SunZia®

DELIVERING CLEAN ENERGY

# SunZia Southwest Transmission & Pattern Wind Energy

MMR

SouthWestern POWER GROUP

New Mexico Renewable Energy Transmission Authority RETA

Pattern

# SUNZIA PROJECT PARTICIPANTS

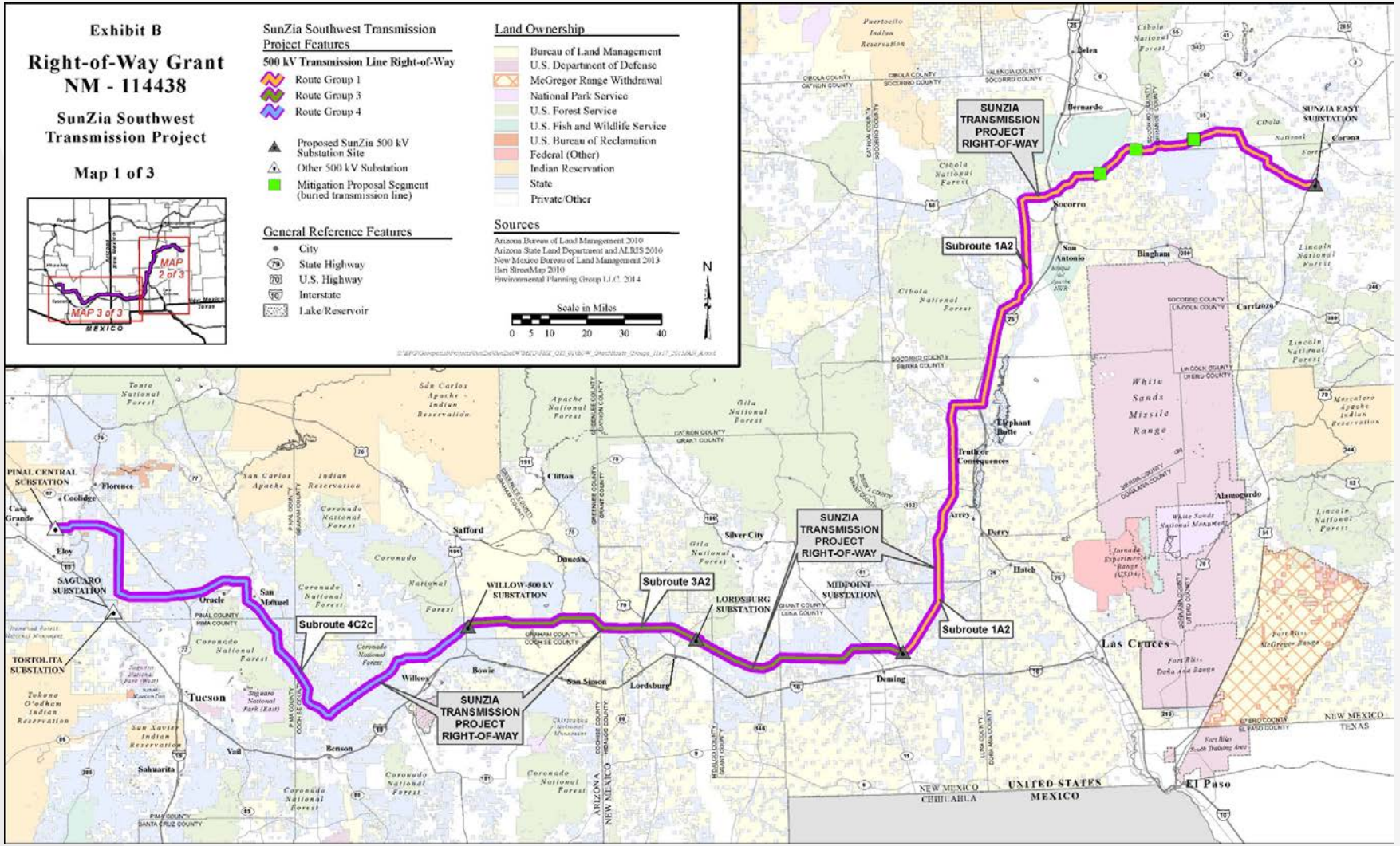
Southwestern Power Group (SWPG) is an independent developer of utility-scale generation and transmission assets, with a market focus in the desert Southwest. Since 2000, the company has distinguished itself as a leading force in evolving energy markets, including renewable energy, storage and smart electrical grids. SWPG is comprised of a select, experienced group of individuals with decades of experience in finance, permitting, licensing, real estate, construction and operations. www.southwesternpower.com

Pattern Energy is one of the world's largest privately-owned developers and operators of wind, solar, transmission, and energy storage projects. Its operational portfolio includes 28 renewable energy facilities that use proven, best-in-class technology with an operating capacity of 4.4 GW in the United States, Canada and Japan. Pattern is New Mexico's largest clean power company and has a long-term commitment to protect the environment and strengthen communities. www.patternenergy.com.

