

# Science, Technology and Telecommunications Committee

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Jeremy Turner, Executive Director

November 18, 2013

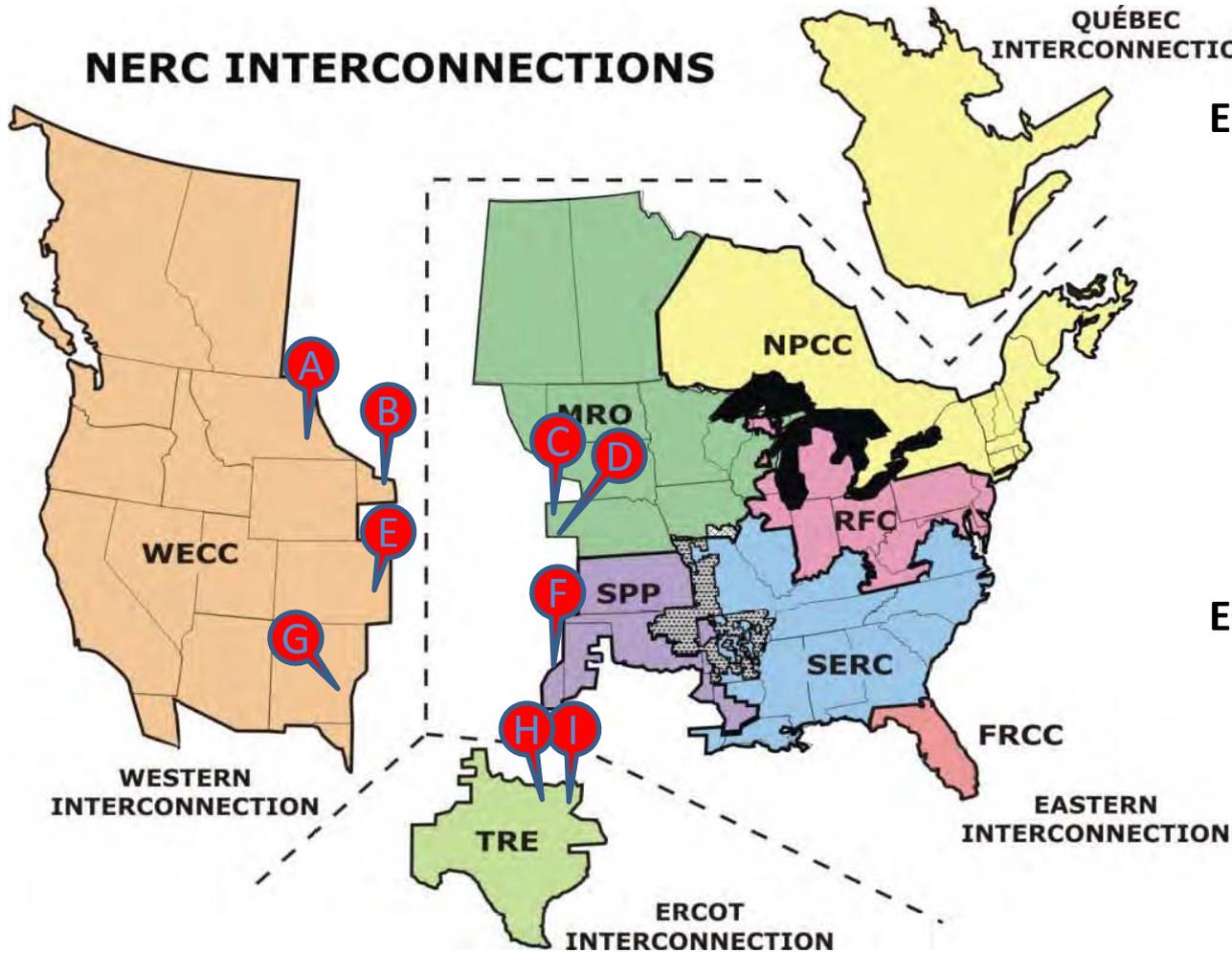
# NM RETA

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RETA was established by the NM legislature in 2007 to plan, finance, develop and acquire high voltage transmission lines and storage projects in order to promote economic development in New Mexico.

RETA is one of only eight state level transmission authorities in the United States and only the second to have issued Bonds. Along with its ability to issue debt, RETA has the power of eminent domain to insure project success. All RETA sponsored projects must include 30% of the power from renewable resources.

# Interconnection Areas



## Eastern to Western

- A: Miles City, MT— 200MW
- B: Rapid City, SD— 200MW
- C: Stegall, NE— 100MW
- D: Sidney, NE— 200MW
- E: Lamar, CO— 210MW
- F: Blackwater, NM—200MW
- G: Artesia, NM— 200MW

