



**Diamond Tail  
Solar and Storage Project**







## *Public Meeting*

October 29th, 2024, presented by PCR

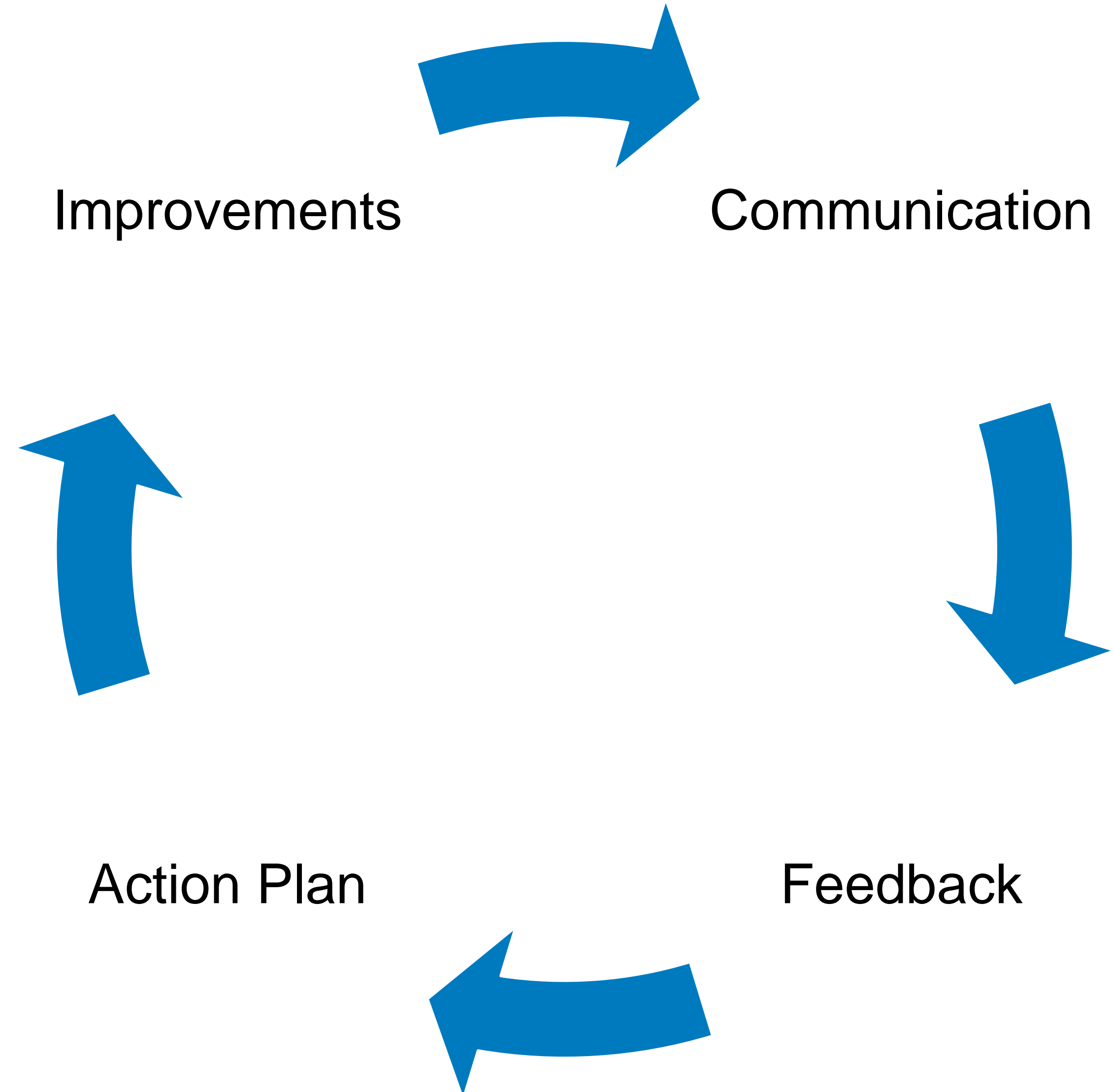
220 MW AC / 110 MW 4h

Solar Photovoltaic (PV) + Battery Energy Storage System (BESS)

*Accelerating Sandoval County's clean energy transition with locally-sourced, dispatchable solar power*



- PCR - Company Profile
- Project Location
- Development Timeline
- Economic Benefits
- Environmental Benefits
- Project Overview
- Studies
- Project Wildfire Risk
- Site Details and Layout
- Major Project Components
- Battery Electric Storage System (BESS) and Safety Information
- Emergency Response Plan
- Noise
- Access Routes and Traffic Estimates
- Water Use



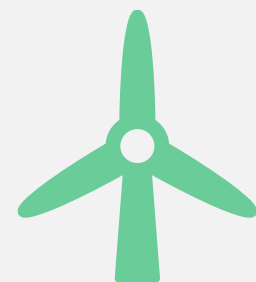


## Renewable Energy Business Unit



PCR is **fully integrated** in the **renewable energy supply chain**. Development, M&A, EPC, Financing and Operations of all renewable assets are performed by an **experienced management team**.

Renewable

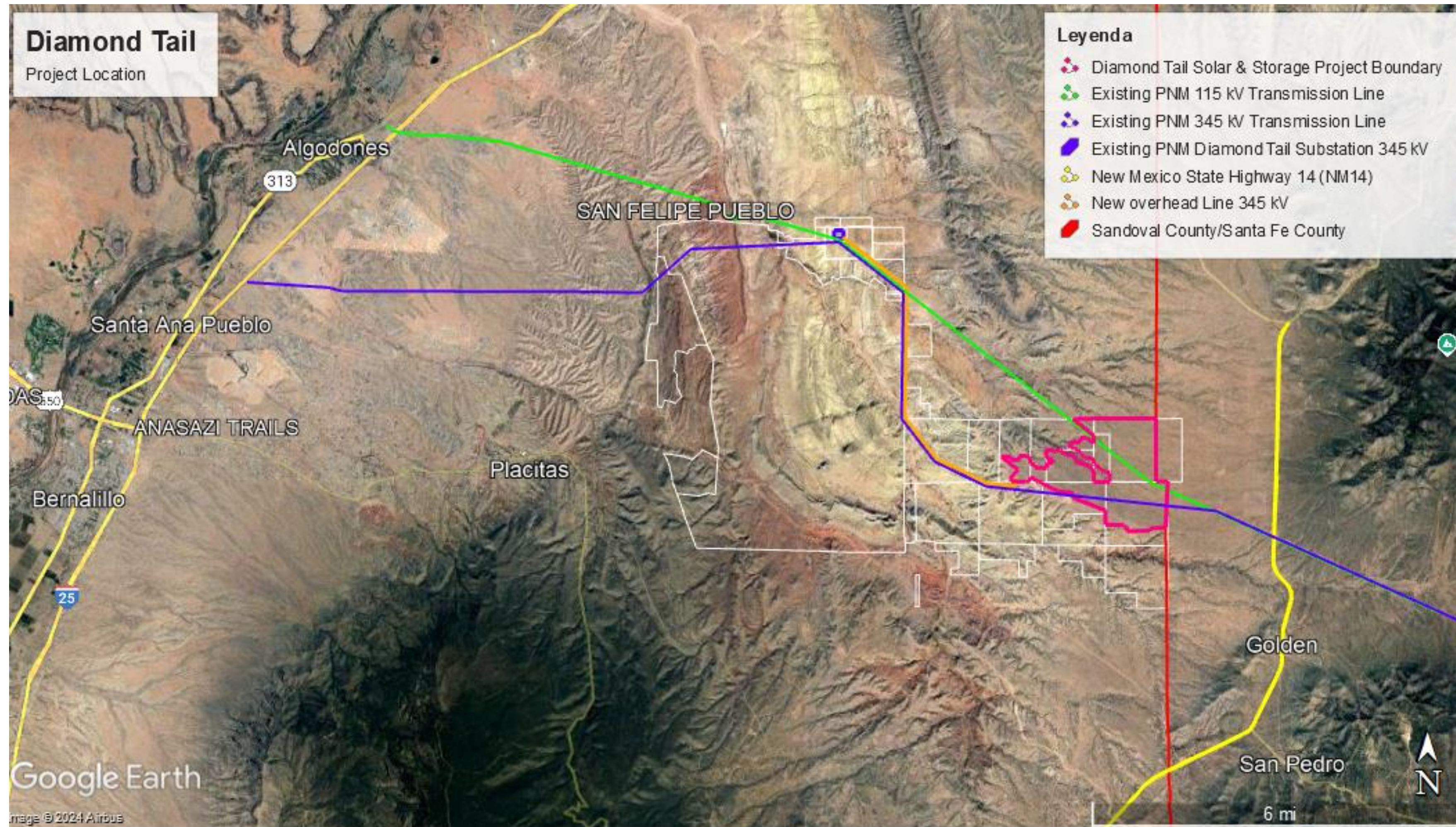


PCR is currently **operating** six wind farms, with a total capacity of **527 MW**.



PCR is currently developing 700 MW of solar projects in the US with plans to **grow that pipeline** to support **construction** of the first **30 MW in 2025**, for a total buildout of **800 MW in the next 5 years**.

