



New Mexico Renewable Energy Transmission Authority

Energy Storage Workshop

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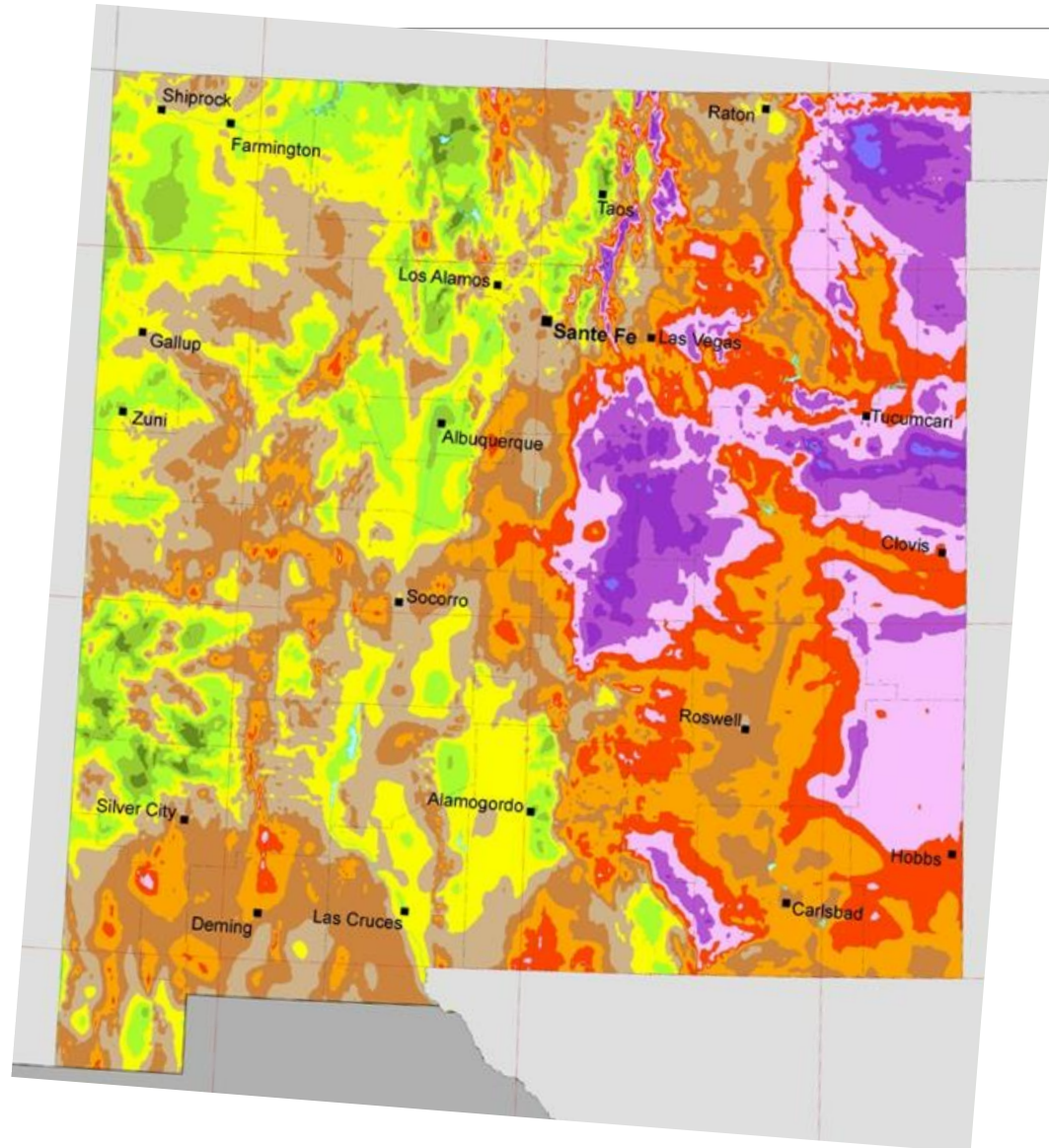
NM RETA Background