MMR is a global infrastructure firm with more than 4,000 full-time employees in the U.S. and a reputation for completing domestic and global projects within budget, on time and with unwavering consideration for safety. Across the globe, MMR has served clients in the renewable energy, chemical and petrochemical, oil and gas, industrial manufacturing, power generation and power development markets. www.mmrgp.com

The New Mexico Renewable Transmission Authority (RETA) is a state government entity established to identify and develop transmission and to enable renewable energy in New Mexico. RETA partnered with MMR and SWPG to facilitate SunZia as a benefit to the grid and is now a co-developer of the project. RETA has also worked with Pattern Energy to develop and construct the Western Spirit line. www.nmreta.com

# SunZia Southwest Transmission Project




Proposed in New Mexico and Arizona and will exceed 500 miles in length

Two 500kV lines providing up to 4,500 MW of transfer capacity

SunZia's first customer is Pattern Energy that will own and operate wind generation facilities in central New Mexico

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| | TRANSMISSION | WIND |
|---|---|---|
| **SunZia I** | 500+ mi DC<br>3 GW Transfer Capacity | 3,200 MW<br>In Service by 2025 |
| **SunZia II** | 500+ mi AC<br>1.5 GW Transfer Capacity | 1,850 MW<br>In Service after 2025 |

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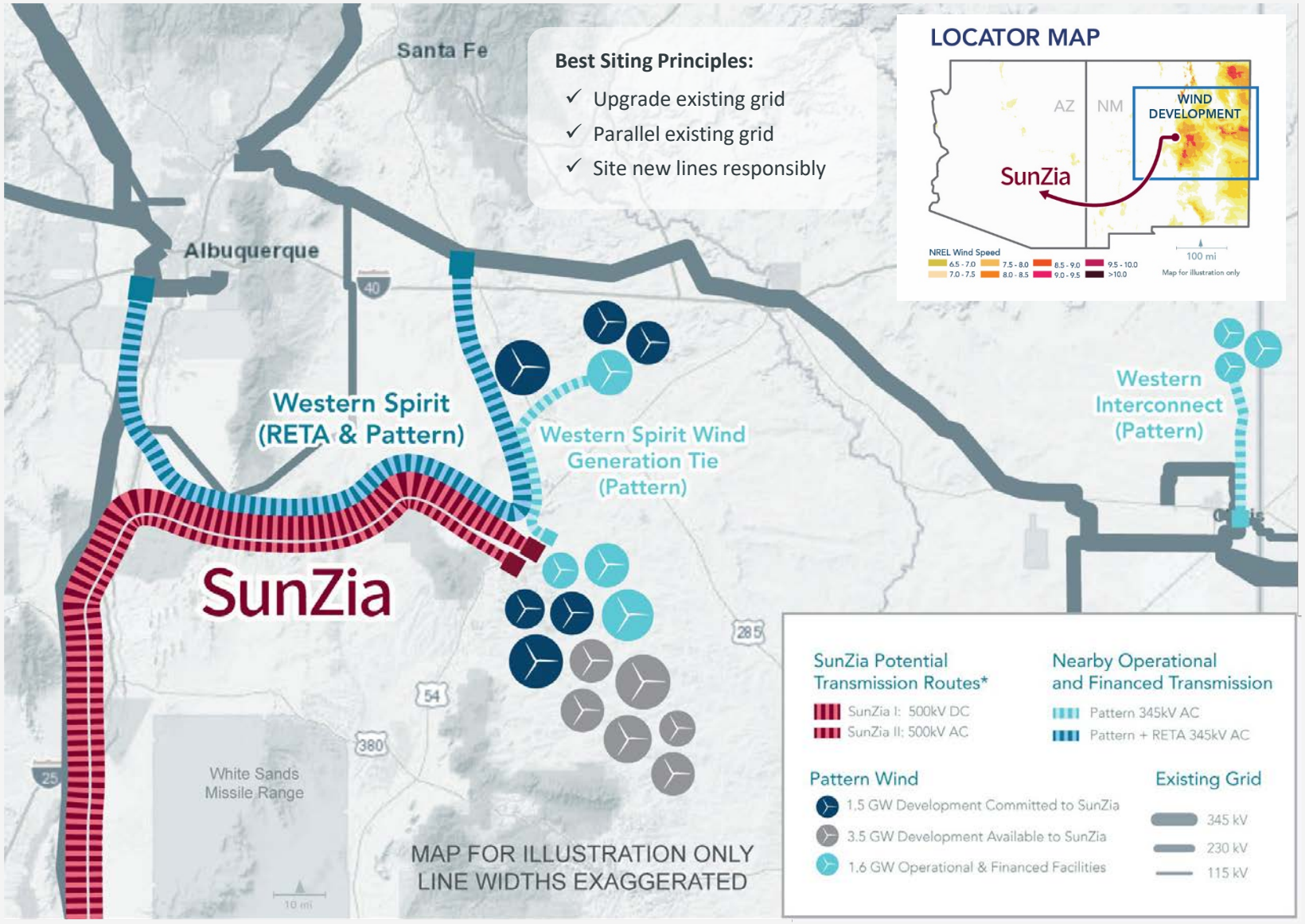
# SUNZIA PROJECT AREA




*Note: Pattern Energy's wind development assets are separate and distinct projects from SunZia I and SunZia II. Wind installations will be larger than line capacities to maximize transmission efficiency.*

*Final route will be determined by BLM during NEPA.