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**Total: 1310MW**

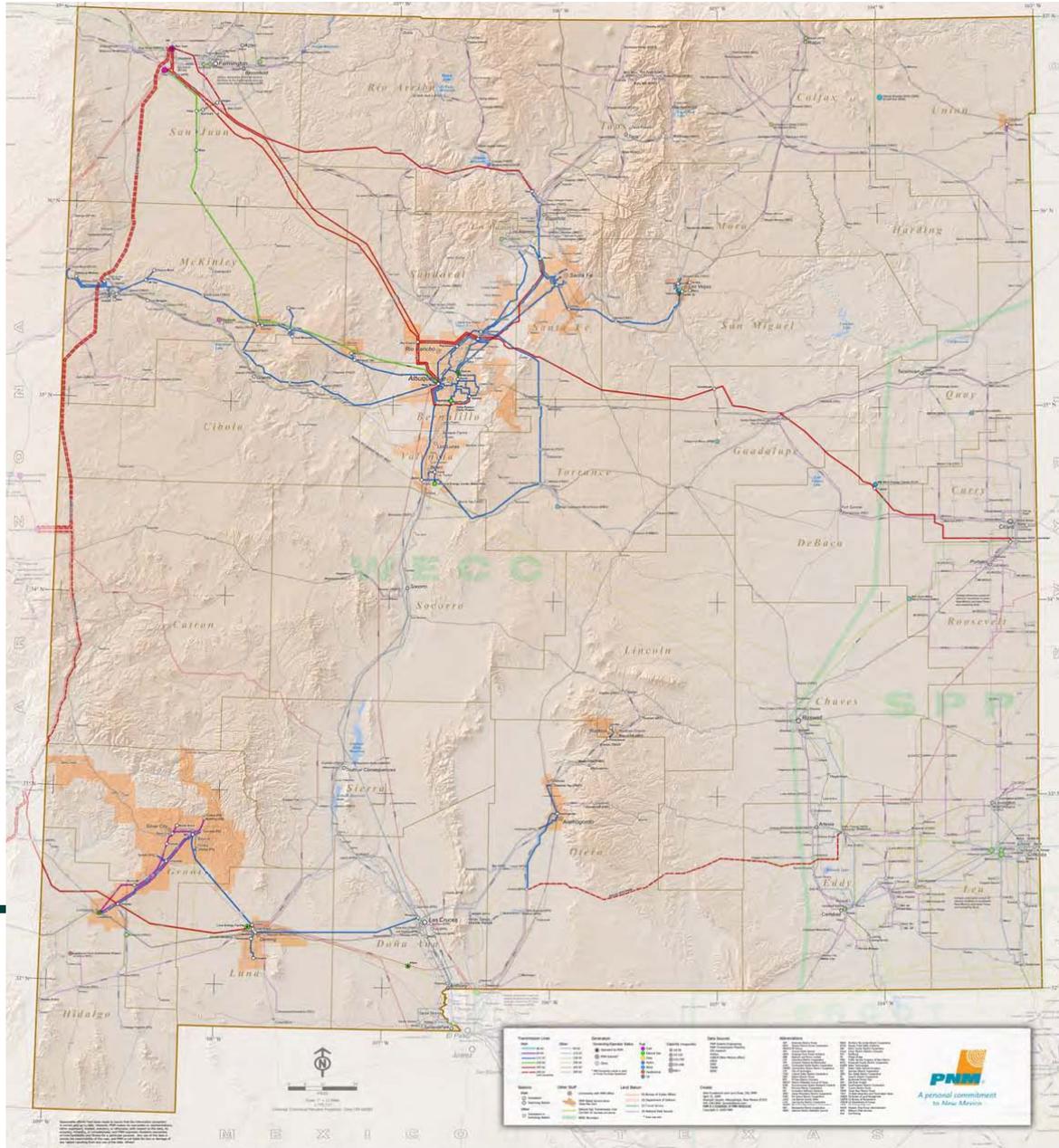
## Eastern to ERCOT

- H: Oklaunion, TX— 200MW
- I: Monticello-Welsh, TX—600MW

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**Total: 800MW**

# New Mexico's Grid



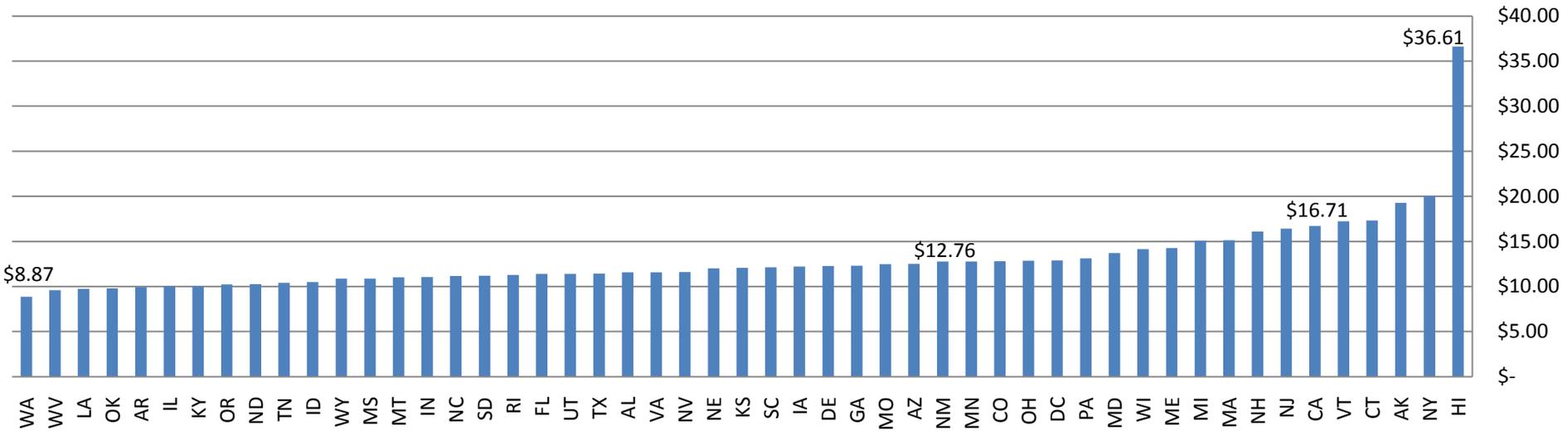
# New Mexico's Providers

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- Investor Owned Electric Utilities
    - Public Service Company of New Mexico, El Paso Electric, Xcel
  - Electric Cooperatives (Co-Ops) - 19 distribution co-ops and two generation & transmission co-ops
    - Central NM Electric, Central Valley Electric, Columbus Electric, Continental Divide Electric, Duncan Valley Electric, Farmer's Electric, Jemez Mountain Electric, Kit Carson Electric, Lea County Electric, Mora-San Miguel Electric, Navopache Electric, Northern Rio Arriba Electric, Otero County Electric, Rio Grande Electric, Roosevelt County Electric, Sierra Electric, Socorro Electric, Southwestern Electric, Springer Electric
    - Tri-State Generation & Transmission Association and Western Farmer's Electric Cooperative
  - Municipal Run Electric Utilities
    - Raton Public Service, Farmington Electric Utility, Gallup Electric Utility, T or C Utility and Los Alamos County Utility
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# Average Retail Rates

