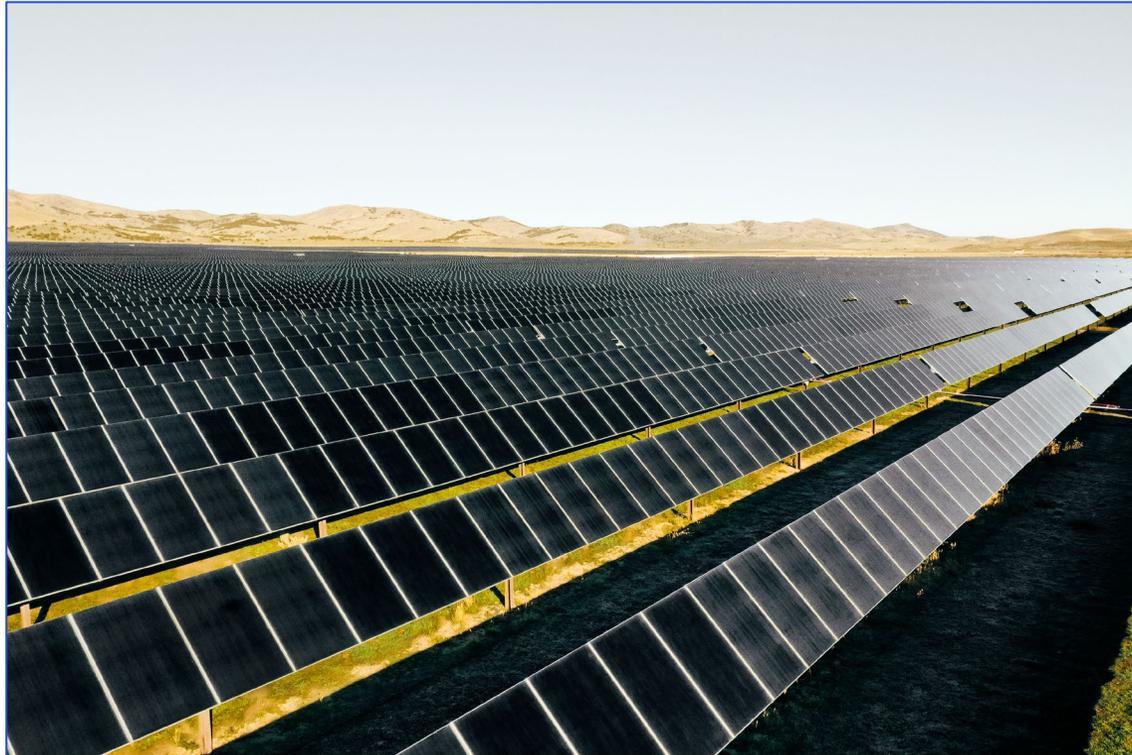


# Proposed Rancho Viejo Solar Project

---



## Neighborhood Meeting

October 4, 2022

Presented by Jonathan Moore, Matt Gordon,  
Travis Stowers, Rebecca Halford

96 MWac / 48 MW, 4-hour duration Solar + Battery Energy  
Storage System (BESS) Storage Plant  
Santa Fe County, New Mexico

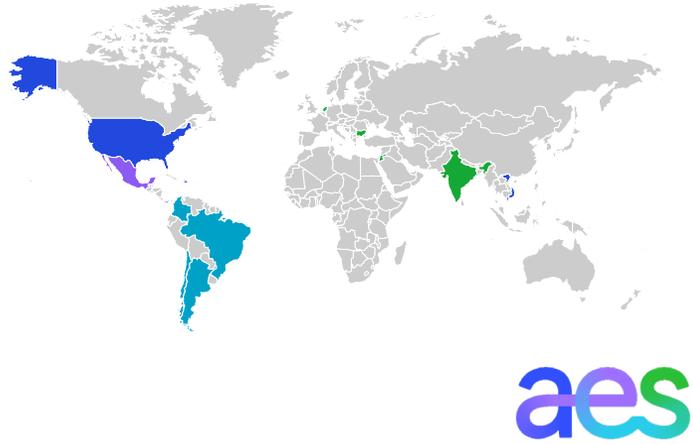




# Presentation Agenda

- AES, Project Team, and Stakeholders
- Project Location
- Project Overview
  - Site Layout
  - Point of Interconnect
  - Equipment
- Construction, Operations & Decommissioning
- Diligence & Studies
- Benefits
- Battery Storage System / Safety
- Q & A

# The AES Corporation



31,459

Gross MW in operation\*

\* 20,183 proportional MW (gross MW multiplied by AES' equity ownership percentage).