- New Mexico has some of the most extensive and valuable wind and solar resources in the United States yet has virtually no transmission capacity to access them. RETA was formed to aggressively help develop transmission and storage to cultivate this unique opportunity.
- 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 several state-level transmission authorities in the United States and only the second to have issued Bonds. RETA sponsored projects must transmit at least 30% of its power from renewable resources. RETA's current projects are planned to have 100% of their power originate from renewable resources.
- RETA is working with developers to deliver clean electricity from wind and solar resources to both in-state and export markets.
- RETA has partnership agreements with three projects in development and MOUs with more.



Wind Development Potential

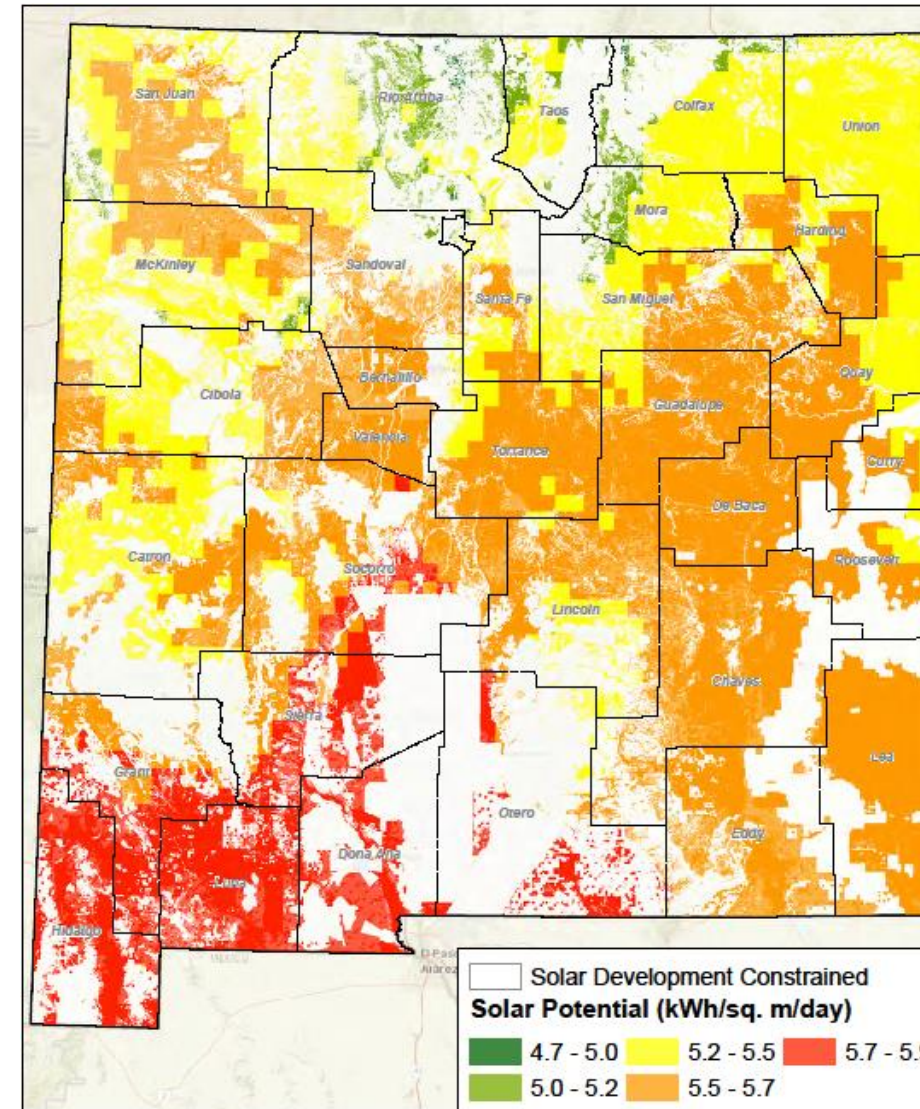
- Total developable land area for commercially viable wind equals 20,500 sq. mi.
- 18,500 sq. mi. on State Trust and private lands.