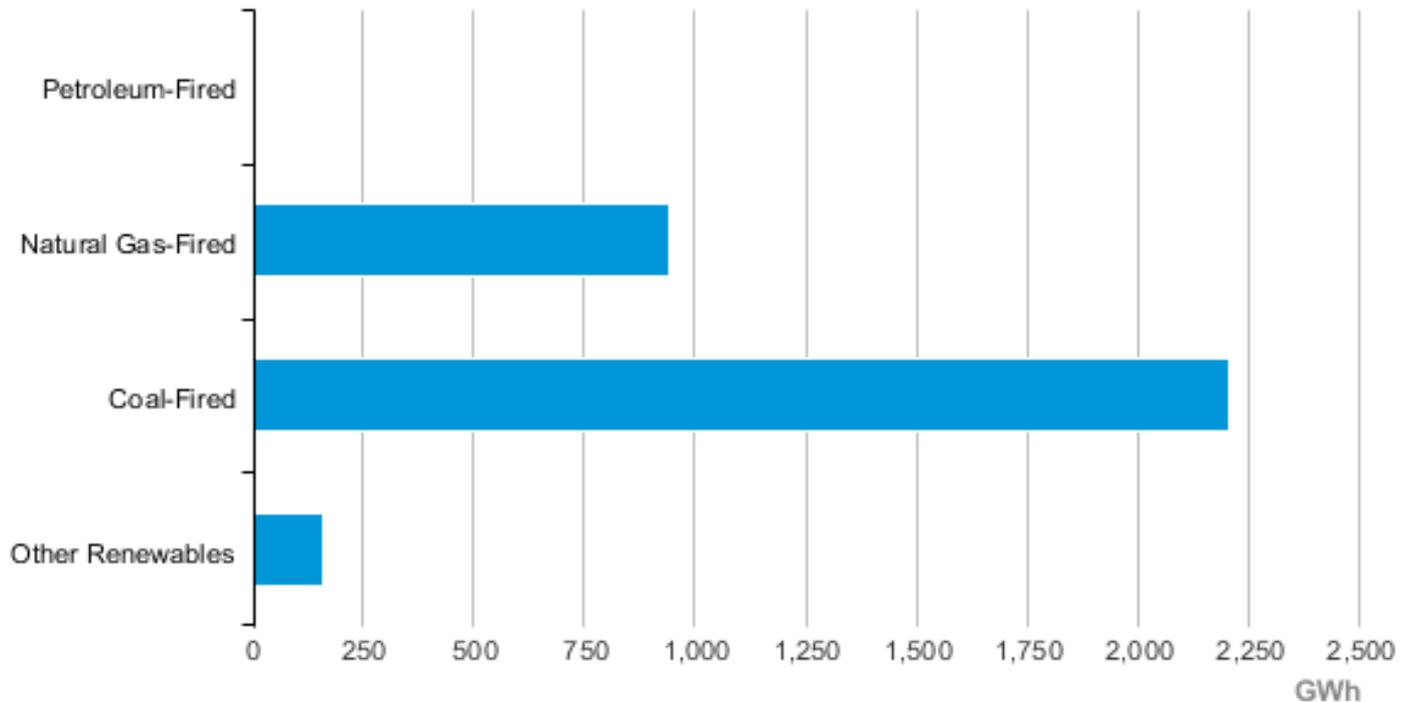
Average Retail Price of Electricity to Residential Sector, July 2013  
(cents/kWh)



SRC: eia.gov

# Generation Sources

New Mexico Net Electricity Generation by Source, Jul. 2013



Source: Energy Information Administration, Electric Power Monthly

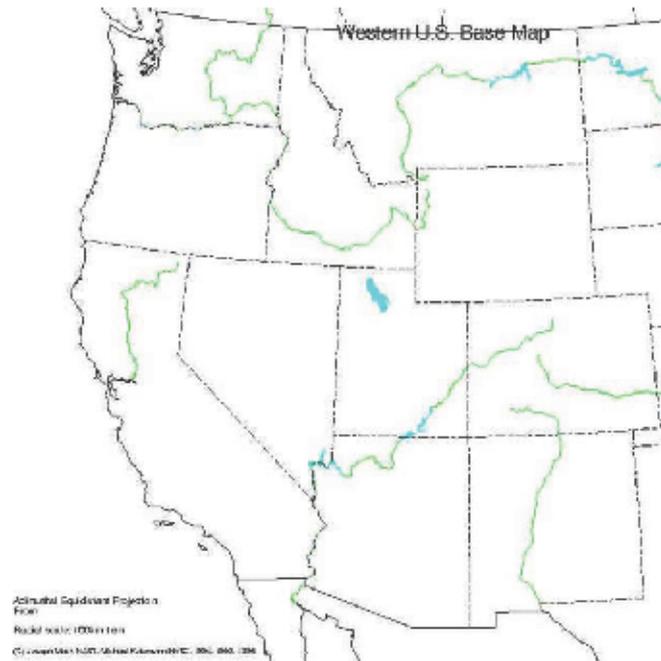
- New Mexico exports nearly 1/3 of all electric generation produced in the State

# Planned Coal Retirements

## Coal Retirements:

Arizona  
Colorado  
Montana  
Nevada  
New Mexico  
Oregon  
Utah  
Washington  
Wyoming

5,000+ MW of Announced Coal Retirements in 9 Western States (2013-2019)



# Current NM Solar Projects

| NM Solar Projects            | Utility    | Date Online | MW           |
|------------------------------|------------|-------------|--------------|
| Cimarron - First Solar       | Tri-State  | 2010        | 30           |
| KC owned DG                  | Kit Carson | 2010        | 1            |
| KC owned CPV                 | Kit Carson | 2010        | 1.3          |
| Sun Edison                   | SPS        | 2011        | 50           |
| First Solar                  | PNM        | 2011        | 22           |
| Sun Edison                   | EPE        | 2011        | 24           |
| NRG                          | EPE        | 2011        | 20           |
| Hatch                        | EPE        | 2011        | 5            |
| Total Distributed Generation |            |             | 19.5         |
| <b>Total</b>                 |            |             | <b>172.8</b> |