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# SUNZIA PROJECT DESCRIPTION

| | TRANSMISSION | WIND |
|---|---|---|
| **SunZia I** | 500+ mi DC<br>3 GW Transfer Capacity | 3,200 MW<br>In Service by 2025 |
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## PROJECT PARTICIPANTS

MMR
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New Mexico Renewable Energy Transmission Authority RETA
Pattern

TRANSMISSION DEVELOPMENT

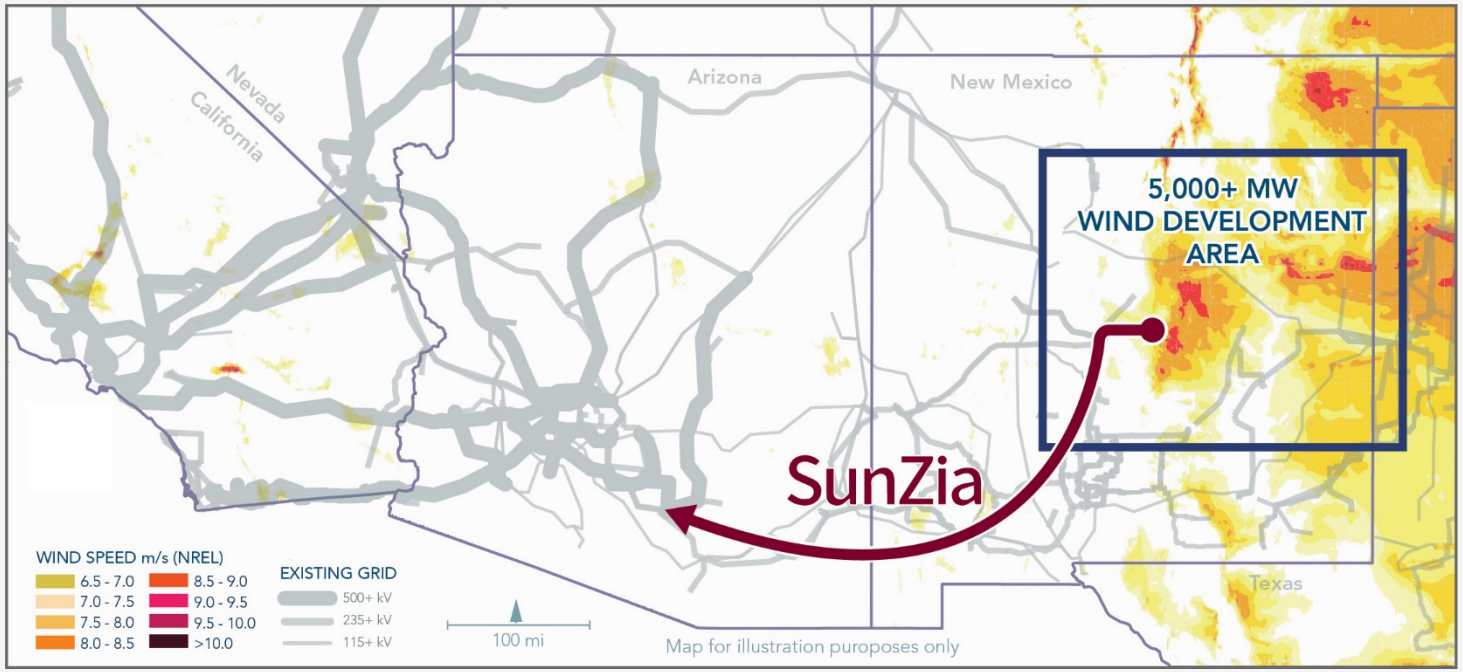
**SunZia I** 3,000 MW DC

1,000+ Miles New-Build Transmission
Two 500+ transmission lines developed by MMR, SWPG and RETA with 4.5 GW total capacity from New Mexico to Arizona & California markets