137,000 MW of highest quality wind potential on State Trust and private lands.

Solar Development Potential

- Total developable solar land area equals 68,000 sq. mi.
- 49,000 sq. mi. on State Trust and private lands.
- Over 9,300 sq. mi. in highest output areas.



824,000 MW of highest quality solar potential on State Trust and private lands.



Western Energy Policies Have Changed Rapidly in the Last Few Years

- RETA is an essential link in supporting New Mexico's Energy Transition Act (ETA), which requires 100% zero-carbon electricity for utilities by 2045 and rural electric cooperatives by 2050.
- The ETA drives ~4 Gigawatts (GW)* of renewables by 2030, but renewables growth to 11.5 GW is possible by new transmission accessing export markets of Western states.
- ~78% of energy use in the West is now aligned on decarbonization.
- Similar policies in the West drive ~100 GW renewables by 2035.

* A Gigawatt is a unit of power equal to one billion watts and is enough energy to power about 750,000 homes.



Great Economics Are Driving Wind & Solar

- Wind and solar are now cheaper than new gas and new coal, even without federal tax credit incentives.
- Wind and solar are a large part of new energy markets based solely on low costs.
- By the early 2030's new wind and solar will be cheaper than existing natural gas.
- An organized Western grid will require transmission upgrades and a flexible grid.

ICF study for NRDC

RETA Transmission Study, 2020. New Mexico Renewable Energy Transmission and Storage Study, consultant ICF Resources LLC.
<https://nmreta.com/nm-reta-transmission-study/>

Sources: Energy Strategies, "Western Flexibility Assessment" (2019) and AWEA 2019 Q2 Market Report

Sources: Lazard, "Lazard's Levelized Cost of Energy Analysis" (2018); IRENA Future of Wind (2019)



Ongoing NM RETA Projects

- RETA entered into a Co-Development relationship with SunZia Transmission, LLC. SunZia is a 550-mile transmission project in New Mexico and Arizona, with about 315 miles located within New Mexico. SunZia will make possible billions of dollars of wind development in Central New Mexico.
- RETA entered into a Co-Development relationship with Ameren (acquired Lucky Corridor, LLC.) for the Mora Line project from Union County, through Colfax, Mora, and San Miguel Counties to interconnect tremendous renewable resources of Northeastern New Mexico with PNM's transmission system.
- RETA entered into an MOU with Invenergy for possible development of several hundred miles of electric transmission lines from Northeastern New Mexico to the 4-Corners hub in Northwestern New Mexico unlocking thousands of MW of renewable resources.
- There are other major developers working with RETA that are interested in forming a relationship with RETA. RETA is currently working on these agreements.
- Billions of dollars of transmission projects with thousands of jobs are moving towards the construction phase. RETA is the essential link in allowing our State to make renewables work and upgrading our transmission grid. RETA transmission projects are supporting more renewable energy projects that can help meet the requirements of the Energy Transition Act.