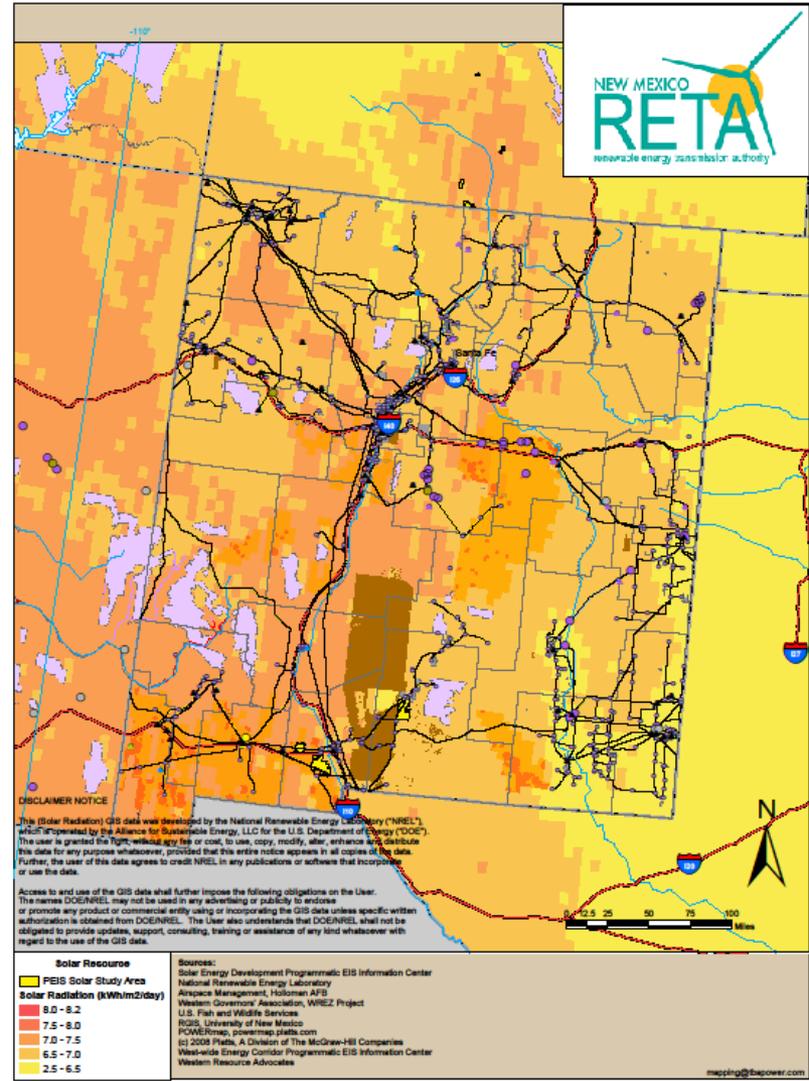
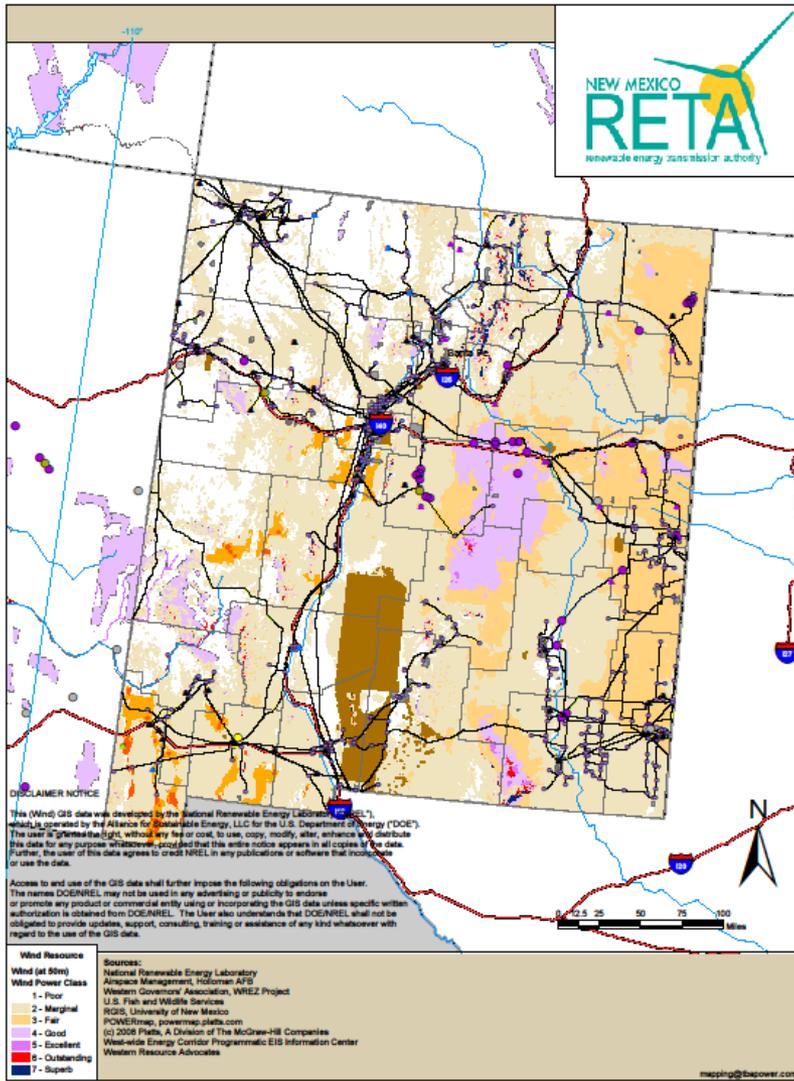
Source: NM Public Regulation Commission

# Current NM Wind Projects

| NM Wind Projects - PPAs | Utility     | Date Online | MW           |
|-------------------------|-------------|-------------|--------------|
| Clovis                  | SPS         | 1999        | 0.7          |
| Llano Estacado (Texico) | SPS         | 2003        | 2.0          |
| NM Wind Energy Center   | PNM         | 2003        | 204          |
| Caprock                 | SPS         | 2004        | 60           |
| Caprock II              | SPS         | 2005        | 20           |
| San Jon                 | SPS         | 2005        | 120          |
| Aragonne Mesa           | APS – Az    | 2007        | 90           |
| High Lonesome           | SPS         | 2009        | 100          |
| Red Mesa                | Independent | 2010        | 102          |
| <b>Total</b>            |             |             | <b>698.7</b> |