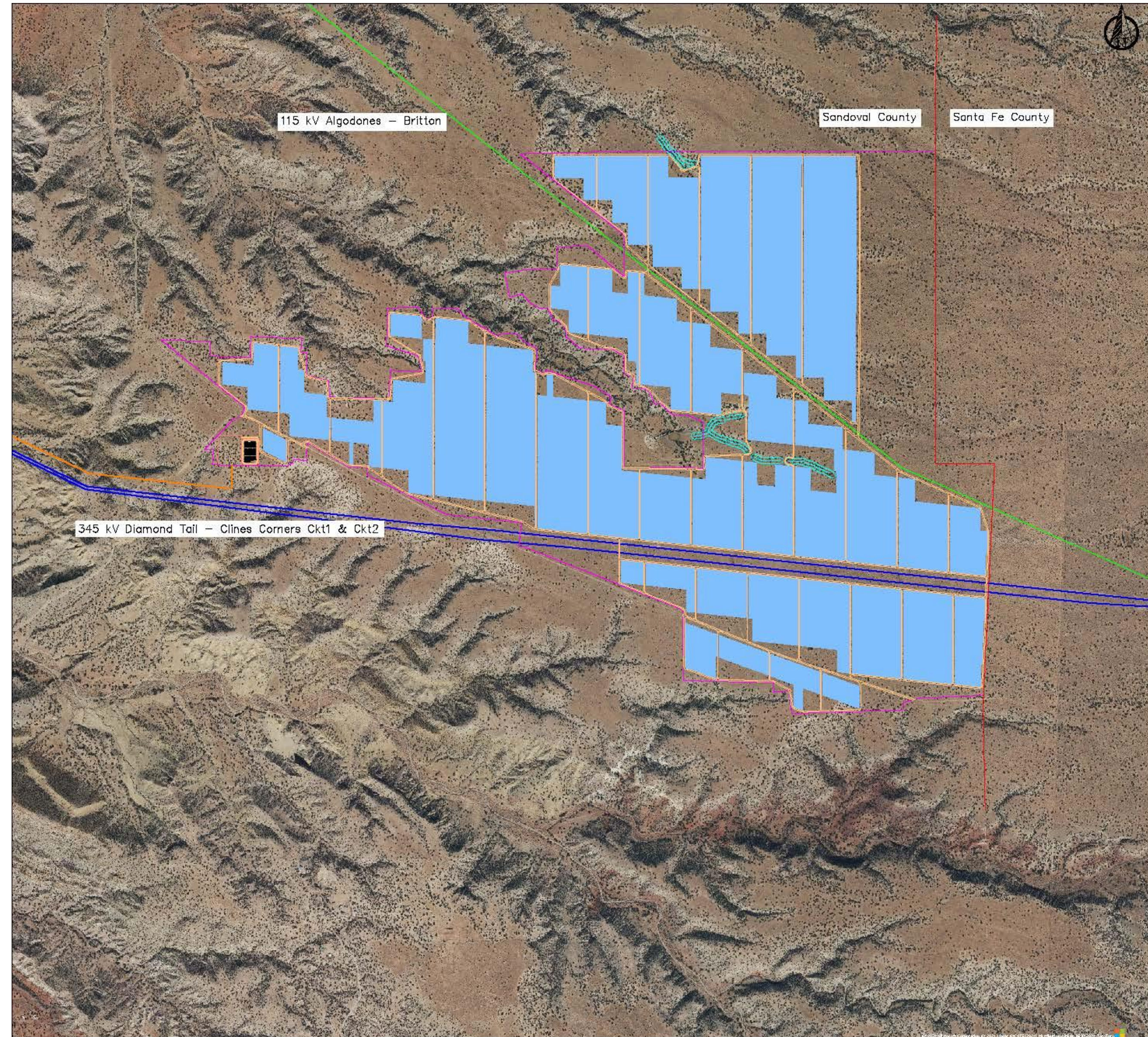




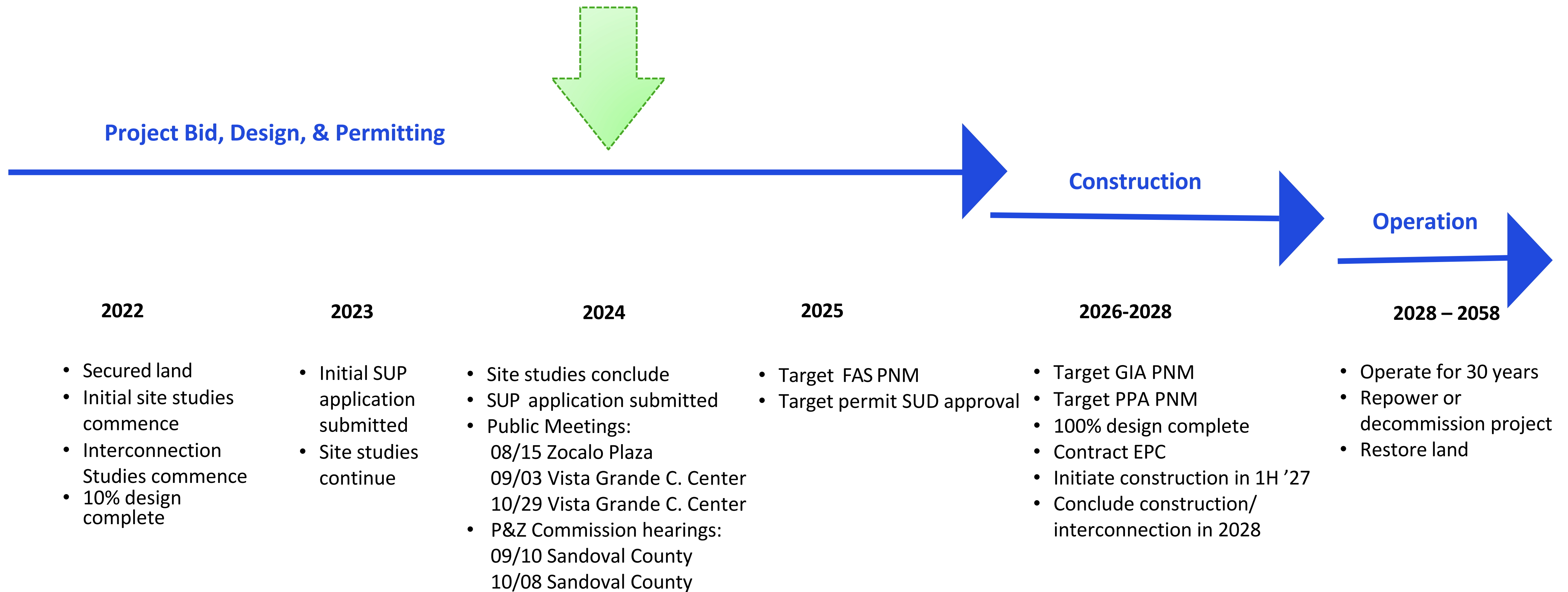
- 30 miles south from Santa Fe
- 23 miles northeast of Albuquerque
- 1.5 miles west of Hwy 14
- 12 miles east of Hwy 25
- 1.2 miles north of nearest residential home
- 12 mile-long perimeter fence surrounding Project area
- Located on private property, within a larger ~18,000-acre tract providing a substantial buffer between surroundings



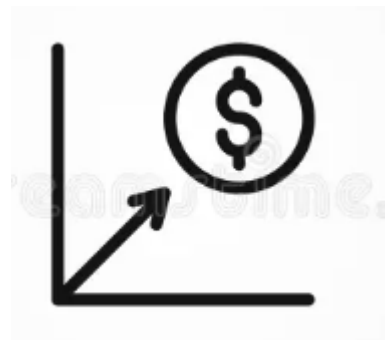
<b>Generation Type</b>	Solar Photovoltaic (PV) Facility with Battery Electric Storage System (BESS)
<b>Project Size</b>	220 MW AC + 110 MW/440 MWh battery storage (4 hours), AC Couple
<b>Production</b>	Estimated output of 607 GWh/year – more than the entire annual residential load of Sandoval County and Santa Fe County.
<b>Location</b>	Sandoval County, New Mexico
<b>Site Control</b>	Secured project lease of 1,800 acres on >18,000-acre Diamond Tail Ranch for solar system, BESS, O&M facilities, and gen-tie line.
<b>Proposed POI</b>	PNM Diamond Tail 345 kV Switching Station
<b>Interconnection</b>	Entered PNM DISIS Cluster #15 - Queue number: IA-PNM-2022-02
<b>Gen-Tie Route</b>	5.9 miles of 345 kV gen-tie route located on Diamond Tail Ranch
<b>Asset life</b>	30-years, followed by decommissioning & site restoration
<b>Construction Timeframe</b>	18-24 months
<b>Operations &amp; Maintenance</b>	Remote and on-site operation with limited site traffic
<b>Grounding</b>	All project components are grounded according to electrical standards. In addition, a lightning arrester will be installed near the central control facility.
<b>Fencing</b>	Wildlife-friendly agricultural fence (7 ft. tall posts) will enclose entire project area. BESS area will be enclosed by 7-ft. chain-link security fence.





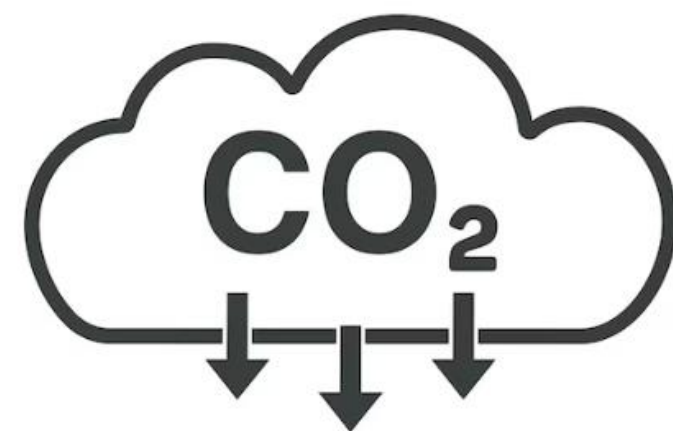
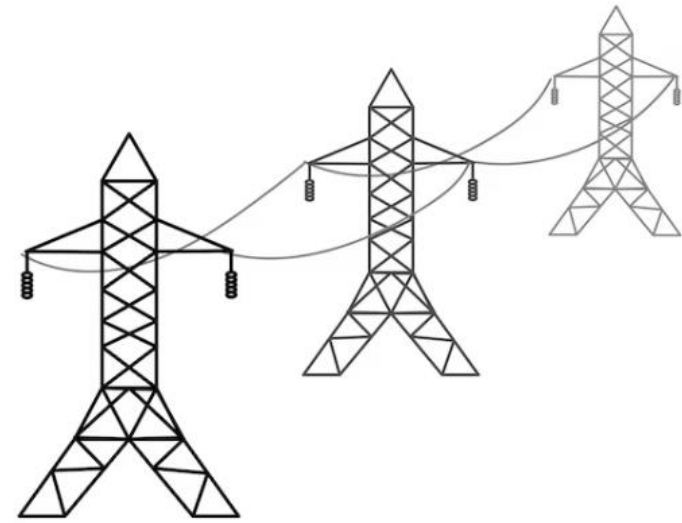
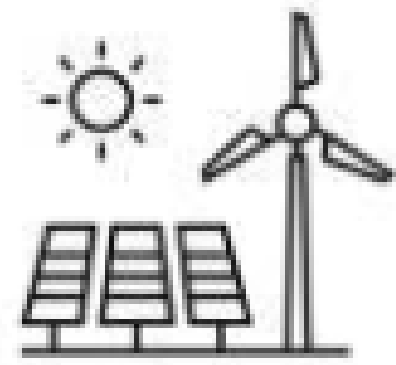