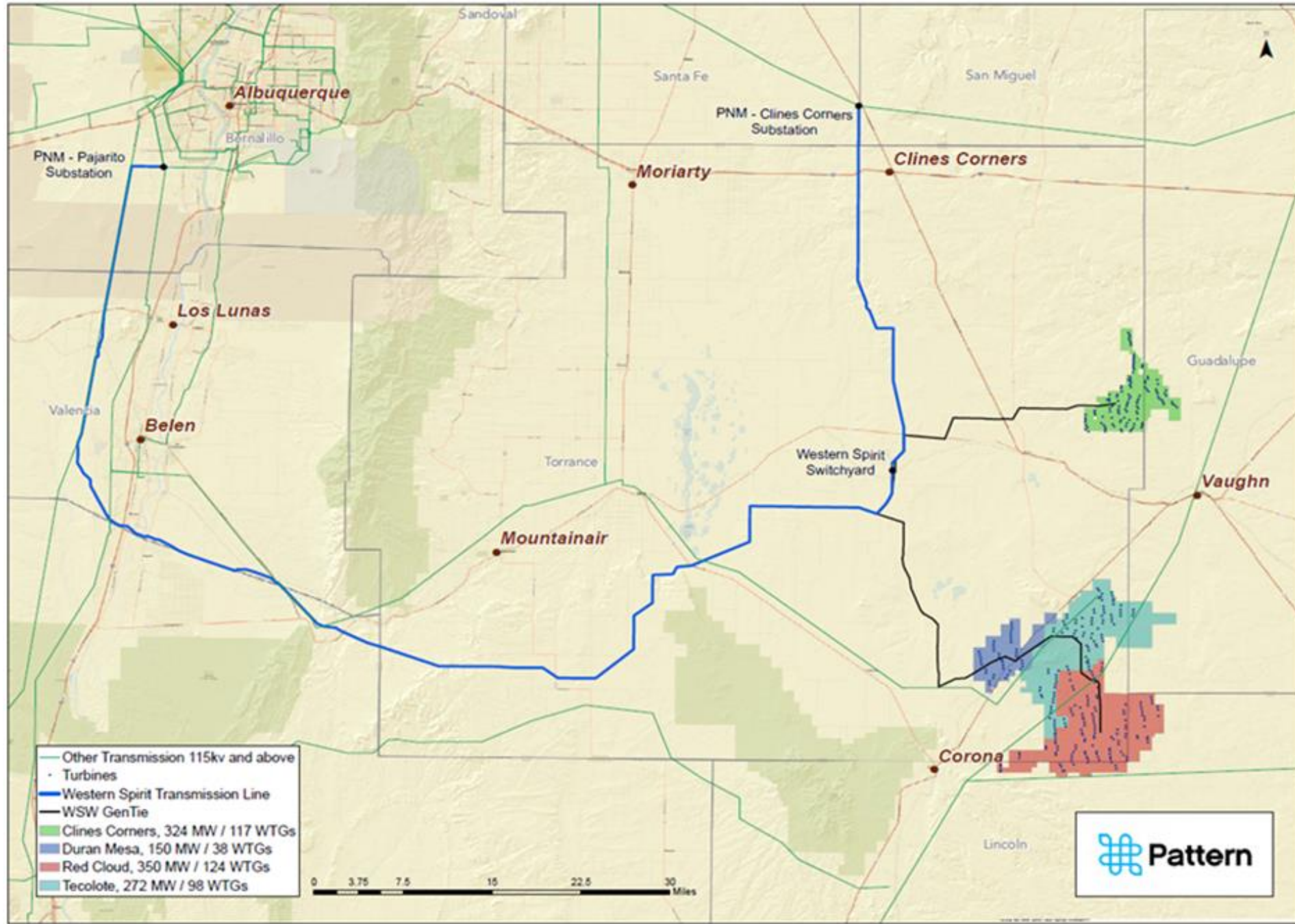


Western Spirit Transmission Line Project

- Western Spirit is an approximately 155-mile 345kV AC transmission line rated at 800 MW

- 100% of the power comes from renewable resources located in Central New Mexico
- A first of its kind public-private partnership
 - Owned by RETA and jointly developed with Pattern Development
- The project was initially identified by RETA in a study of the NM Transmission System by Los Alamos National Labs more than a decade ago
 - Western Spirit was in active development by RETA starting in 2010
- Completed in 2021, the Project was acquired by PNM and is now a part of their grid
 - The purchase of the Project did **not** impact New Mexico rate payers, 100% of the cost is borne by the wind farms that transmit energy along the line