Source: NM Public Regulation Commission

# New Mexico Wind & Solar Resources



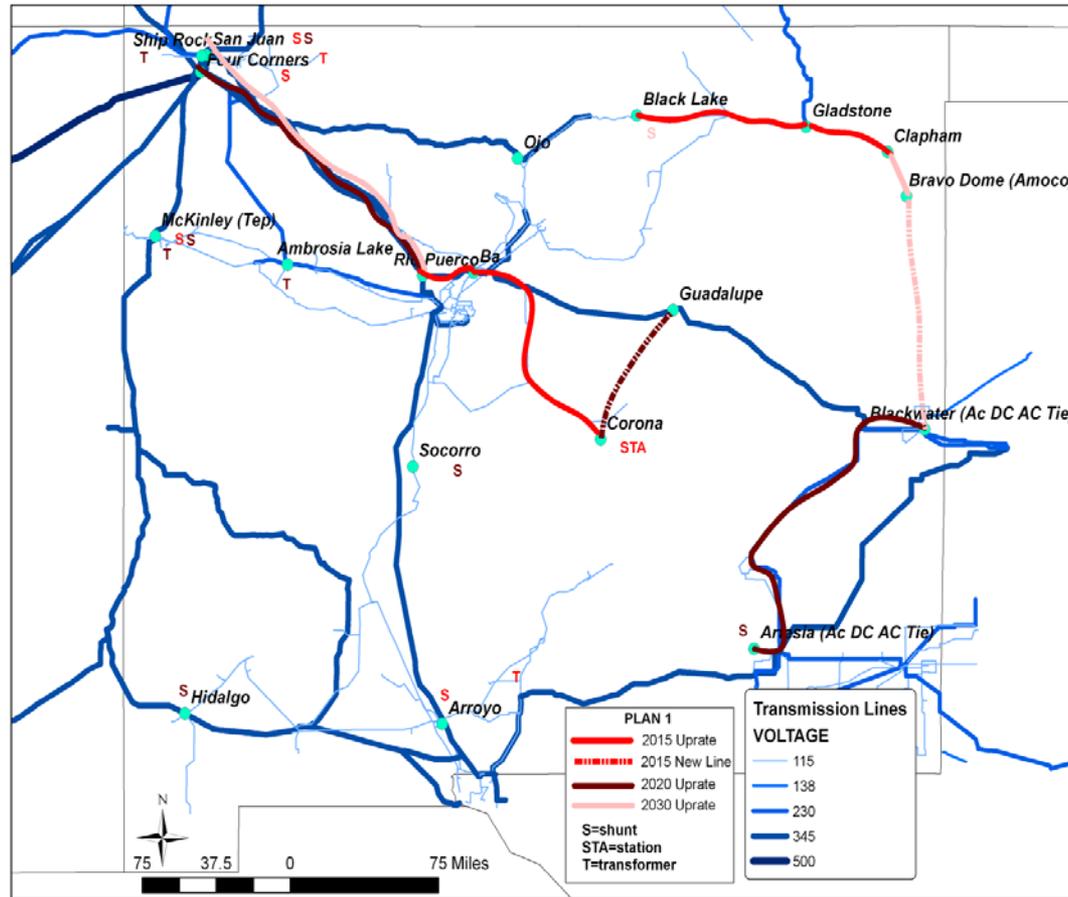
# RETA's Goal for the State

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- Commissioned Los Alamos National Laboratory to complete an independent study to evaluate statewide transmission concepts, economic benefits, and cost allocation methodology
  - The Study was completed in 2010 and analyzed
    - Two potential systems, looped vs. radial line upgrades, necessary to export 5,200 MW of generation
    - Upgrades on a 5, 10, and 20 year planning cycle
    - Economic benefits and cost recovery options
      - Total direct and indirect jobs that will be created
      - Potential tax implication of each plan
      - Energy tax required to support each potential system
    - RETA MOU with Lucky Corridor, LLC and Joint Development with Clean Line directly advances the build-out of the system identified by this study
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# RETA's Goal for the State

## Suggested Grid Improvements:



# RETA Supported Projects

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- High Lonesome Mesa (HLM)
  - RETA financed project - 2010
  - 100 MW Wind Farm located in Torrance County
  - \$220 million investment in NM
  - HLM issued IRB's through Torrance County and bonds through RETA
  - This project brought \$14 million in lieu of taxes to Torrance County & Estancia Schools and \$19 million in lease payments to Torrance County Landowners
- Blue Mesa Energy
  - RETA letter of support
  - 150 MW Wind Farm
  - Located near Wheatland
- Lucky Corridor, LLC
  - Memorandum Of Understanding (MOU) with RETA since 2009
  - July 2013, the MOU was revised to define RETA's potential participation in the project
  - Transmission project from Gladstone to Taos

# RETA Supported Projects, Cont.

- Centennial West Clean Line
  - Memorandum Of Understanding (MOU) with RETA since 2009
  - July 2013, the MOU was revised to define RETA's potential participation in the project
  - 3,500 MW project from Union County, NM to California
- Western Spirit Clean Line (Central NM Collector System)
  - RETA joint development
  - Transmission project located in Central NM (Torrance, Santa Fe, Guadalupe and Sandoval Counties)
  - Project was originally being jointly developed by Goldman Sachs Infrastructure Partners II and RETA
  - In 2012, FERC denied a request to accelerate development of the project which resulted in GSIP selling its interest in the project to Clean Line Energy
  - Clean Line Energy is a company focused on the development of transmission lines to connect renewables to the market
  - Clean Line has four other projects under development in the United States
  - The Western Spirit Project is now projected to be in service by 2017/2018 instead of 2015 as discussed with the committee last year
  - Clean Line continued the lease with RETA which establishes RETA ownership

# Appendix – Maps

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## **Projects Supported by RETA**

- Page 17: Blue Mesa Energy – Wind Farm in Eastern NM
- Page 18: Lucky Corridor, LLC – Line between Taos & Farley NM
- Page 19: Centennial West Clean Line – Line from NM to CA
- Page 20: Western Spirit Clean Line – Line located in Central NM