- **>\$450 million capital investment**
- **\$40 million in labor and wages**
- **300 construction jobs (direct)**
- **15-20 O&M personnel jobs, long-term**
- **Contributions to local services** (accommodations, food services & restaurants, materials, and professional services)
- **\$8 million in wages/material within Sandoval County**
- **>\$18 million in NM manufacturing output**
- **>\$30 million in property taxes**
- **\$11.8 million over 30 years to local school districts (Payments In Lieu of Taxes)**
- **\$5.9 million in est. GRT tax**
- **Market-competitive supply of clean energy at a long-term fixed cost to PNM ratepayers**





- Replace generation capacity lost by closure of coal-fired plants in Four-Corners area with clean, renewable power.
- Low impact development that diversifies and strengthens grid resiliency in Sandoval County & NM.
- Co-locating energy storage with renewables like solar to provide maximum power during the day while charging storage that will be later dispatched to the grid when the sun goes down, and people return home, and the demand for electricity peaks without oversaturating or destabilizing the grid.
- Serve ~2% of all of New Mexico's load in support of its goal to procure 100% renewable energy by 2045.
- Renewable power for the equivalent of 60,000 homes' annual electricity use.
- Avoid emissions equivalent of ~75,000 gasoline powered cars annually.



**The following studies and assessments have been completed as part of Project planning, permitting, and design:**

- Phase I Environmental Site Assessment
- Alta and boundary survey
- Topographic survey
- Wetland and Waters of the United States Delineation
- Geotechnical Investigation
- Class I & Class III Cultural Resources Surveys and consultation with State Historic Preservation Division
- Cultural resources consultation and site surveys with the Pueblo of San Felipe
- Natural resources assessment
- Mineral rights review
- Conceptual grading and drainage assessment and design
- Transportation engineering analysis for access routes
- Decommissioning Plan
- NMDOT permitting, traffic analyses, roadway work design for driveway access from NM14
  
- In progress due to community concerns: Visual Impact Assessment



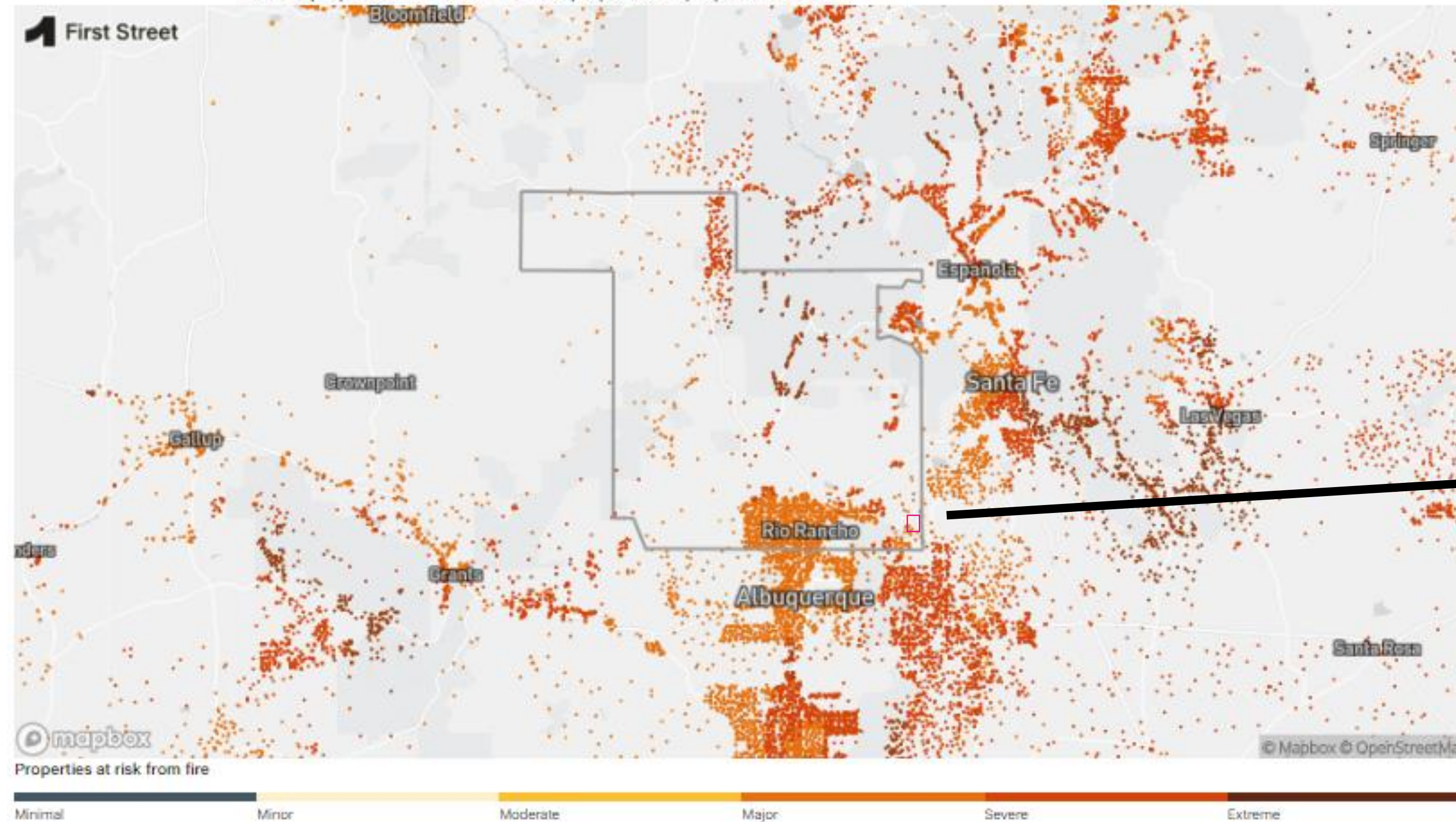
## Minimal Wildfire Risk

Does Sandoval County have Wildfire Risk?

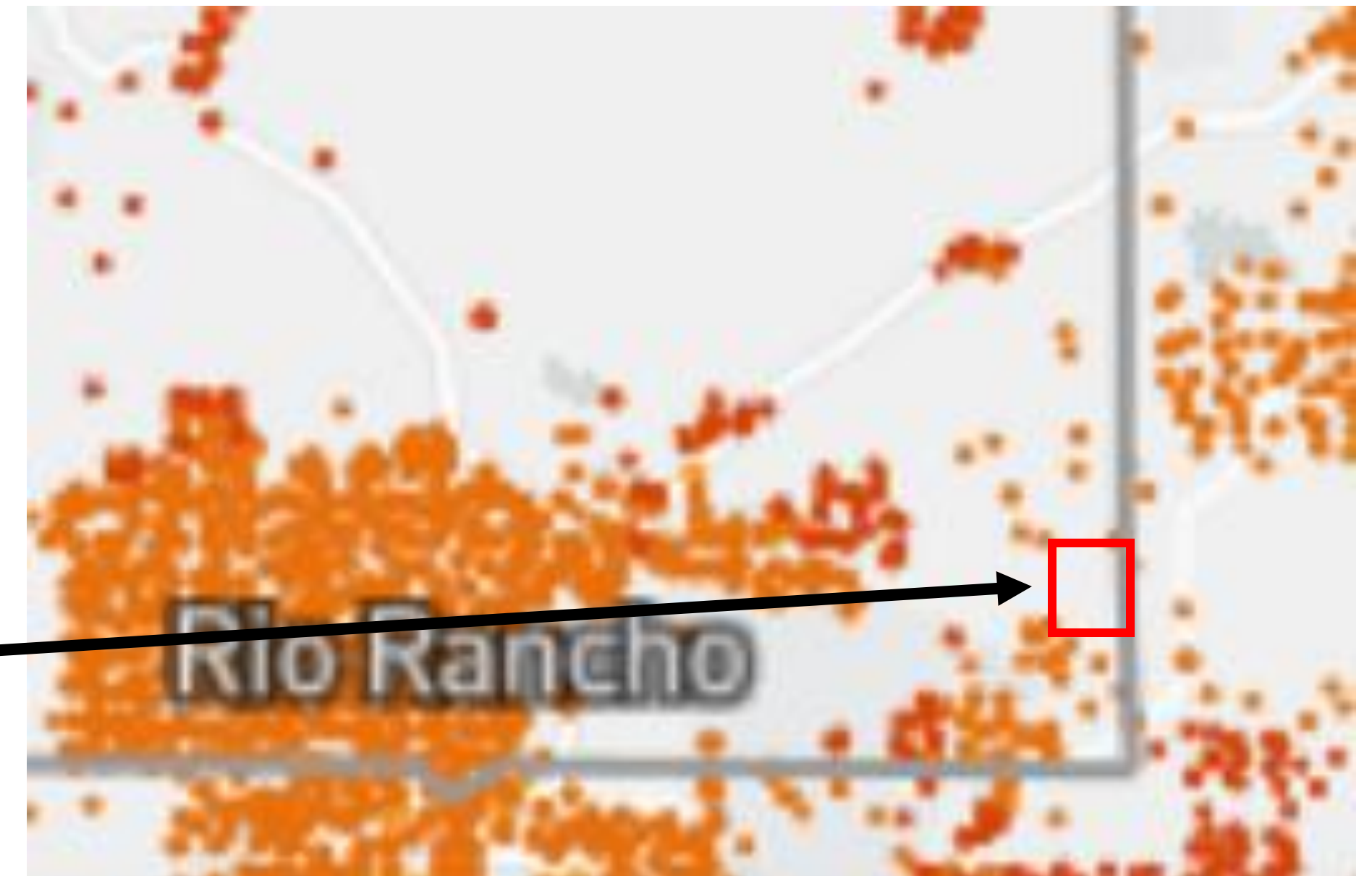


There are 148,510 properties in Sandoval County that have some risk of being affected by wildfire over the next 30 years. This represents 99% of all properties in Sandoval County.