**SunZia II** 1,500 MW AC

WIND DEVELOPMENT

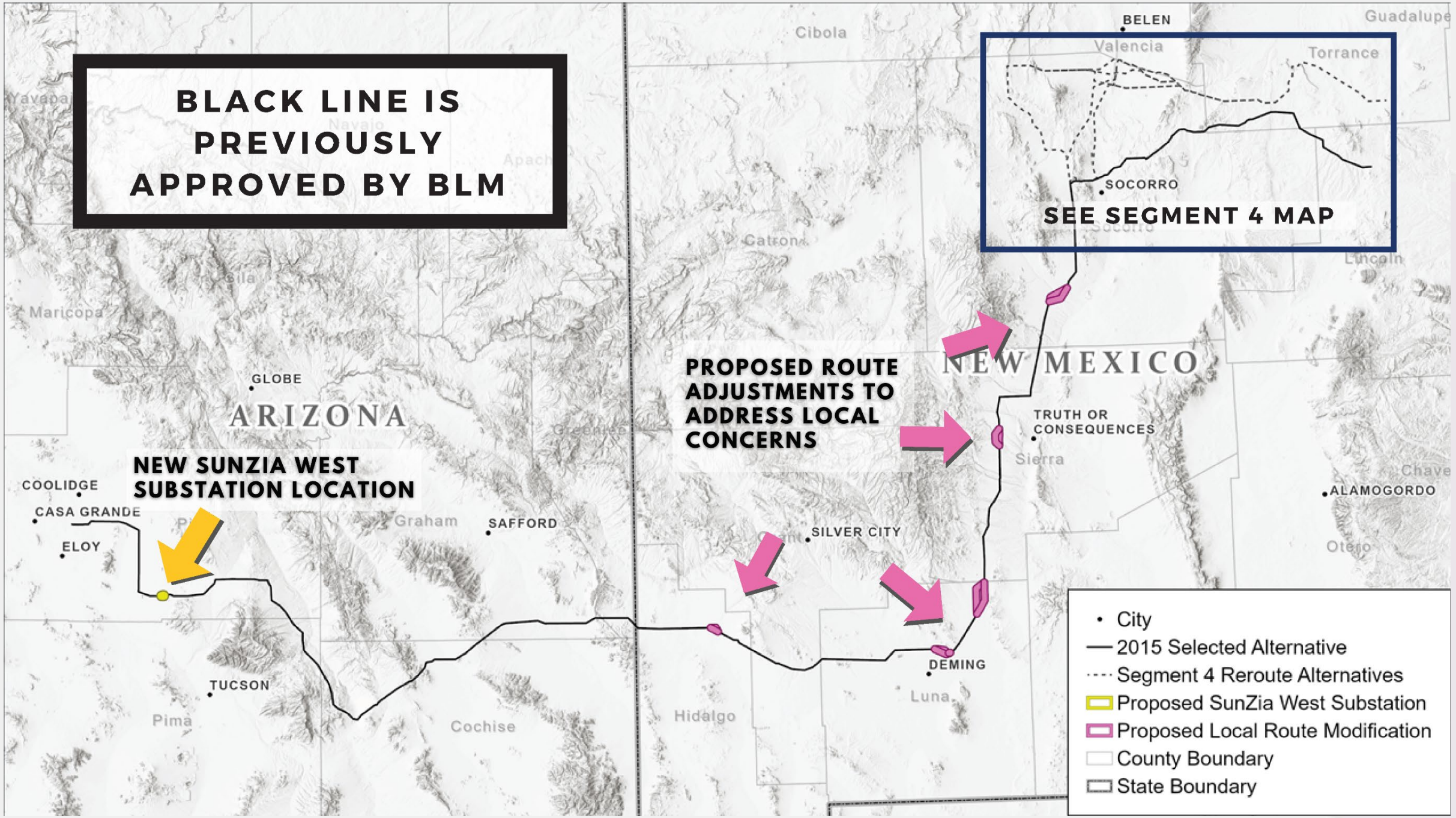
5,000+ MW World Class Wind
Larger build to maximize efficiency for 4.5 GW total SunZia transfer capacity.
Pattern Energy has 1.5 GW committed to SunZia and over 5 GW in development.