## **Other Projects being Studied in NM**

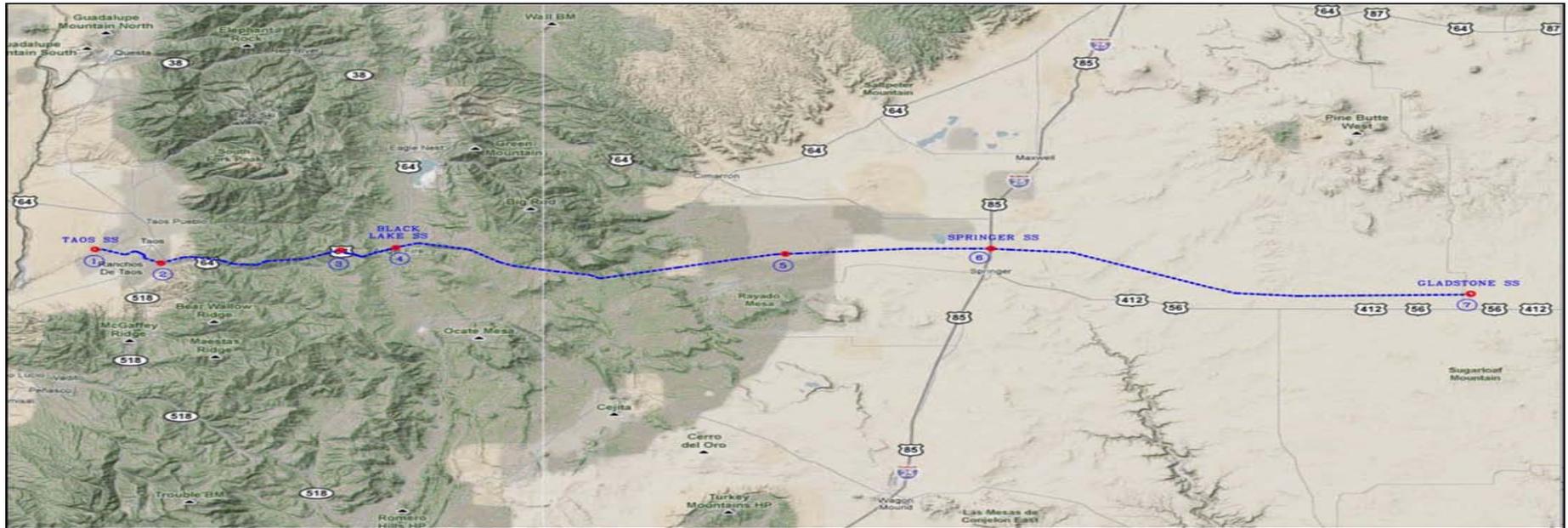
- Page 21: Southline – Line from NM to AZ
  - Page 22: SunZia – Line from NM to AZ
  - Page 23: High Plains Express – Line from WY to NM
  - Page 24: Tres Amigas Superstation – Interconnection of the three US Grids
  - Page 25: Project Websites
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# Blue Mesa Energy – Wheatland Project



- Approximate 150 MW development with more than 40,000 acres under option.
- Adjacent to Cap Rock Wind project
- Meteorological tower up for approximately 5 years which reflects an average wind speed of 8 meters per second at a height of 50 meters.
- The Project property has a prospective transmission intertie located within the optioned boundaries

# Lucky Corridor, LLC



## Project Info:

Approximately 1,100MW bi-directional capacity

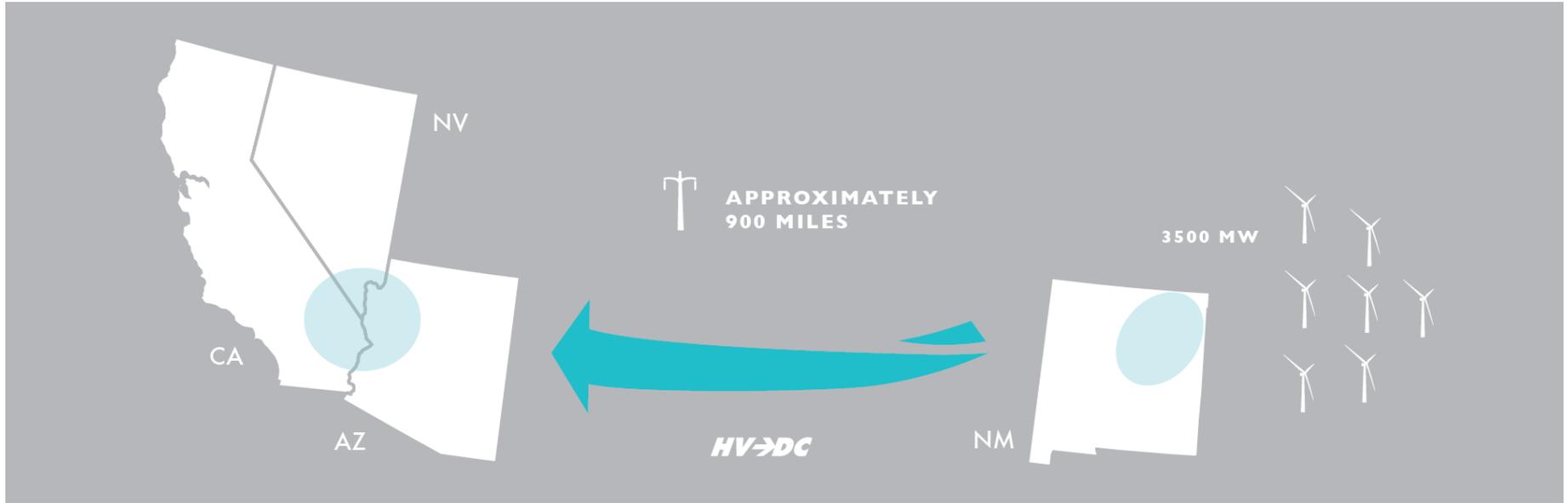
Double circuit 230 kV - Expansion of Taos & Blacklake substations