Western Spirit Project Map



SunZia and El Rio Sol Projects

- Pattern Energy Group LP (Pattern Energy) recently acquired the SunZia Transmission project from SouthWestern Power Group, a wholly owned subsidiary of MMR Group, Inc. SunZia Transmission consists of a 550-mile bi-directional \pm 525 kV high-voltage direct current (HVDC) transmission line between central New Mexico and south-central Arizona, with the capacity to transport up to 3,000 MW of clean, renewable energy.
- SunZia Transmission previously awarded the full 3,000 MW of capacity on the transmission line to Pattern Energy. Pattern Energy is developing the SunZia Wind project, a 3,000+ MW facility in New Mexico, which will utilize the SunZia transmission line to provide enough safe, affordable, and renewable electricity to power the needs of 2.5 million Americans annually.
- SouthWestern Power Group will maintain ownership of a second 500 kV high voltage-alternating current (HVAC) transmission line rated at 1,500 MW, El Rio Sol Transmission.
- SunZia Transmission and SunZia Wind together comprise the largest renewable energy infrastructure project in U.S. history with a total investment of over \$8 billion. Both projects are privately funded and will deliver widespread economic benefits across New Mexico and Arizona.



Applicable New Mexico Statutes & Regulations

1. Environmental Improvement Act, NMSA 1978, § 74-1-1 *et seq.*
2. Air Quality Control Act, NMSA 1978, § 74-2-1 *et seq.*
3. Radiation Protection Act, NMSA 1978, § 74-3-1 *et seq.*
4. Hazardous Waste Act, NMSA 1978, § 74-4-1 *et seq.*
5. Radioactive and Hazardous Materials Act, NMSA 1978, § 74-4A-1 *et seq.*
6. Hazardous Waste Feasibility Study Act, NMSA 1978, § 74-4C-1 *et seq.*
7. Hazardous Chemicals Information Act, NMSA 1978, § 74-4E-1 *et seq.*
8. Voluntary Remediation Act, NMSA 1978, § 74-4G-1 *et seq.*
9. Water Quality Act, NMSA 1978, § 74-6-1 *et seq.*
10. Ground Water Protection Act, NMSA 1978, § 74-6B-1 *et seq.*



Applicable New Mexico Statutes & Regulations (cont.)

11. Environmental Compliance Act, NMSA 1978, § 74-7-1 *et seq.*
12. Solid Waste Act, NMSA 1978, § 74-9-1 *et seq.*
13. Solid Waste Authority Act, NMSA 1978, § 74-10-1 *et seq.*
14. Night Sky Protection Act, NMSA 1978, § 74-12-1 *et seq.*
15. Recycling and Illegal Dumping Act, NMSA 1978, § 74-13-1 *et seq.*
16. Water Research, Conservation and Development Act, NMSA 1978, § 75-2-1 *et seq.*
17. Endangered Plants, NMSA 1978, § 75-6-1 *et seq.*
18. Wildlife Conservation Act, NMSA 1978, § 17-2-37 *et seq.*
19. Habitat Protection Act, NMSA 1978, § 17-6-1 *et seq.*
20. Prehistoric and Historic Sites Preservation Act, NMSA 1978, § 18-8-1 *et seq.*



Applicable New Mexico Statutes & Regulations (cont.)

21. Cultural Properties Act, NMSA 1978, § 18-6-1 *et seq.*
22. Cultural Properties Protection Act, NMSA 1978, § 18-6A-1 *et seq.*
23. Reburial Grounds Act, NMSA 1978, § 18-6-24 *et seq.*
24. Construction Industries Licensing Act, NMSA 1978, § 60-13-1 *et seq.*
25. State Highway Commission Authority, NMSA 1978, §§ 67-11-2 & 67-3-6
26. New Mexico Public Utility Act, NMSA 1978, §§ 62-1-1 *et seq.*
27. New Mexico Renewable Energy Act, NMSA 1978, §§ 62-16-1 *et seq.*



Applicable New Mexico Statutes & Regulations (cont.)