In addition to damaging properties, wildfire can also cut off access to utilities, emergency services, impact evacuation routes, and may impact the overall economic well-being of an area. Overall, Sandoval County has a major risk of wildfire over the next 30 years. This is based on the level of risk the properties face rather than the proportion of properties with risk.

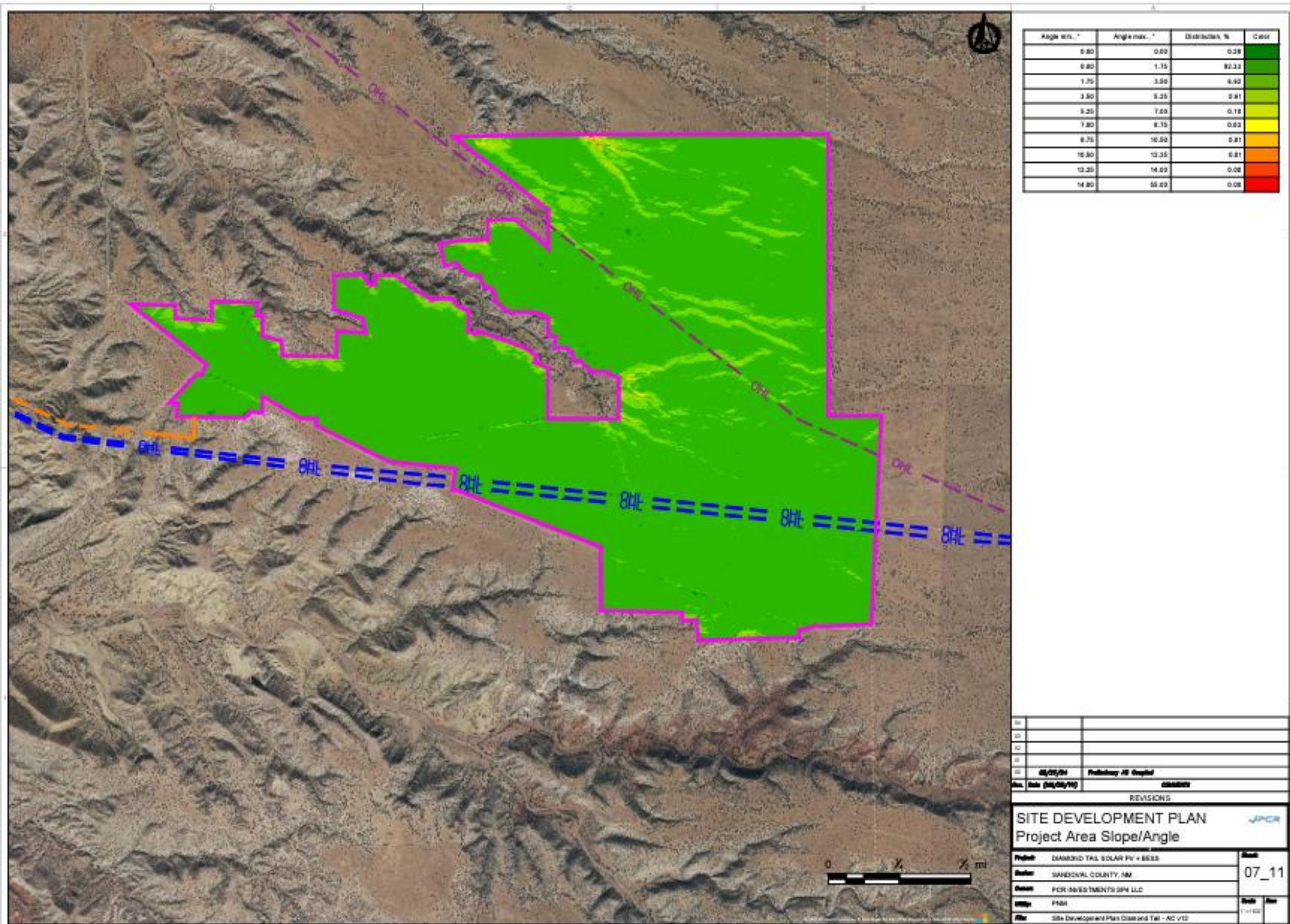


Financial risk assessors, First Street, identify the Diamond Tail Ranch as having minimal wildfire risk