MOU with RETA

Projected Cost: \$360 million

Project Began in 2007 with a planned in service date of 2016

# Centennial West Clean Line



## Project Info:

3,500 MW from NM to CA

Overhead HVDC line

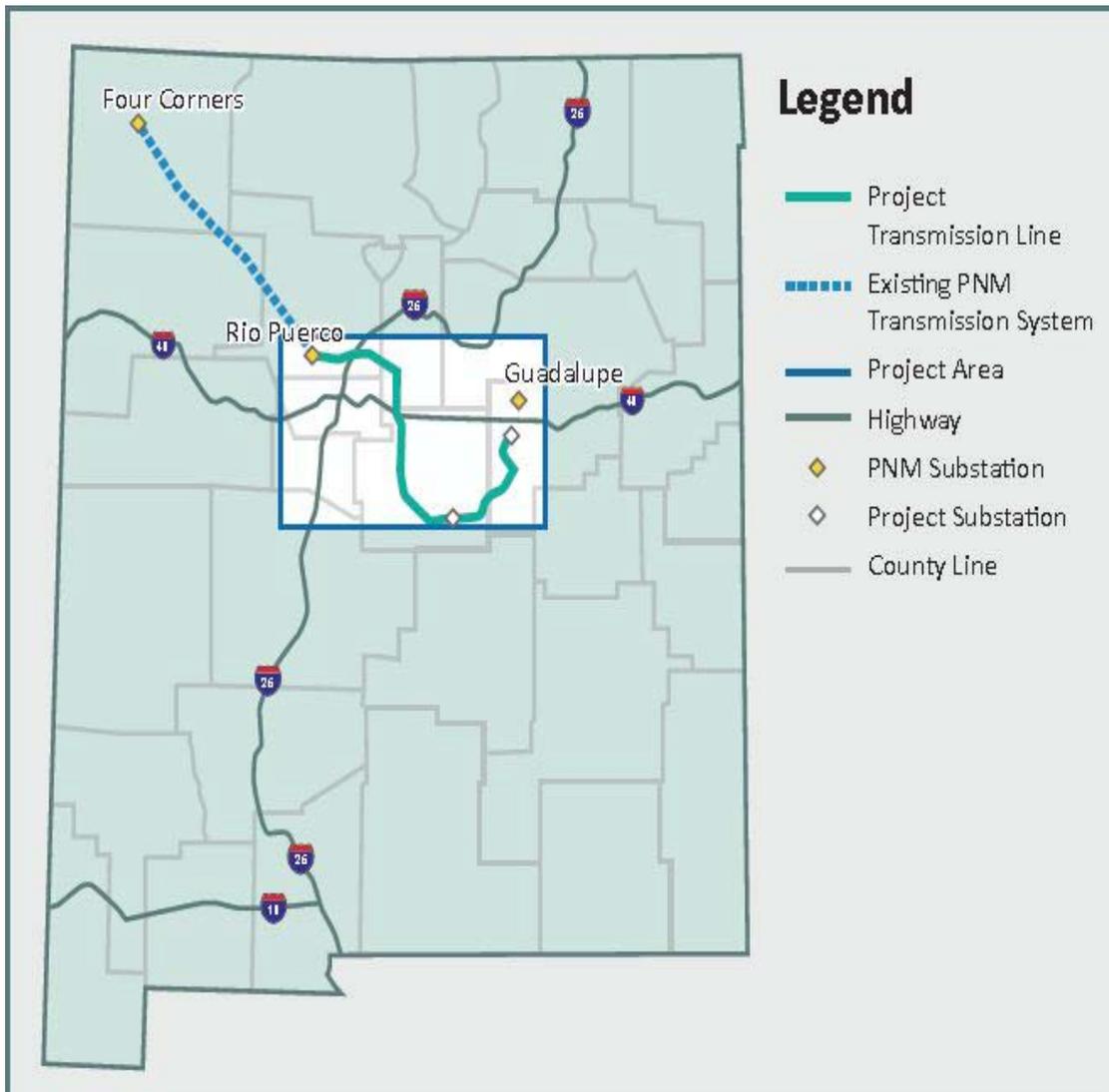
Approx. 900 miles

Projected Cost: \$2.5 Billion

Project Began in 2008 with a planned in service date of 2018

MOU with RETA

# Western Spirit Clean Line



- 1,500 MW capacity
- \$350 million, Double-circuit 345 kV AC line
- Approximately 200 miles
- Project Participants
  - RETA
  - Clean Line Energy
- Approximately \$3 billion in renewable development
- Approximately 1,700 construction jobs
- Approximately 120 permanent jobs

# Southline



## Project Info:

1,500 MW from NM to AZ, Double-circuit 345 kV AC

Improvements to approximately 120 miles of existing transmission lines between the Apache (AZ) and Saguario (AZ) substations