26. Title 4, Chapter 10 NMAC, Properties and Historic Preservation
27. Title 18, Chapter 31, Part 6 NMAC, State Highway Access Management Requirements
28. Title 14, Chapter 5, Part 1 and 2 NMAC, Construction Industries General Provisions, Permitting
29. Title 20, Chapter 2, Part 1 NMAC, Air Quality Provisions
30. Title 20, Chapter 2, Parts 72 and 73 NMAC, Air Quality Construction Permits
31. Title 20, Chapter 3, NMAC, Radiation Protection
32. Title 20, Chapter 4, NMAC, Hazardous Waste (20.4.1 through .5 NMAC)
33. Title 20, Chapter 5, NMAC, Petroleum Storage Tanks
34. Title 20, Chapter 6, Part 2 NMAC, Ground and Surface Water Protection
35. Title 20, Chapter 9, NMAC, Solid Waste
36. Title 19, Chapter 21, Part 2, NMAC Endangered Plants
37. Title 19, Chapter 33 NMAC, Endangered and Protected Species
38. Title 19, Chapter 34 NMAC, Wildlife Habitat and Lands



Possible County Requirements

- Wind & Solar Permitting
- Zoning Ordinances
- Subdivision Ordinances
- Fire Codes
- Environmental Codes
- Use of ROW (County Road Crossings and Access)
- Road Use & Maintenance Agreements
- Community Benefit Agreements (voluntary)



NM RETA Advantages

- Tax incentives: property, gross receipts, and compensating tax

- Assistance with siting:
 - Powers of eminent domain
 - Government-to-Government relationships with State Land Office, Department of Transportation, Middle Rio Grande Conservancy District, and other state and local agencies.
 - No New Mexico Public Regulation Commission jurisdiction over location control or ROW width (PRC makes a reliability determination and retains control over any impact on consumer rates).
 - State preemption of local zoning and other ordinances.

- Bond financing



NM RETA Key Engagement on Western Spirit

- Assisted with acquiring private letter rulings from NM Tax & Rev to ensure project tax savings.
- NMPRC location and ROW approval was not required
- Supported NMPRC Build Transfer Agreement Approval
- Assistance with siting:
 - 18 uncontested eminent domain cases
 - Assisted with NMDOT crossing permits
 - Assisted with NMSLO ROW agreement
 - Assisted with MRGCD crossing agreements
 - Worked with counties on zoning issues and community benefit agreements
 - Assisted with meetings with Isleta Pueblo regarding BIA ROW



NM RETA Key Engagement with Efforts to Streamline Federal Permitting

Federal Permitting Improvement Steering Council (previously known as “FAST-41”)

- Historic slow pace of transmission line development risks missing renewable electricity targets.
- The Council is a Federal agency; comprised of cabinet-level agency executives, ensures federal agencies cooperate on NEPA infrastructure projects.
- Council coordinated on SunZia project NEPA process beginning in May 2021.
- RETA engaged in 2022 with Council Executive Director Christine Harada (POTUS appointee) and her Team to continue joint efforts on newer projects.
- Council-developer collaboration aligns with RETA goal to expedite project timelines, while also meeting environmental standards.



NM RETA Key Engagement with Efforts to Streamline Federal Permitting

Military Bases in New Mexico

- Significant to economy; undeniable control of Base land properties and extensive air space.
- RETA engages directly with all Bases at Commander office level and Office of Military Base Planning and Support (attached to NM Economic Development Department).
- RETA works with all Bases affected by infrastructure ROW alignments; early engagement and NEPA Cooperating Agency status are key.
- Resolution has been achieved on significant SunZia ROW issues for White Sands Missile Range; NEPA process is moving forward on SunZia's Draft EIS.