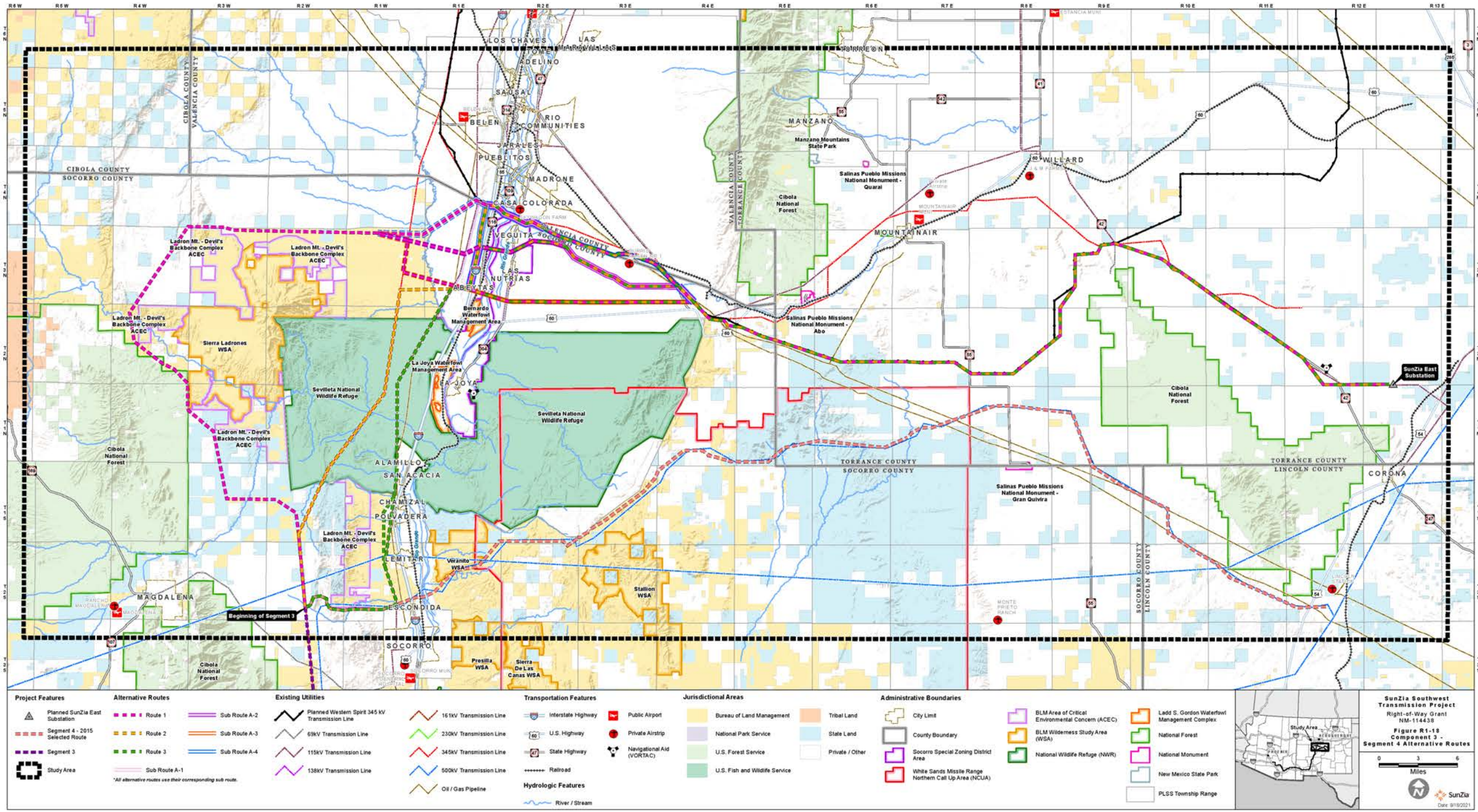



*Note: Pattern Energy's wind development assets are separate and distinct projects from SunZia I and SunZia II. Wind installations will be larger than line capacities to maximize transmission efficiency.*

# History & Background

- 2006: Project Initiation
- Sept 2008: SF-299 submitted to BLM
- June 2013: Final EIS issued by BLM
- 2014: Environmental Assessment on Department of Defense (DoD) Mitigation Proposal
- Jan 2015: BLM issued a Record of Decision
- Mar 2016: Memorandum of Agreement (MOA) with DoD on Mitigation Proposal
- Sept 2016: Executed ROW Grant Agreement with BLM
- Starting 2016: Per the MOA, regular meetings with White Sands Missile Range and coordination on their test operations in New Mexico
- Dec 2018: Started evaluation a potential re-route that would avoid the WSMR testing area
- Mar 2020: SF-299 submitted to federal agencies


BLACK LINE IS PREVIOUSLY APPROVED BY BLM
NEW SUNZIA WEST SUBSTATION LOCATION
PROPOSED ROUTE ADJUSTMENTS TO ADDRESS LOCAL CONCERNS
SEE SEGMENT 4 MAP
ARIZONA
NEW MEXICO
GLOBE
COOLIDGE
CASA GRANDE
ELOY
SAFFORD
TUCSON
SILVER CITY
DEMING
TRUTH OR CONSEQUENCES
ALAMOGORDO
BELEN
SOCORRO
Cibola
Valencia
Torrance
Guadalupe
Catron
Lincoln
Maricopa
Graham
Greenlee
Sierra
Otero
Pima
Cochise
Hidalgo
Luna
City
2015 Selected Alternative
Segment 4 Reroute Alternatives
Proposed SunZia West Substation
Proposed Local Route Modification
County Boundary
State Boundary