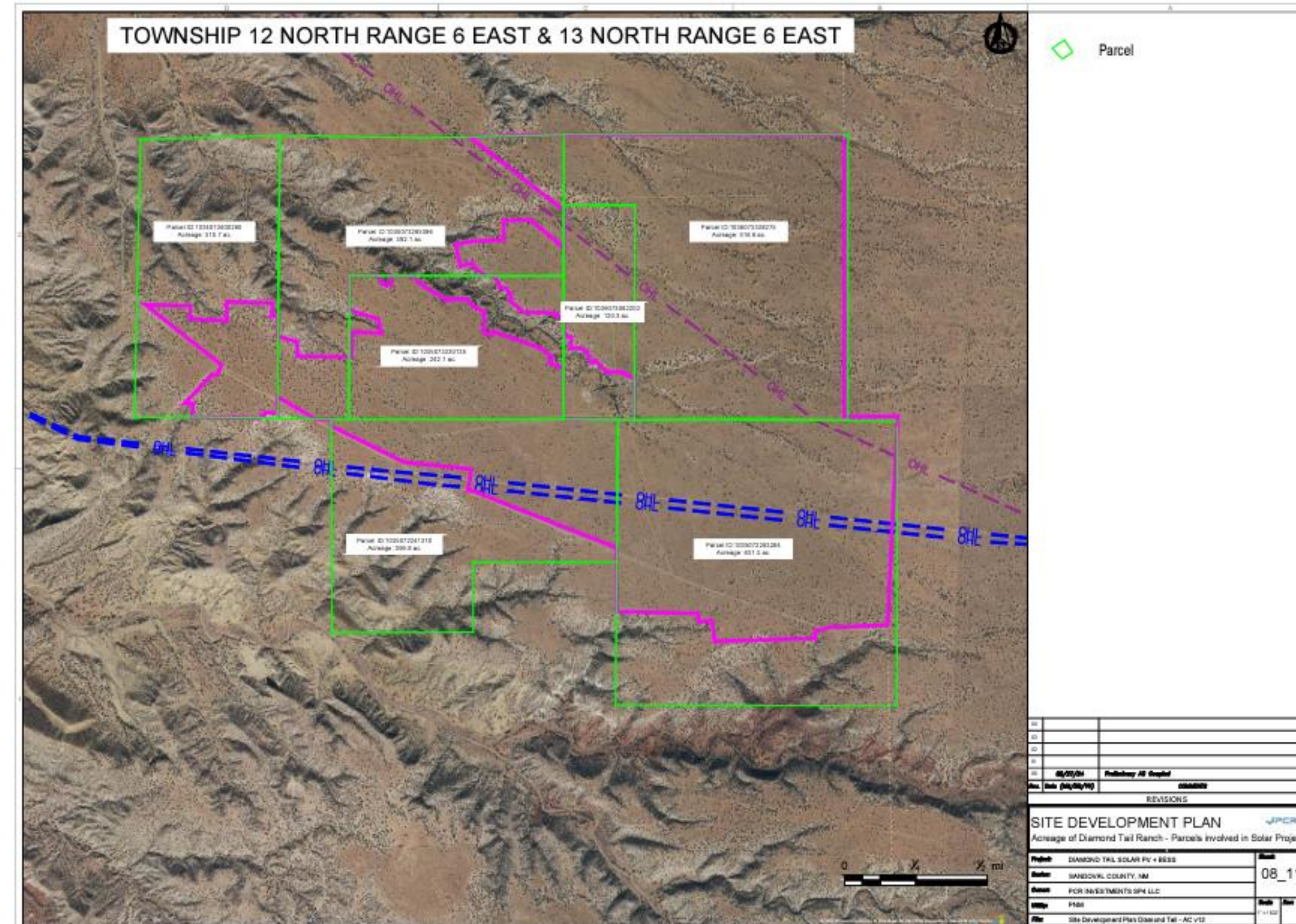




## Slopes

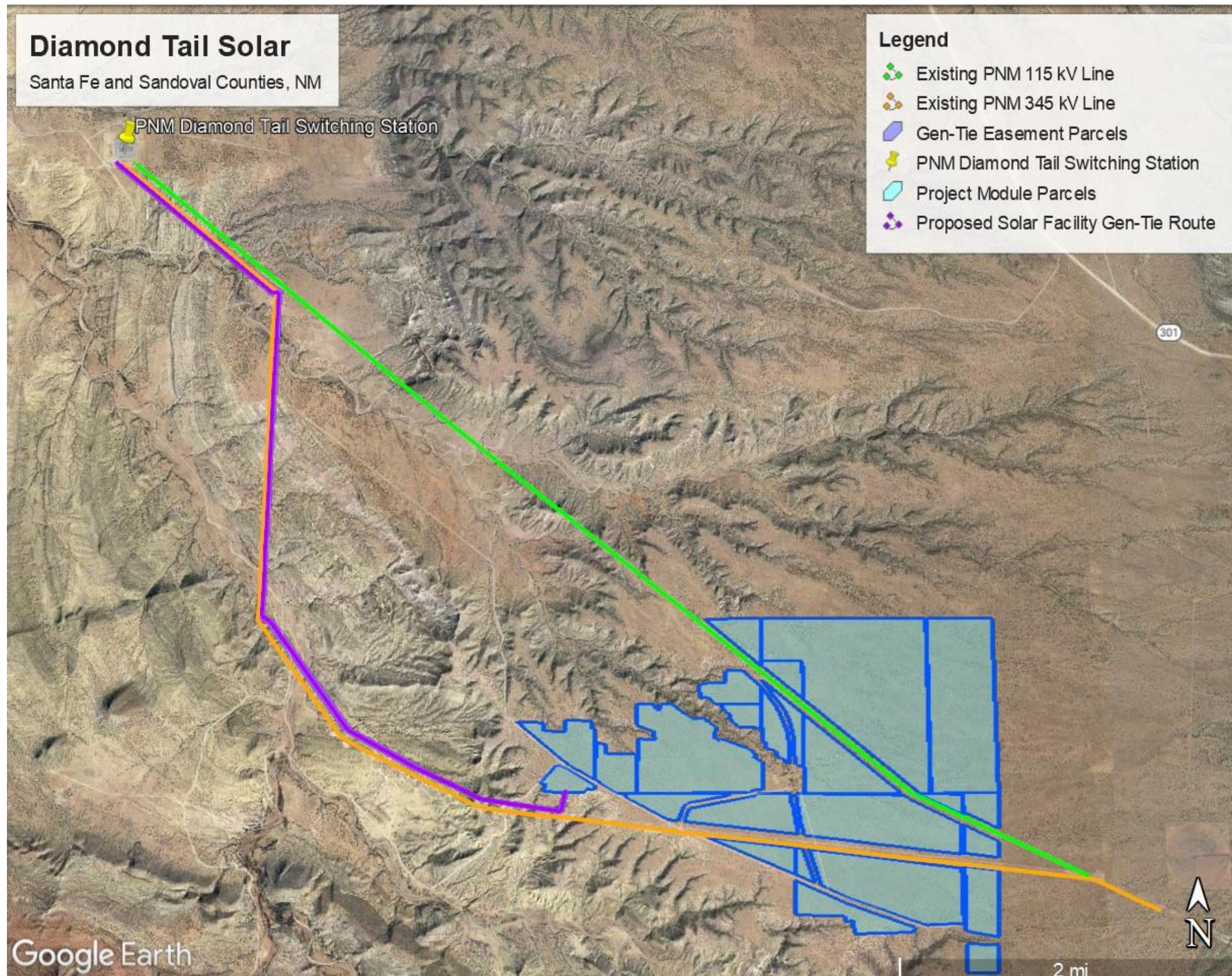


## Diamond Tail Ranch Parcels used for Project

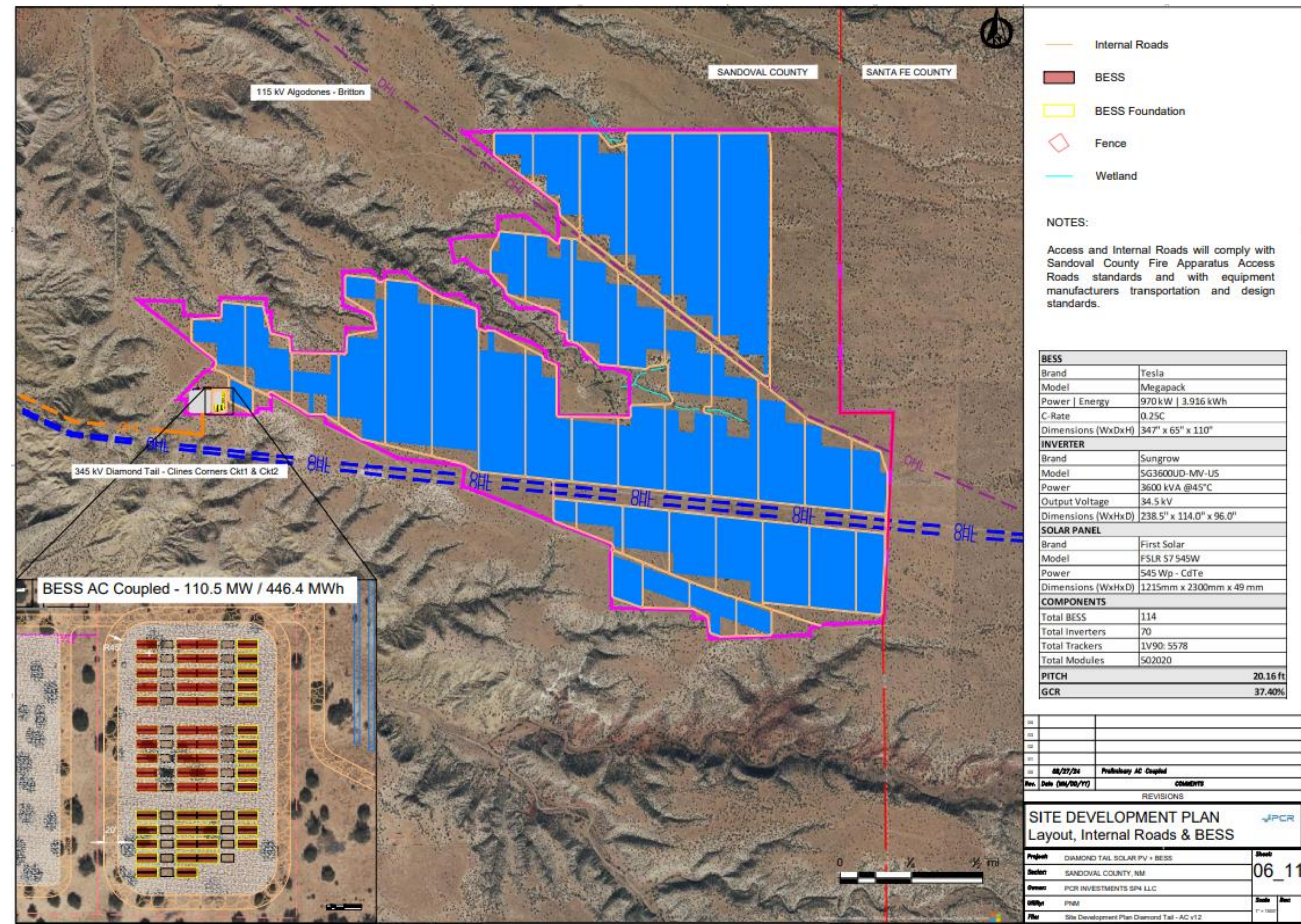




## Gen-Tie Route



## Preliminary Design





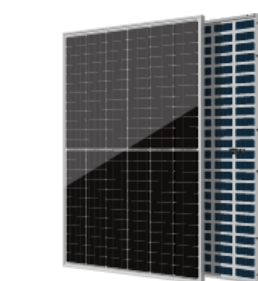


## SG4400UD-MV-US

Turnkey Station for 1500 Vdc System MV Transformer Integrated

- HIGH YIELD**
  - Advanced three-level technology, max. inverter efficiency 98.9%
  - Full power operation at 40°C (104°F)
  - Effective cooling, wide operation temperature
- EASY O&M**
  - Integrated current, voltage and MV parameters monitoring function for online analysis and trouble shooting
  - Modular Design, easy for maintenance
- SAVED INVESTMENT**
  - Low transportation and installation cost due to 20-foot container size design
  - DC 1500V system, low system cost
  - Integrated MV transformer and LV auxiliary power supply
  - Q at night optional
- GRID SUPPORT**
  - Compliance with standards IEC 61741, UL 1741 SA/SB, IEEE 1547, IEEE 1547 and NEC code
  - Low / High voltage ride through (L/HVRT), L/HFRT, soft start / stop
  - Active & reactive power control and power ramp rate control