\$11.1 billion

Total 2021 revenues

3,497 MW

Renewable generation under construction or with signed PPAs

\$33 billion

Total assets owned & managed

4 Continents

14 Countries

4 Market-oriented strategic business units

6 Utility companies

2.6 million

Customers served

8,450 people

Our global workforce

Recognized for our commitment to sustainability



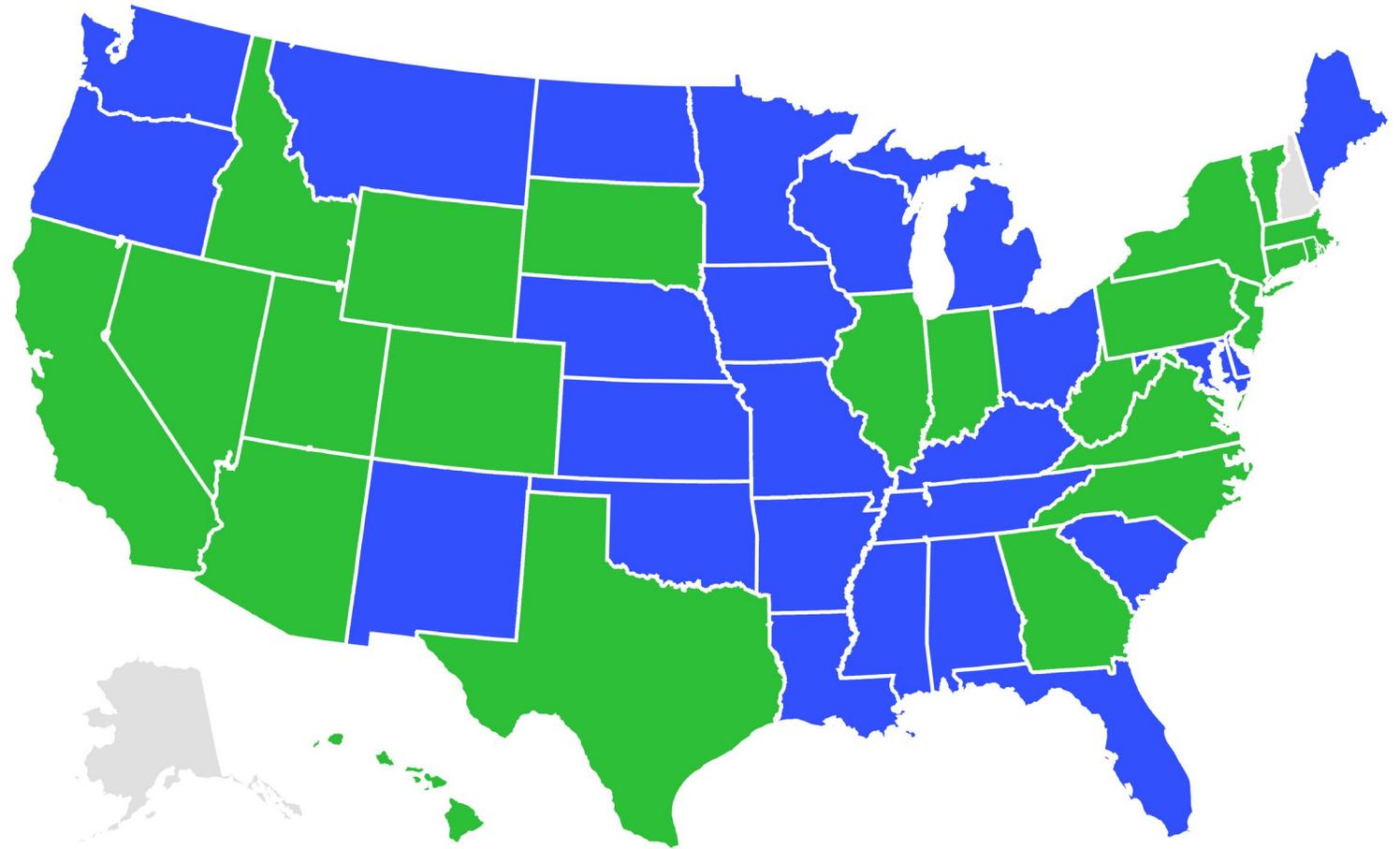
# Clean energy operating and development footprint