Project Features
Planned SunZia East Substation
Segment 4 - 2015 Selected Route
Segment 3
Study Area
Alternative Routes
Route 1
Route 2
Route 3
Sub Route A-1
Sub Route A-2
Sub Route A-3
Sub Route A-4
*All alternative routes use their corresponding sub route.
Existing Utilities
Planned Western Spirit 345 kV Transmission Line
69kV Transmission Line
115kV Transmission Line
138kV Transmission Line
161kV Transmission Line
230kV Transmission Line
345kV Transmission Line
500kV Transmission Line
Oil / Gas Pipeline
Transportation Features
Interstate Highway
U.S. Highway
State Highway
Railroad
Public Airport
Private Airstrip
Navigational Aid (VORTAC)
Hydrologic Features
River / Stream
Jurisdictional Areas
Bureau of Land Management
National Park Service
U.S. Forest Service
U.S. Fish and Wildlife Service
Tribal Land
State Land
Private / Other
Administrative Boundaries
City Limit
County Boundary
Socorro Special Zoning District Area
White Sands Missile Range Northern Call Up Area (NCUA)
BLM Area of Critical Environmental Concern (ACEC)
BLM Wilderness Study Area (WSA)
National Wildlife Refuge (NWR)
Ladd S. Gordon Waterfowl Management Complex
National Forest
National Monument
New Mexico State Park
PLSS Township Range
Study Area
SunZia Southwest Transmission Project
Right-of-Way Grant NM-114438
Figure R1-18
Component 3 - Segment 4 Alternative Routes
0 3 6
Miles
SunZia
Date: 8/19/2021
Beginning of Segment 3
SunZia East Substation
Ladron Mt. - Devil's Backbone Complex ACEC
Sierra Ladrones WSA
Bernardo Waterfowl Management Area
La Joya Waterfowl Management Area
Sevilleta National Wildlife Refuge
Cibola National Forest
Salinas Pueblo Missions National Monument - Abo
Salinas Pueblo Missions National Monument - Quarai
Salinas Pueblo Missions National Monument - Gran Quivira
Manzano Mountains State Park
Veranito WSA
Stallion WSA
Presilla WSA
Sierra De Las Canas WSA
CIBOLA COUNTY
VALENCIA COUNTY
SOCORRO COUNTY
TORRANCE COUNTY
LINCOLN COUNTY
LOS CHAVES
LAS MARAVILLAS
TOME
ADELINO
SAUSAL
BELEN
RIO COMMUNITIES
JARALES
PUEBLITOS
MADRONE
CASA COLORADA
VEGUITA
LAS NUTRIAS
ABEYTAS
LA JOYA
ALAMILLO
SAN ACACIA
CHAMIZAL
POLVADERA
LEMITAR
MAGDALENA
ESCONDIDA
SOCORRO
TORREON
MANZANO
WILLARD
MOUNTAINAIR
CORONA

# SunZia EIS and Plan of Development

- Draft EIS will include a visual analysis that will include Key Observation Points throughout the SunZia Project area, including Socorro County

- Plan of Development
  - Construction Plan and Program
  - Emergency Preparedness and Response Plan Guidelines
  - Fire Protection Plan

# SunZia EIS Schedule

| Milestone | Start Date | End Date |
|---|---|---|
| EIS for Project Changes | March 27, 2020 | April 26, 2023 |
| Issuance of Notice of Intent to prepare an EIS | | June 4, 2021 |
| Public Scoping and Comment Period | June 4, 2021 | July 6, 2021 |
| Cooperating Agency Review of ADEIS | January 6, 2022 | January 20, 2022 |
| Notice of Availability of Draft EIS and POD | | April 2022 |
| Draft EIS Public Comment Period (90 days) | April 2022 | July 2022 |
| BLM Publishes FEIS | | January 2023 |
| BLM Record of Decision | | March 2023 |

# SunZia Timeline

2021-2022
**Current State...**
Finalize Right-of-Way, Engineering and Permits

2025
**Commercial Operation**

2016
SunZia CEC

2015
BLM Record of Decision

2006-2020
**14 years of work...**
Development, Planning, Approval

2022-2025
**Next Steps...**
Construction and Commercial Operation

# Thank You!

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# SUNZIA ENVIRONMENTAL RESPONSIBILITY

Pattern & SunZia Staff touring potentially impacted area with environmental groups

*"Wind projects like Pattern's have a development footprint, but the* ***renewable energy*** *they produce* ***is essential to stemming the threat posed by climate change****. Renewable energy is key to mitigating the dire impacts of climate change at local, national and global levels."*

- Jaime Rappaport Clark
CEO, Defenders of Wildlife
*Albuquerque Journal*, 2019

## Conservation Stakeholder Engagement

SunZia and Pattern Energy have spent over four years meeting with environmental experts to inform the science-based solutions at the heart of the NEPA permit application.

The result is a replicable model of engagement as a gold standard of direct dialogue with the nation's top biological and conservation experts, as well as local stakeholders. The premise was to **listen**, **learn**, and **plan** for siting, conservation and mitigation practices and achieve conflict resolution.