NM RETA Key Engagement with Efforts to Streamline Federal Permitting

Streamlining the Development Process

- ...a significant way in which RETA contributes to formal development partnerships.
- RETA works with project stakeholders to streamline transmission siting development.
- Actively engaged with an array of parties at any one time:
 - NM utilities and transmission providers;
 - renewable energy and energy storage developers;
 - local, state, and federal agencies;
 - tribes, consumers, military installations, environmental groups;
 - private, state, federal, and tribal landowners.
- RETA absolutely does not skirt environmental or other state/federal requirements.
- RETA's growing efforts to streamline are now meeting the intent of the 2007 Act that created RETA.



IN 2020 RETA COMPLETED A LANDMARK STUDY OF RENEWABLE ENERGY IN NEW MEXICO UPDATED IN FEBRUARY 2022

See 2020 New Mexico Renewable Energy
Transmission & Storage Study and 2022 Update

<https://nmreta.com/nm-reta-transmission-study/>

- Executive Summaries
- Synopsis
- The complete Study and Update



NM Renewable Energy Transmission and Storage Study Background and Results

The New Mexico Renewable Energy Transmission Authority (NM RETA) partnered with ICF, an international consulting firm, to evaluate the future potential for New Mexico's vast renewable energy resources and the needed electricity transmission system.

This work focused on four key areas of investigation into our state's energy future:

- Potential of renewable resources
- Renewable resources development for clean electricity
- Transmission to support renewable resources development
- Economic benefits of transmission and renewable resources development
- **Study period: 2020 to 2032**
- **Overall results:**
 - Renewables will need to be developed at unprecedented pace, 2,500 MW --> 11,500 MW
 - Will satisfy New Mexico's clean energy goals
 - Expanded transmission will enable substantial growth in clean energy exports
 - New Mexico's unique solar and wind resources are low cost compared to other states

100 MW = power for 120,000 NM homes



2022 Energy Storage Study

- RETA's focus has been on building transmission to provide grid access to renewable energy projects, renewables cannot rely on transmission alone. We need long duration utility scale storage.
- *“Storage” in the RETA Act means energy storage technologies that convert, store, and return electricity to help alleviate disparities between electricity supply and demand, to facilitate the dispatching of electricity...*
- Renewables with storage will create firm capacity. Dispatchable power available 24/7 is what is required.



PART OF RETA'S CORE MISSION IS COLLABORATION ON POLICIES

COMMUNICATION ON POLICIES

Maintain communication between local and state leaders, to implement energy policies that benefit New Mexico.

ENSURE LOCAL CONCERNS ARE THOUGHTFULLY ADDRESSED

Well-meaning local advocacy to prohibit all development could counter state renewable goals and damage critical projects.

PRUDENT FISCAL POLICIES

- Care needs to be taken on taxation of renewable and transmission industries so as to not shift competition in favor of other western states.

ATTRACT INDUSTRY & INVESTMENT

- Attracting renewable and transmission industries can lead to billions of dollars of investment.



RETA's Action Plan

The following listed actions are selected as short term, actionable measures to be taken by RETA to address administrative, policy, and technical issues.