4.5 GW

Operating

40+ GW

Development pipeline



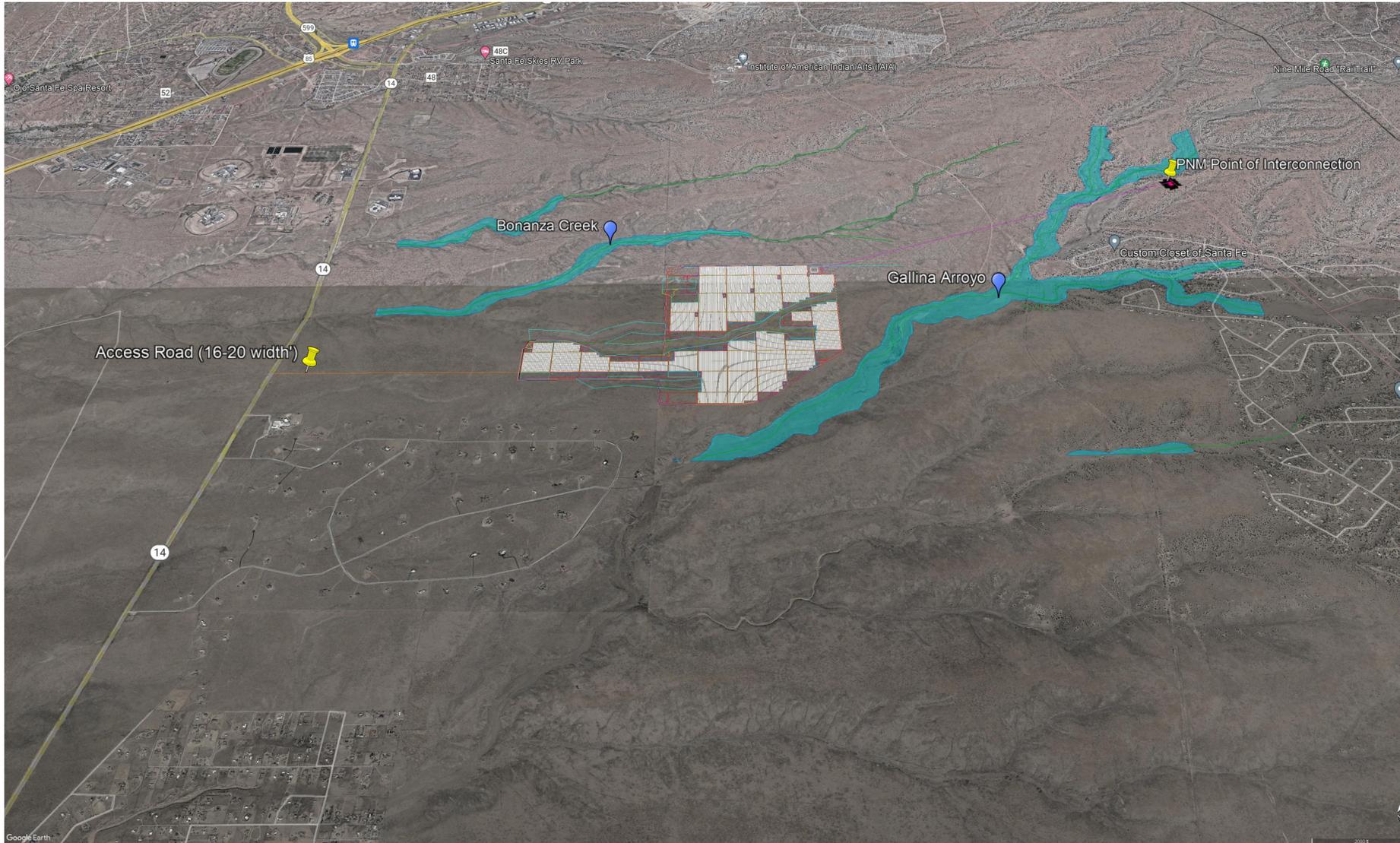
Operating

Developing

# Project Team and Stakeholders

<b>Santa Fe County</b>	Planning & Zoning Commission Board of County Commissioners Community Members
<b>AES Clean Energy</b>	Jonathan Moore, Lead Developer Matt Gordon, Permitting Lead Travis Stowers, Engineering Rebecca Halford, Stakeholder Relations
<b>SWCA (Environmental Consultant)</b>	Kim Parker, Project Consultant
<b>Landowners</b>	Rancho Viejo Limited Partnership

# Project Location



- Approximately 1 mile south of Santa Fe city limits
- Entrance to project is located 1 mile east of South Hwy 14
- Zoned RUR - Rural
- Project area – approximately 800 acres
- Located on private property