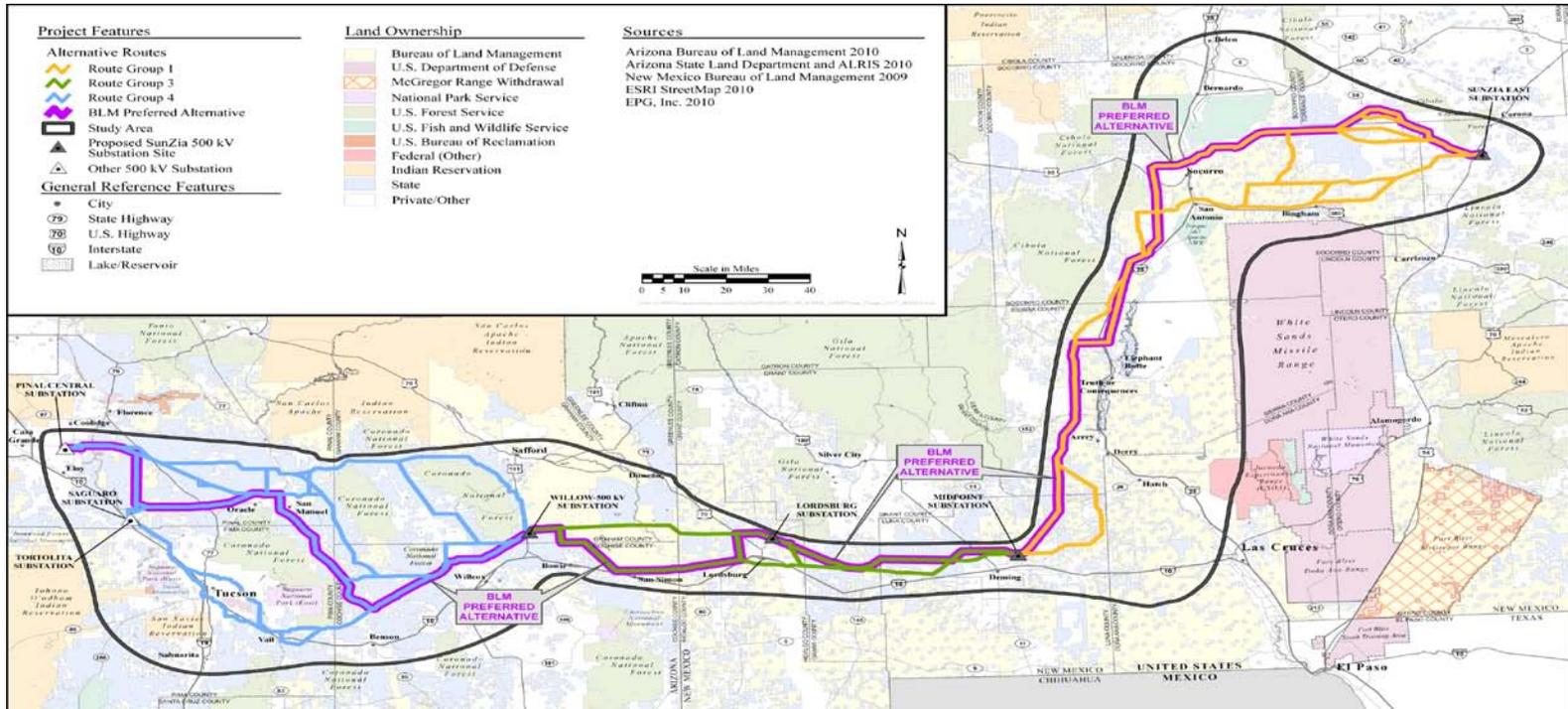
Approx. 240 miles

Projected Cost: \$550 million

Project Began in 2008 with a planned in service date of 2018

Project Owner – Southline/Hunt Trans

# SunZia



## Project Info:

3,000-4,500 MW  
from NM to AZ

Double circuit 500 kV AC line or AC/DC  
hybrid configuration

Approx. 460 miles

Projected Cost: \$2.1  
billion

Project Began in 2006 with a planned in  
service date of 2018

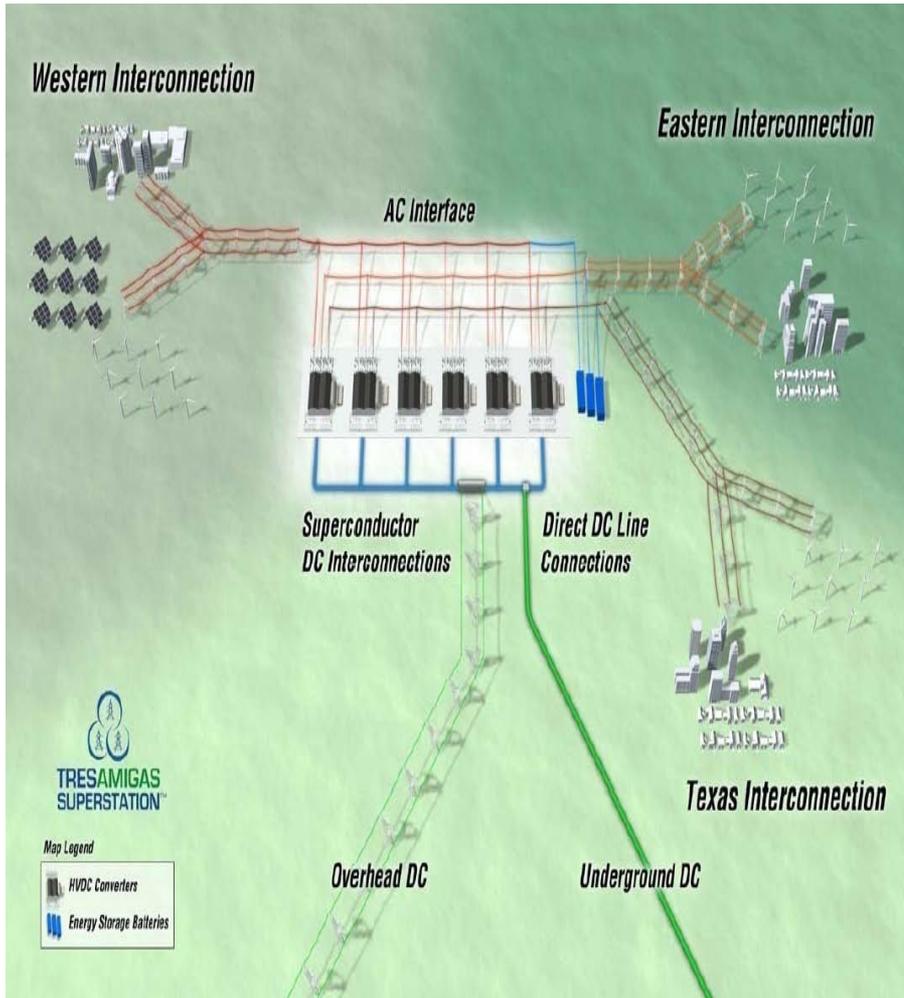
Several project  
participants

# High Plains Express

- 3,500 MW from WY to AZ
- Double-circuit 500 kV AC
- \$5 Billion
- Project participants
  - Black Hills Corp.
  - Colorado clean Energy Development Authority
  - LS Power
  - NextEra Energy Resources
  - Public Service Co. of NM
  - Salt River Project
  - Tri-State Generation & Transmission Assoc.
  - Western Area Power Administration
  - Wyoming Infrastructure Authority
  - XCEL Energy



# Tres Amigas



- Superstation to interconnect the Nation's three grids
- Underground Superconductor cable
- Location – Eastern NM, near Clovis, NM
- Project Owner – Tres Amigas, LLC.

# Project Websites for Additional Info

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- Blue Mesa Energy – Wind Farm located in Eastern NM
    - [www.blumesaenergy.com](http://www.blumesaenergy.com)
  - Lucky Corridor – Line in Northern New Mexico
    - [www.luckycorridor.com](http://www.luckycorridor.com)
  - Centennial West/Clean Line – Line from NM to California
    - [www.cleanlineenergy.com](http://www.cleanlineenergy.com)
  - Western Spirit /Clean Line – Line in Central NM
    - [www.nmreta.net](http://www.nmreta.net)
  - Southline – Line from New Mexico to Arizona
    - [www.blackforestpartners.com](http://www.blackforestpartners.com)
  - SunZia – Line from New Mexico to Arizona
    - [www.sunzia.net](http://www.sunzia.net)
  - High Plains Express - Line from Wyoming to New Mexico
    - [www.highplainsexpress.com](http://www.highplainsexpress.com)
  - Tres Amigas Superstation – Interconnection of three Grids
    - [www.tresamigasllc.com](http://www.tresamigasllc.com)
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# Contact Us

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## New Mexico Renewable Energy Transmission Authority

Jeremy Turner, Executive Director

1516 Paseo de Peralta

Santa Fe, NM 87501

[www.nmreta.net](http://www.nmreta.net)

**(505) 983-4458**