## ZNSHINESOLAR

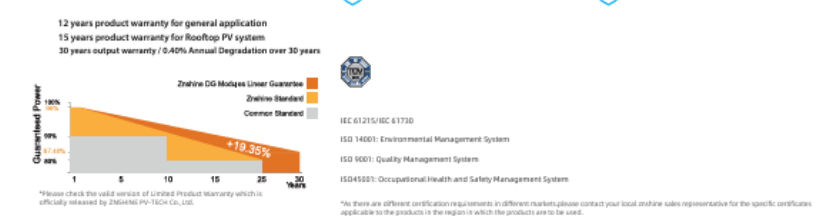


## ZXM7-UHLDD144 Series

1688 HALF-CELL N-Type TOPCon Bifacial Double Glass Monocrystalline PV Module

**570-585W**    **22.64%**    **0.40%**  
 POWER RANGE    MAXIMUM EFFICIENCY    YEARLY DEGRADATION

**12 YEARS PRODUCT WARRANTY**    **30 YEARS OUTPUT GUARANTEE**

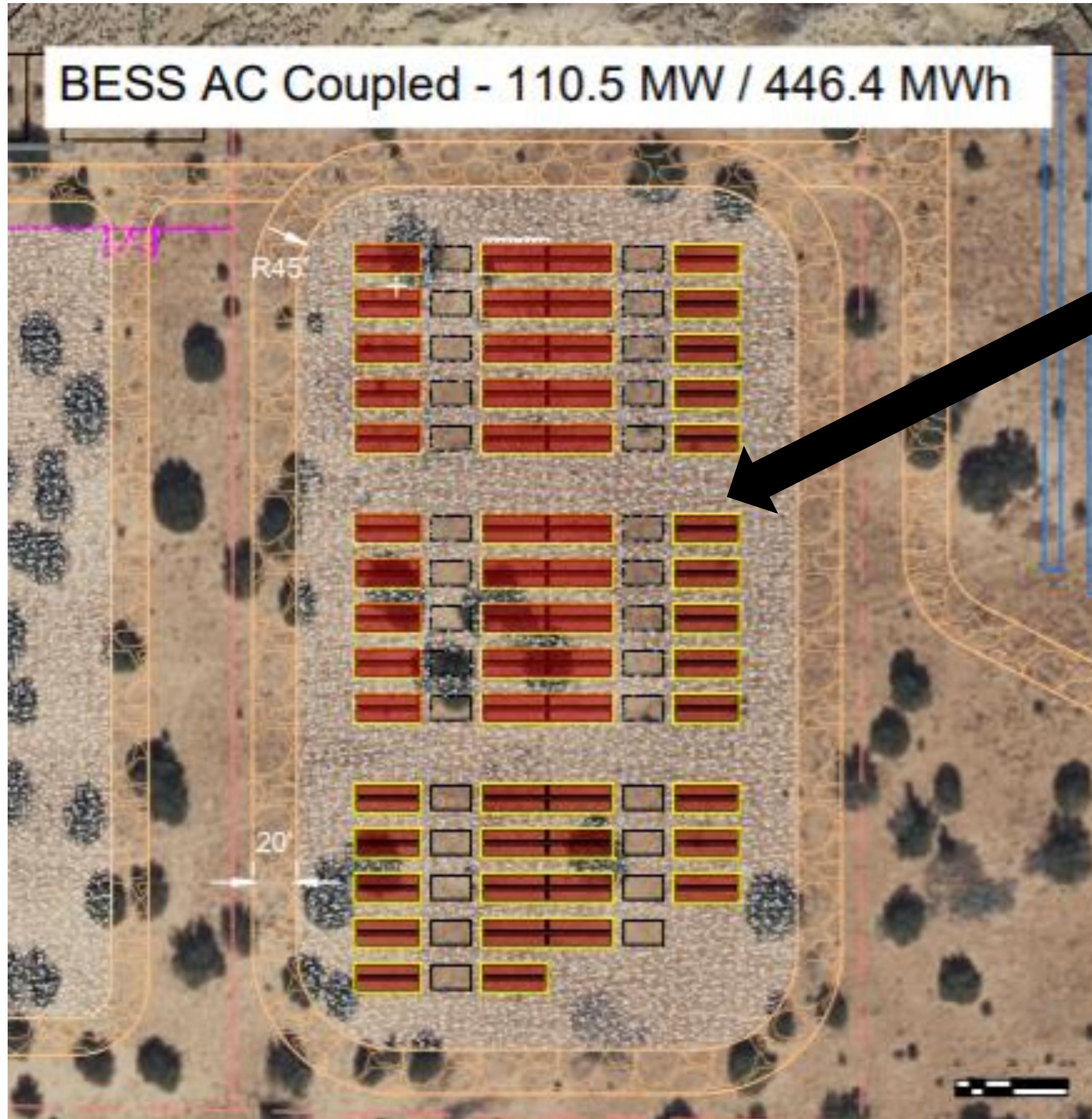


### Key Features

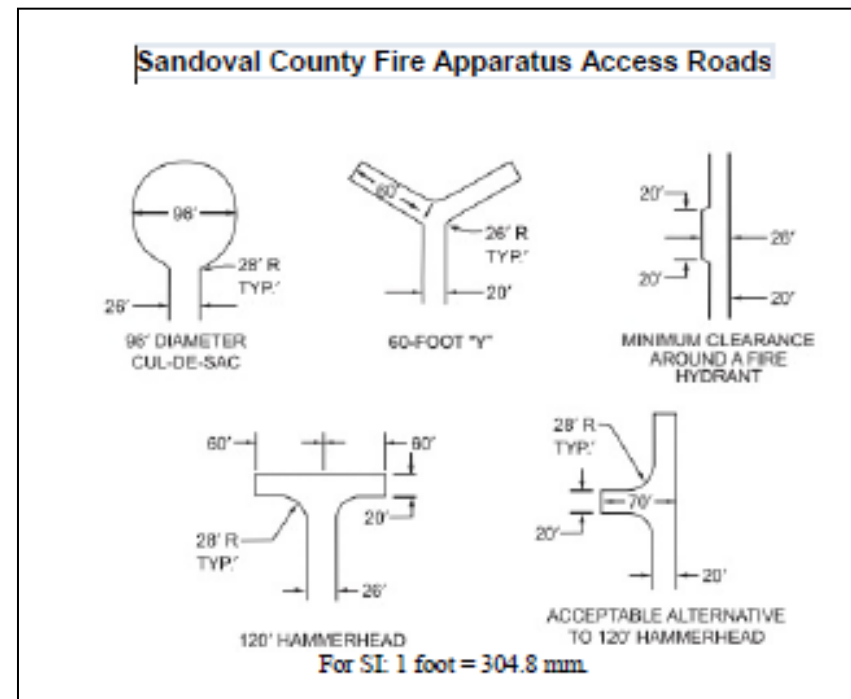
- Excellent Cells Efficiency**  
 SMBB technology reduce the distance between busbars and finger grid line which is benefit to power increase.
- Better Weak Illumination Response**  
 More power output in weak light condition, such as haze, cloudy, and early morning.
- TIER 1**  
 Global Tier 1 bankable brand with independently certified advanced automated manufacturing.
- Excellent Quality Management System**  
 Warranted reliability and stringent quality assurance well beyond certified requirements.
- Bifacial Technology**  
 Up to 25% additional power gain from back side depending on albedo.





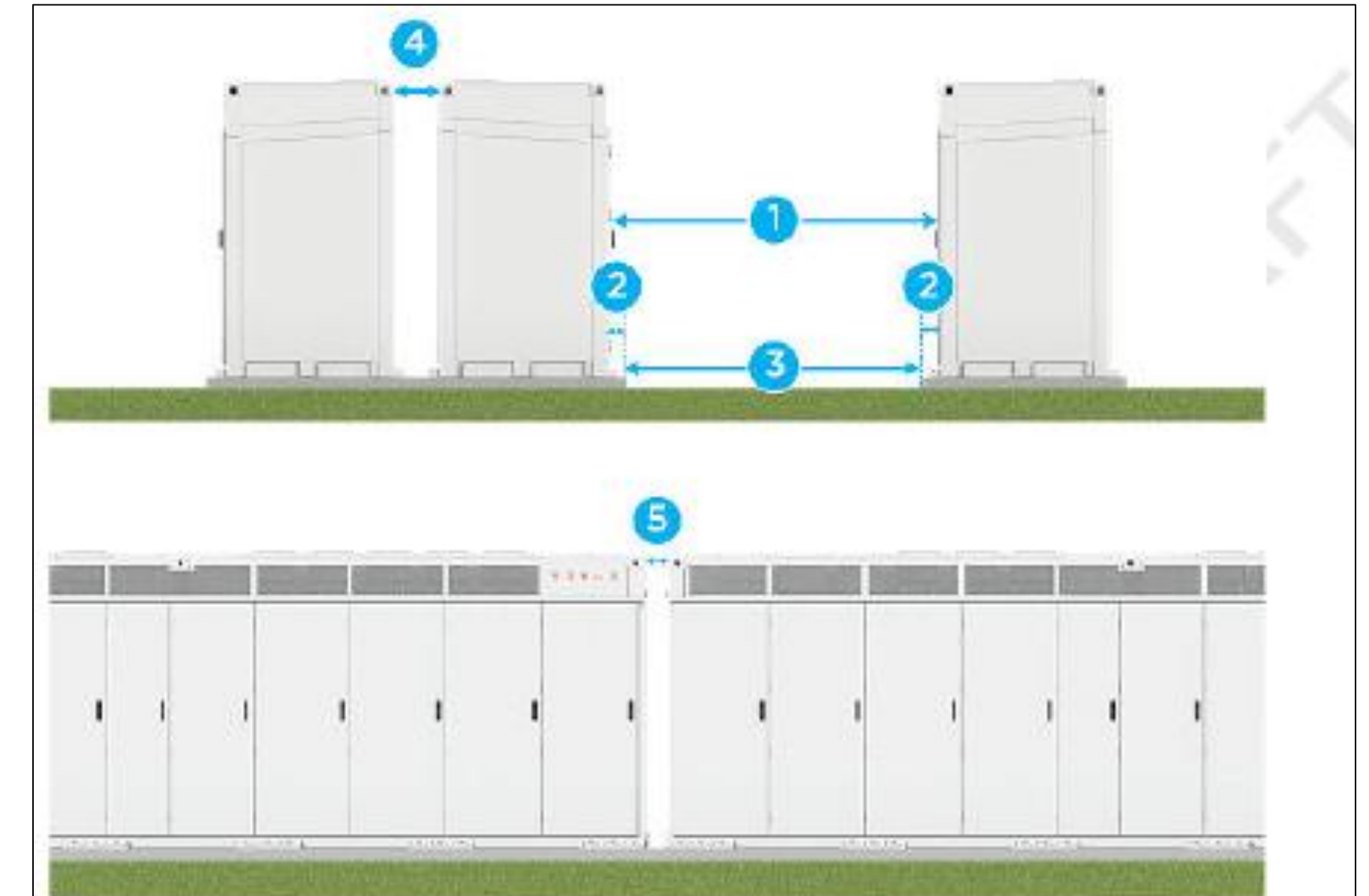


**Battery units mounted on concrete pads; gravel buffer w/ no vegetation surrounding battery units. Total area 2 acres.**



**NOTES:**

Access and Internal Roads will comply with Sandoval County Fire Apparatus Access Roads standards and with equipment manufacturers transportation and design standards.



**Table 14. Equipment Clearance Requirements**

Callout	Type	Minimum	Maximum	Notes
1	Front	2440 mm (96 in)	None	Measured from face of doors. Tesla-required clearance for maintenance access.
2	Foundation overhang	100 mm (4 in)	305 mm (12 in)	Varies depending on anchor and site design but must fall within this range.  See <a href="#">Equipment Bearing Areas and Anchoring on page 40</a> for more information.
3	Drive aisle	1960 mm (77 in)	None	Measured from foundation. Tesla-required clearance for maintenance access.
4	Back-to-back	230 mm (9 in) <i>minimum</i> . 460 mm (18 in) <i>recommended</i> for access purposes.	None	Measured from the outside faces of the ISO corners at top of Megapack.  See also <a href="#">Additional Anchoring Considerations on page 42</a> .
5	Side	150 mm (6 in)	None	Measured from the outside faces of the ISO corners at top of Megapack.



Electric utility-scale Battery Electric Storage Systems use the same lithium-ion battery technology present in the most commonly used electronics, including cell phones, laptops, and electric vehicles.