Sustained and iterative engagement with local, regional, and national leaders from conservation community has allowed SunZia and Pattern to identify important environmental issues and priorities, resulting in meaningful changes to project design and conservation benefit strategy and commitment.

## Environmental Working Group

Pattern and SunZia meet routinely with leading environmental organizations from civil society to assess project resource impacts and permitting challenges and assumptions to ensure that the project advances climate and infrastructure needs without compromising important conservation priorities.

EXAMPLES OF
GROUPS CONSULTED

The Wilderness Society
Defenders of Wildlife
Audubon
Western Resource Advocates
NRDC
The Nature Conservancy
EDF Environmental Defense Fund
The Trust for Public Land

# SUNZIA: AMERICA'S LARGEST CLEAN POWER PROJECT

**5,000+** MW American Wind Energy

**1,000+** Miles Transmission Infrastructure

**$28 Billion** Private Investment

**$20 Billion** Economic Benefits

**4,000+** Clean Energy Jobs

**12 Million** Metric Tons $CO_2$ Annual Offset

**50 Million** Americans' Electricity Needs Served

**.64 Percent** U.S. Electricity GHG Reductions

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Numbers reflect full transmission build and also total wind capacity enabled.

Sources: *EPA emissions calculator, U.S. Census, Moss Adams, IMPLAN Systems model*

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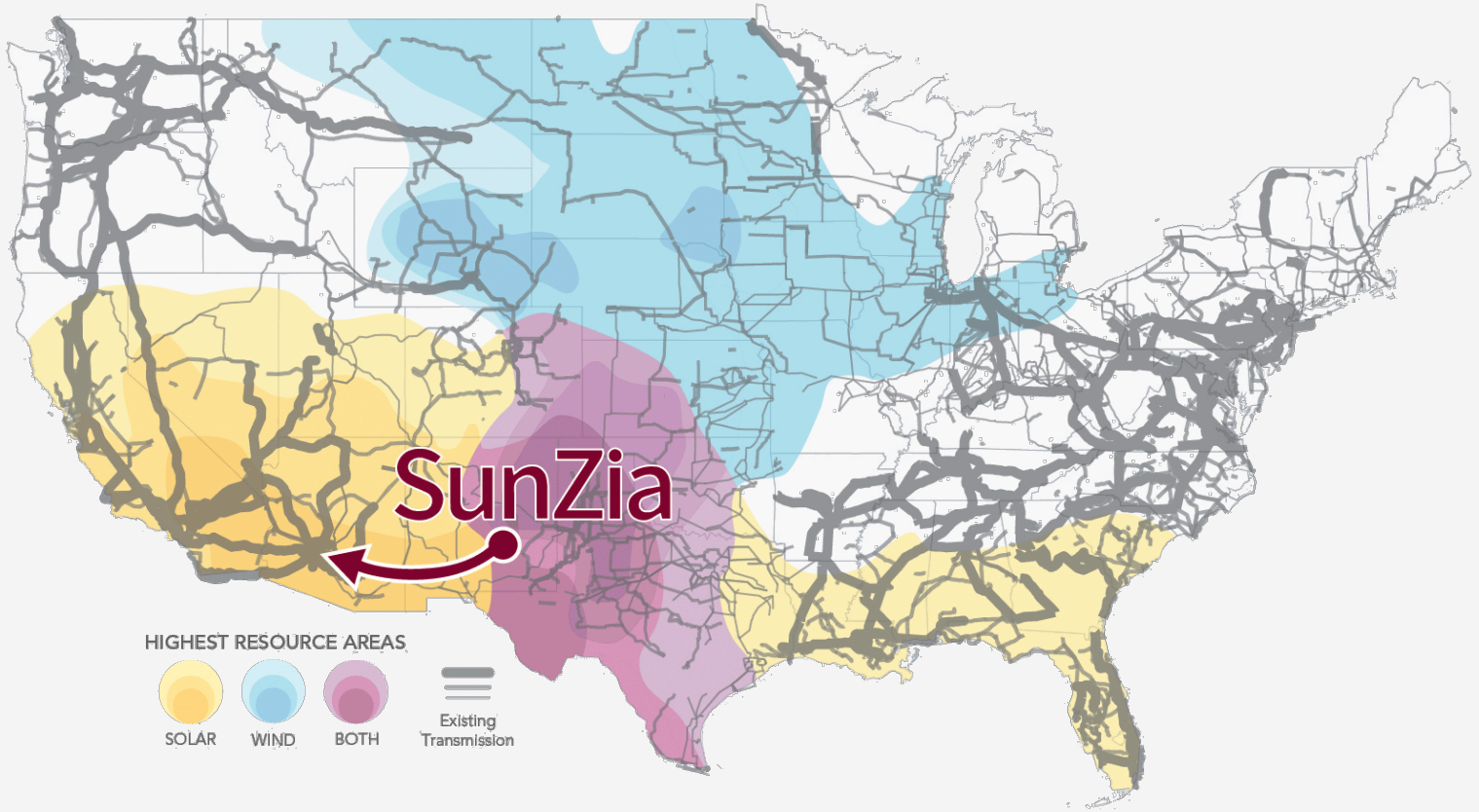
**Largest Clean Power Project in U.S. History**

