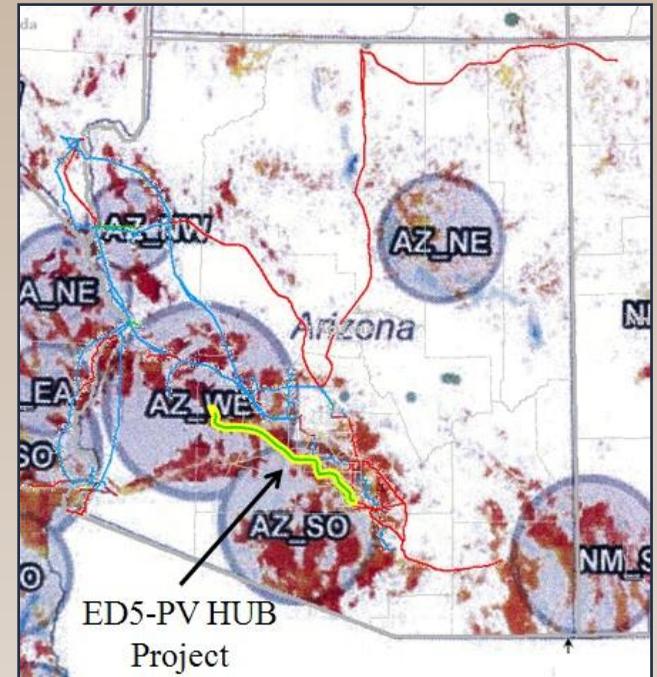
# ED5-PALO VERDE HUB PROJECT PROPOSAL – CUSTOMER PARTNERSHIP

- Western's Desert Southwest Region and the Southwest Public Power Resources Group
- 45 circuit-miles of new and upgraded Western transmission line
- Purchase capacity rights on 64 miles of the Southeast Valley Project (SEV) 500-kV line
- Cost Estimate: \$79.34 million
- EA: Complete Summer 2011
- In Commercial Operation: 2015



# OVERALL ED5-PVH PROJECT BENEFITS

- “Right-sized” to promote renewable energy development in region, especially solar
- Stimulate local economy - jobs
- Upgrading existing lines to add capacity, increase reliability, minimize project impact
- Enhances regional reliability of transmission services
- Partners committed to capacity and will repay principal investment, operating costs and interest through facilities use charge
- Renewable power for up to 15,000 homes



Western Governors'  
Association Renewable Energy  
Zones



# WESTERN CONTACTS

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