The Diamond Tail Solar & Storage Project's BESS will utilize the Tesla Megapack:

**Manufacturer:** Tesla

**Model:** Megapack

**Electrical Rating:** 3,900 MWh

**Dimensions:**

W: 7,125 mm (23 ft)

D: 1,600 mm (5 ft)

H 2,516 mm (8 ft)

**Structure:** No human occupancy

NFPA 855, 68/69 compliant

Factory-listed to UL9540 & UL1973

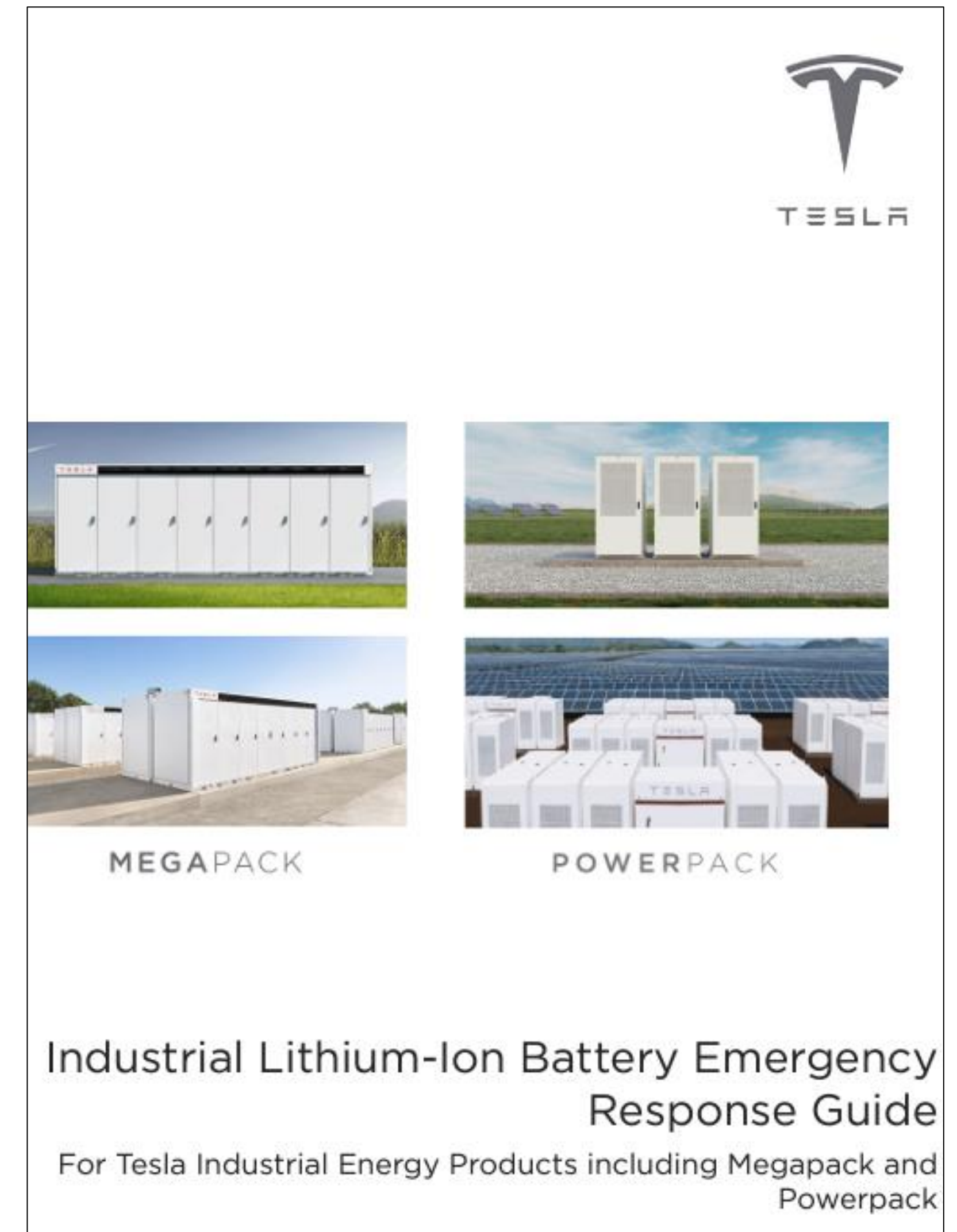




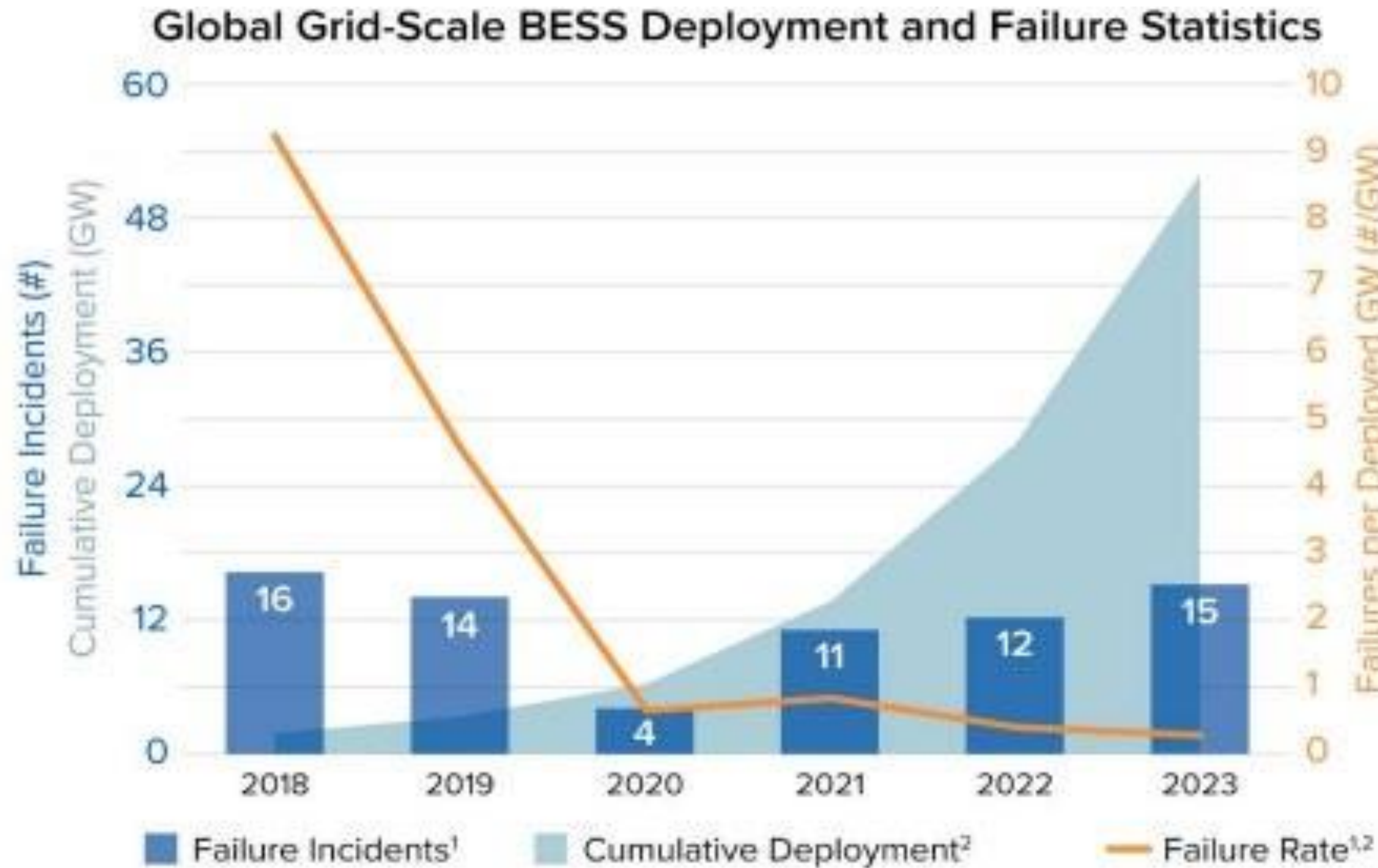
The Tesla Megapack is one of the safest battery storage products of its kind. Designed to meet international safety standards, units undergo extensive fire testing and include integrated safety systems, specialized monitoring software and 24/7 support.

Tesla Megapack battery storage units are designed with a number of safety features to mitigate the risk of fire and other hazards:

- Vents: Roof-mounted vents direct smoke, flames, and gases away from people and equipment on the ground.
- Fire testing: Megapacks undergo extensive fire testing to ensure they perform safely and in a controlled manner.
- Cooling: Megapacks have integrated heating and cooling to optimize performance.
- DC/DC converters: Module-level DC/DC converters can keep the system running if part of it fails.
- Monitoring/Alarms - Using specialized monitoring software, Tesla Megapacks have several monitoring alarms and safety features to help detect and respond to issues:
  - Telemetry-triggered alarms: These alarms monitor for issues and can automatically de-energize the system if flames are detected. They alert the Tesla Remote Monitoring team and other personnel.
  - Battery module isolation loss alarm: This alarm is added to the firmware and automatically removes the battery module from service if it triggers.
  - Coolant system telemetry data: Additional alarms have been added to this data to help identify and respond to coolant leaks.







- 2023 Installed BESS capacity globally: +50 GW
- 2023 Installed BESS capacity in USA: 16 GW
- 2024 BESS capacity will double to 30 GW

The global installed capacity of utility-scale battery energy storage systems (BESS) has dramatically increased over the last five years. While recent fires afflicting some of these BESS have garnered significant media attention, the overall rate of incidents has sharply decreased, as lessons learned from early failure incidents have been incorporated into new designs and best practices. Between 2018 and 2023, the global grid-scale BESS failure rate has dropped 97%.

Electric Power Research Institute’s 2024 White Paper: Insights from EPRI’s Battery Storage System (BESS) Failure Incidents Database – Analysis of Failure Root Cause.

Sources: (1) EPRI Failure Incident Database, (2) Wood Mackenzie. Data as of 12/31/23.

**Figure 1.** Global Grid-Scale BESS Deployment and Failure Statistics



PCR is coordinating with Sandoval County's Fire Chief Eric Masterson, and staff, to discuss emergency response, resources, training, and coordination with other entities (La Madera Volunteer Fire Department and Bernalillo County Fire Department). PCR will develop an Emergency Response Plan (ERP) in collaboration with the Sandoval County Fire Department in accordance with National Fire Protection Association (NFPA) safety standards. Implementation of the ERP will involve annual training of local fire and EMS personnel using specialized equipment and emergency response protocols. PCR will provide any necessary specialized equipment or resources for local firefighters.

The Project is designed so that a battery unit fire can be contained on-site and not spread to other battery units. Individual battery units will be placed on concrete pads and the entire BESS area will have an unvegetated gravel buffer to reduce the risk of fire escape. In the unlikely event of a battery fire, the spread of the fire off-site will also be unlikely due to the Project area's minimal wildfire risk.

On October 29, 2024, Sandoval County Fire Chief communicated with the Planning and Zoning Department that: 1) he has coordinated with PCR regarding Project emergency planning; 2) Project plans are consistent with the other solar and battery storage facilities in the County; 3) future coordination will plan training provided by PCR to ensure EMS personnel are aware of all mitigation protocols; and that Sandoval County Fire Department has no objection from a public safety approach to this proposed Project.