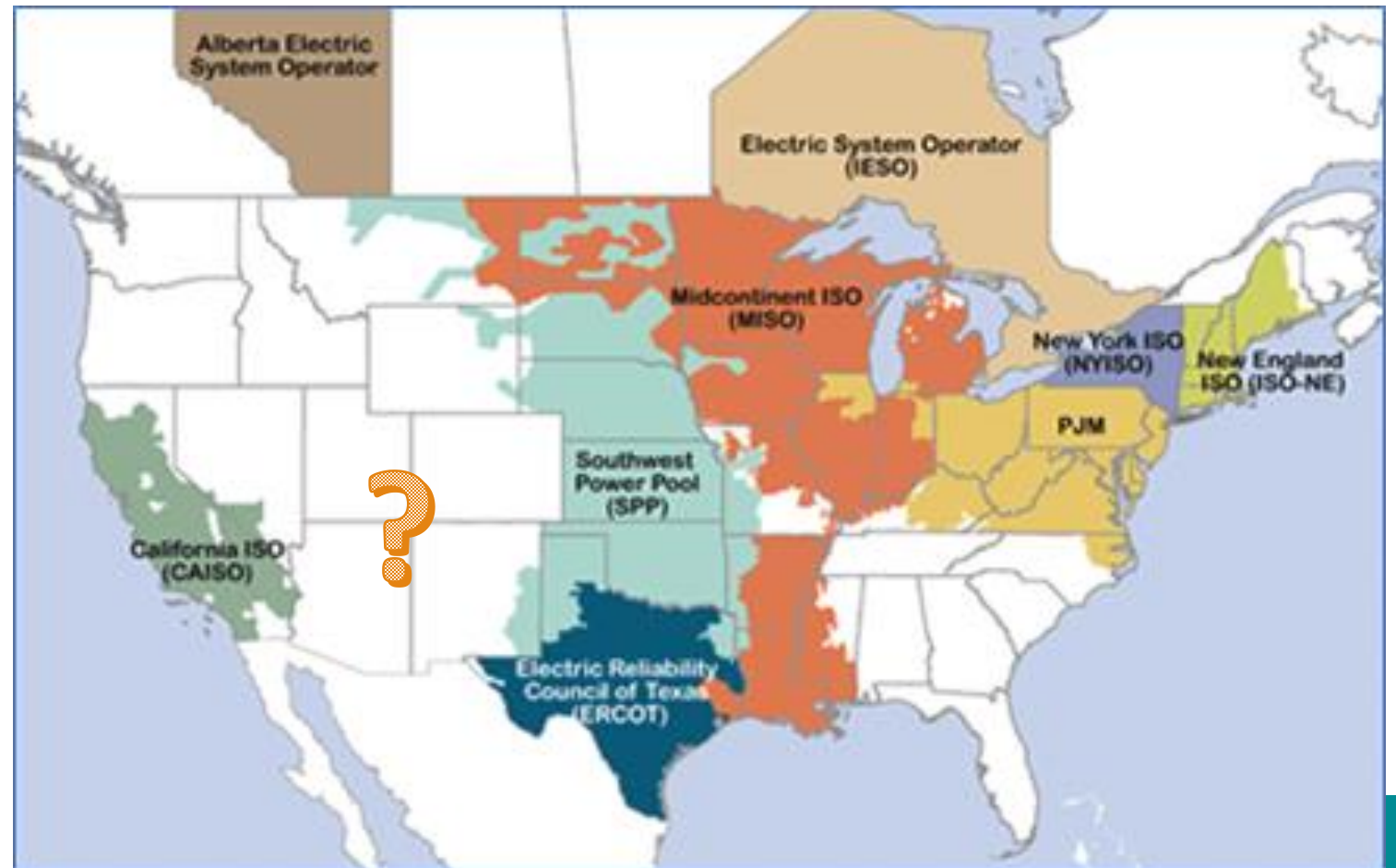
- **Continue our core mission of collaborating with existing partners and expanding relationships.**
- **Develop new partnerships with world class renewable energy and transmission developers to bring renewable energy to New Mexican customers and export markets.**
- **Promote another transmission corridor to connect New Mexico renewables to neighboring markets.**
- **Host a national workshop in October in Santa Fe – “500 Megawatts for 5 Days – Utility-Scale Storage – How do we get there?”**



RETA's Action Plan

Continued...

- Regional Transmission Organizations (RTO's) improve coordination and reliability and reduce consumer cost throughout most of the US.
- This coordination is lacking in the mountain west.
- RETA will work with New Mexico Utilities and policy makers to promote regional efforts to bring these benefits to the state.



The Bottom Line

- It is clear the RETA Legislation is accomplishing what New Mexico set out to do in 2007.
- With the passage of the Energy Transition Act, New Mexico is becoming a national leader in renewable energy and will need renewable energy for our citizens.
- The Western energy market is demanding enormous amounts of renewable energy.
- RETA is the essential link for our State for upgrading our transmission grid and accessing renewable resources. Thus, continuing RETA's work is critical to New Mexico's future.





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