## EXECUTIVE SUMMARY

The SunZia Southwest Transmission Project ("SunZia") is one of the nation's most innovative and impactful clean energy projects, designed as a superhighway for wind power in the American West. It is one of the largest, most viable near-term opportunities to unlock a historic and unprecedented amount of clean power for markets that need it most. SunZia will enable over $28 Billion of private economic investment, driving down significant levels of U.S. emissions, and creating thousands of good-paying jobs in underserved rural communities.

SunZia is a rare late-stage transmission development project with over a decade of community outreach among environmental groups, local stakeholders and governments, unions, and the U.S. Military, as well as partnerships with best-in-class wind developers and a rigorous gold-standard plan for environmental siting.



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## Largest Clean Power Project in U.S. History

Federal NEPA Action Enables Construction by **2022 Mid-Terms**

# SUNZIA ALIGNS WITH FEDERAL PRIORITIES

| Federal Policies, Values and Goals | SunZia | Detail |
|---|---|---|
| Federal Permits for Renewables<br>Sec. 207, Executive Order on Tackling Climate Crisis | ✓ | Permit approvals for SunZia would be a clear win for the Executive Order, unlocking 5,000+ MW of wind energy with construction as early as 2022. |
| 25 GW of New Federal Permits for Renewables by 2025<br>Sec. 3104, FY2021 Consolidated Appropriations Bill | ✓ | SunZia alone would represent 20% success for the 25 GW renewable energy permitting goal, as a single Federal action enables 5+ GW of wind. |
| 100% Carbon-Free Grid by 2035<br>The American Jobs Plan | ✓ | SunZia is a unique near-shovel-ready interregional project enabling the best wind and solar in the West to backstop each other, which is needed for a 100% clean grid. Recent blackouts in California and Texas point to the critical need for such regional connections to prevent emergencies as we approach a carbon-free grid. |
| Good-Paying Jobs, with Opportunity for Unions<br>The American Jobs Plan | ✓ | SunZia is committed to creating good-paying jobs, and project participants Pattern Energy and the New Mexico Renewable Energy Transmission Authority (RETA) have a record of hiring union labor for nearby high-voltage lines like the 345kV Western Spirit line, which is being built in 2021 with over 70% union labor. |
| Lower Energy Bills for Middle Class American<br>The American Jobs Plan | ✓ | Wind and solar are now the least cost energy sources in history. SunZia enables more of the grid to run reliably on renewables, which brings down energy prices for everyone. Los Angeles Mayor Eric Garcetti said that Pattern's New Mexico wind would be, "the best value for our customers." |
| Improved Air Quality and Public Health Outcomes<br>The American Jobs Plan | ✓ | The wind enabled by SunZia ramps up in the evening, balancing solar and displacing the need for the polluting, fast-ramp gas plants sited in urban areas, which have disproportionate health impacts on low-income disadvantaged communities. |
| More Grid Resiliency<br>The American Jobs Plan | ✓ | SunZia increases grid reliability and resiliency with regional diversity, pairing wind and solar together. Regional connections have emerged as a critical grid need as the grid weathers the impacts of climate change. |

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# ECONOMIC BENEFITS:
# SUNZIA & PATTERN WIND

| | Direct Project Investment | | | Economic Benefits *(Development, Construction, and 30 Years of Operations)* | | |
|---|---|---|---|---|---|---|
| | Development, Construction | Operations (30 Years) | **Total** | New Mexico | Arizona | **Total** |
| **SunZia Transmission** | | | | | | |
| 515 Miles | $3.2 B | $815 M | $4 B | $1.8 B | $1.1 B | $2.9 B |
| **Pattern Energy Wind** | | | | | | |
| 3,200 MW | $5 B | $10.3 B | $15.4 B | $9.5 B | $1.1 B | $10.6 B |
| **Pattern Energy Wind** | | | | | | |
| 1,850 MW | $3.1 B | $6 B | $9.1 B | $5.5 B | $1 B | $6.5 B |
| | Total Investments: $28+ Billion | | | Total Economic Benefit: $20+ Billion | | |

"Economic Benefits" include direct project spending, indirect benefits, and induced economic impact. Figures above account for state and local taxes, salaries and wages, private land payments, state land payments, community benefit payments, rate reductions from grid service, and local goods and services.

Source: Moss Adams economic studies based on real data from recent New Mexico wind and transmission projects constructed and operated by Pattern Energy.