The ambient noise level in rural New Mexico is likely quiet, with a nighttime level of around 30 decibels (dB). The noisiest components of a solar system are the inverters, which generate a low buzzing sound as they convert electricity from the direct current (DC) generated by PV modules to alternating current (AC) used by the electric grid. Tracking equipment allowing PV modules to face the sun over the course of the day can also generate a low level of noise. However, the noise generated by solar farms is generally not audible above ambient noise outside of the facility fence. **At 10 feet away from inverters, average sound levels are between 48-72 dBA. Any sound from a PV array and equipment is inaudible 150 feet away from a project boundary<sup>(1)</sup>.**

**BESS facilities** produce noise levels generated mostly by the compressors and fans in the electrical equipment cooling systems, 70-92 dB from 1 meter away<sup>(2)</sup>.

**System operational sound levels are expected to be approximately 47-56 dB 250 ft away and approximately 38-47 dB 700 ft away<sup>(3)</sup>.**

**Sandoval County's allowable sound levels are 75 dB from agricultural, utility, and industrial activities.**

#### Sources:

1. Tech Environmental Inc. for Massachusetts Clean Energy Center. 2012. Study of Acoustic and EMF Levels from Solar Photovoltaic Projects (<https://files.masscec.com/research/StudyAcousticEMFLevelsSolarPhotovoltaicProjects.pdf>)
2. BESS Noise Challenges and Solutions. 2024. Noise Monitoring Services (<https://www.noisemonitoringservices.com/battery-energy-storage-system-bess-noise-challenges-and-solutions/>)
3. Noise Technical Report Rancho Viejo Solar Project. 2024, SWCA ([https://www.santafecountynm.gov/uploads/documents/SRA01c\\_NoiseReport\\_EIR\\_AppxC.pdf](https://www.santafecountynm.gov/uploads/documents/SRA01c_NoiseReport_EIR_AppxC.pdf))



## ACCESS ROUTE

The Project will have **two access routes**, utilized for different purposes:

1. **During construction and for emergency cases**, the Project site will be accessed from NM-14 across the Rancho de Chavez, located in Santa Fe County. This access route across private land will also be used in the event of an emergency during the project's operation period. The access agreement with the private landowner has been recorded with Santa Fe County.
2. **During operations and maintenance**, vehicles will access the Project site from NM-14 using Puertocito Road. Sandoval County maintains Puertocito Rd. within the county under a prescriptive easement. The beginning of Puertocito Rd. (0.38 mile) lies within Santa Fe County. PCR is engaged with both counties regarding ongoing roadway maintenance.

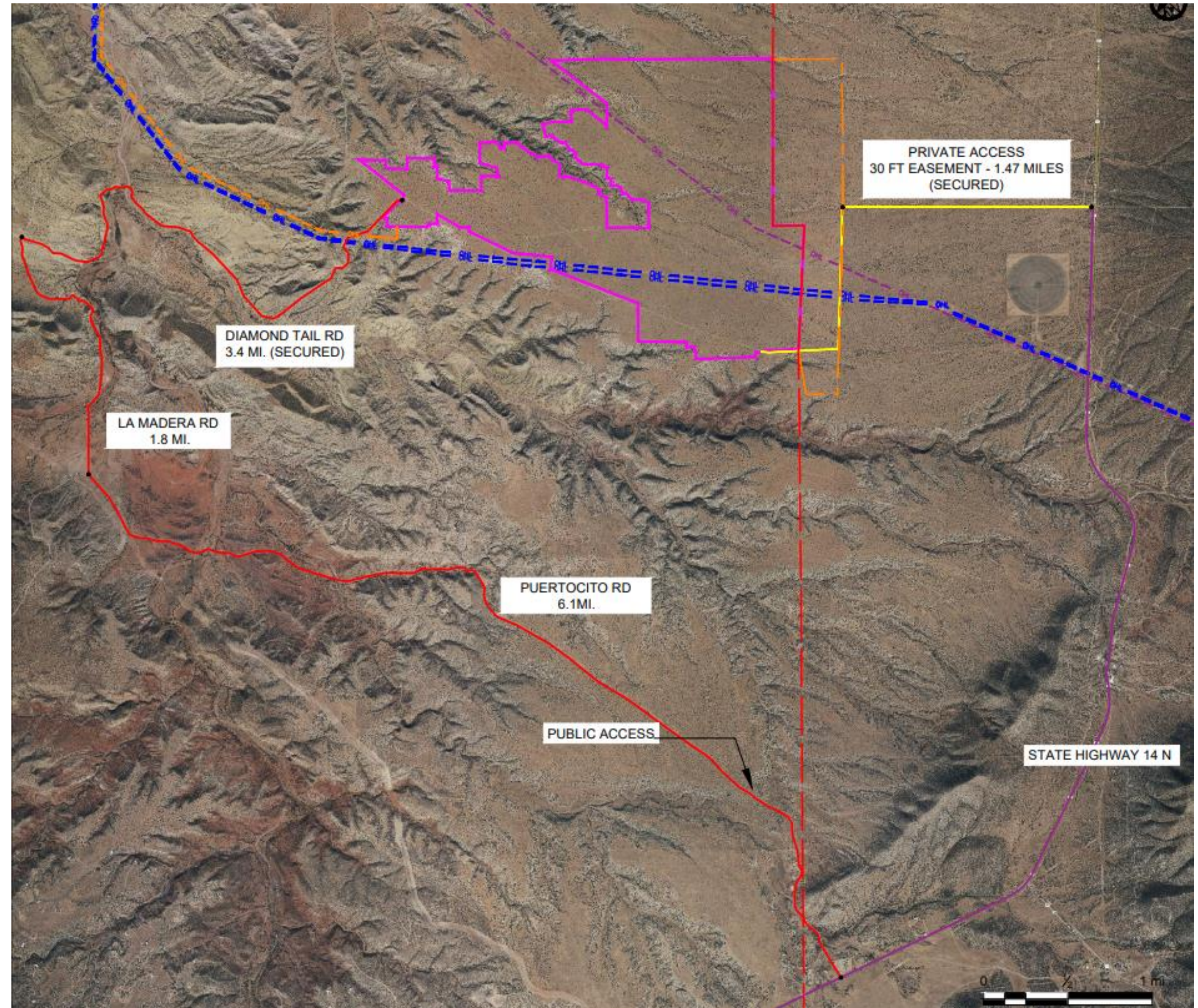
## TRAFFIC ESTIMATE

During Construction:

- Daily average semi-trucks: 6
- Monthly average semi-trucks: 120
- Daily average buses: 5
- Daily average SUV/light trucks: 7
- Daily average cars: 15

During operation:

- Daily average: SUV/light trucks: 4





The Project will use more water during construction compared to during the Operations and Maintenance period:

## **CONSTRUCTION**

During construction activities, water will be used for controlling dust, mixing concrete, and washing/cleaning activities. Construction water will be transported to the site (15/20 trucks per day). During construction, approximately 70 acre-feet of water will be used per 12 months.



## **OPERATIONS and MAINTENANCE**

During O&M period, water will be used to clean solar panels once a year, using approximately 0.4 acre-feet per year<sup>(1)</sup> (equivalent water use of about 2 residential homes).

(1) Water Use and Supply Concerns for Utility-Scale Solar Projects in the Southwestern U.S. 2013. Sandia National Laboratory ([https://energy.sandia.gov/wp-content/gallery/uploads/SAND2013\\_5238.pdf](https://energy.sandia.gov/wp-content/gallery/uploads/SAND2013_5238.pdf))



**CAPACITY**  
29,093-Gallons Nominal Capacity

**DIAMETER**  
26' 4" Diameter

**WALL HEIGHT**  
7' 2" Tank Wall Height



THANK YOU  
Questions?







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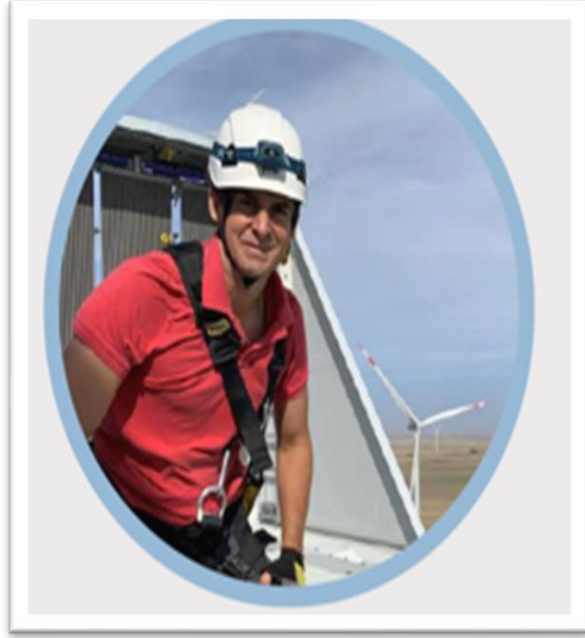
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## **Mariano Brandi – Chief Executive Officer**

Mariano brings more than 10 years of experience in Management, Logistics and Supply Chain in the Renewables, Pharmaceutical, Consumer Electronics and Postal Services industries. He is a **member of the Brandi family**, majority equity holder at PCR. Mariano was involved in the development and **construction of 329 MW** of wind generation in Argentina and started PCR's US operations in 2021 with 500 MW currently under development. He holds degrees in Industrial Engineering from the University of Buenos Aires and an MBA from IAE Business School.



## **Manuel Arancibia– Chief Commercial Officer**

Manuel brings more than 20 years of experience in Sales, M&A, Portfolio Management and Development of Renewable Energy, Conventional Generation and Smart Grid Assets both in the US and in Latin America. He was involved in structuring and **securing off-take agreements for more than 4 GW of renewable** and conventional generation capacity while working at Exelon Generation and EDP Renewables North America. He joined PCR US in 2022 and is responsible for the Commercial Activities of the US pipeline. He holds degrees in Industrial Engineering from the Technical Institute of Buenos Aires and an MBA from the University of Texas at Austin.



## **Cynthia Schuchner– Chief Construction & Engineering Officer**

Cynthia brings more than 25 years of experience in Construction, Engineering, Supply Chain and Operations in the Renewable Energy, Industrial Gas and Telecommunications industries. For the past 12 years she was involved in the Engineering, Procurement and **Construction of 500 MW of Wind and 200 MW of Solar generation** as well as **Utility Scale Battery Storage**. She joined PCR US in 2022 and is responsible for the Development and EPC of the US Renewable Energy Portfolio. She holds degrees in Industrial Engineering from the University of Buenos Aires and a Masters in Renewable Energy from San Andres University.