# Project Location

Project Location



View from Hwy 14 looking northeast



Photo capture location

# Project Location

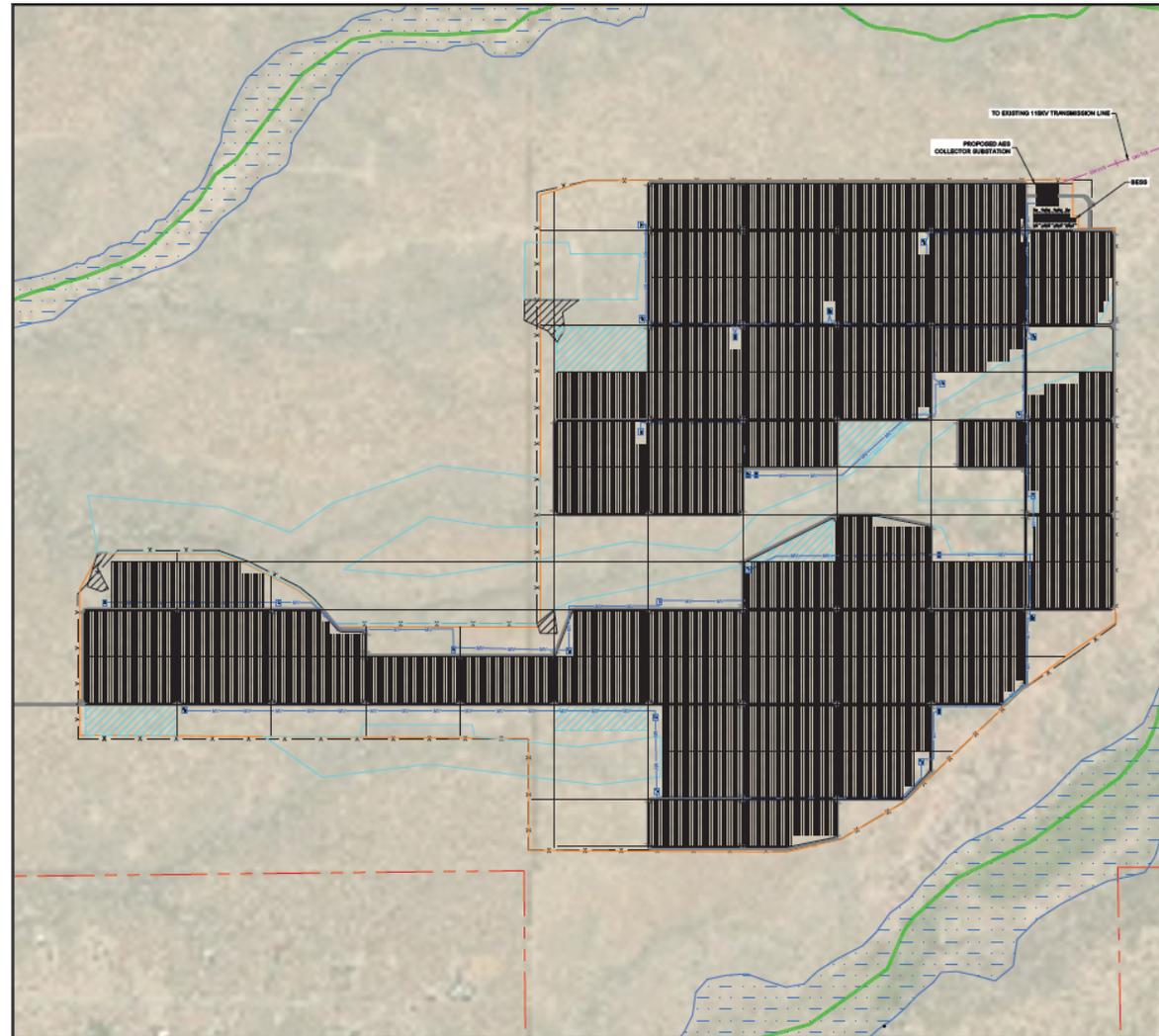
Project Location



Photo capture location

View from Camerada Road/Eldorado subdivision facing west

# Project Overview



## Technical Specifications

- 96 MW AC solar photovoltaic output
- 48 MW battery storage (4 hours)
- 1.5-mile access road
- 2.5-mile gentie corridor

## Utility-Scale Project - PNM

- Project will serve PNM transmission infrastructure
- Short-listed with PNM 2021 Replacement Generations RFP
- 20–30-year Power Purchase Agreement
- Est. April 2025 Construction Operation Date
- AES is the lifetime owner and operator of the facility

## Conditional Use Permit (SLDC)

- Santa Fe County Conditional Use Permit
- Est process 4-6 months
- Zoning: Rural Fringe & CCD
- Construction, Operations & Decommissioning

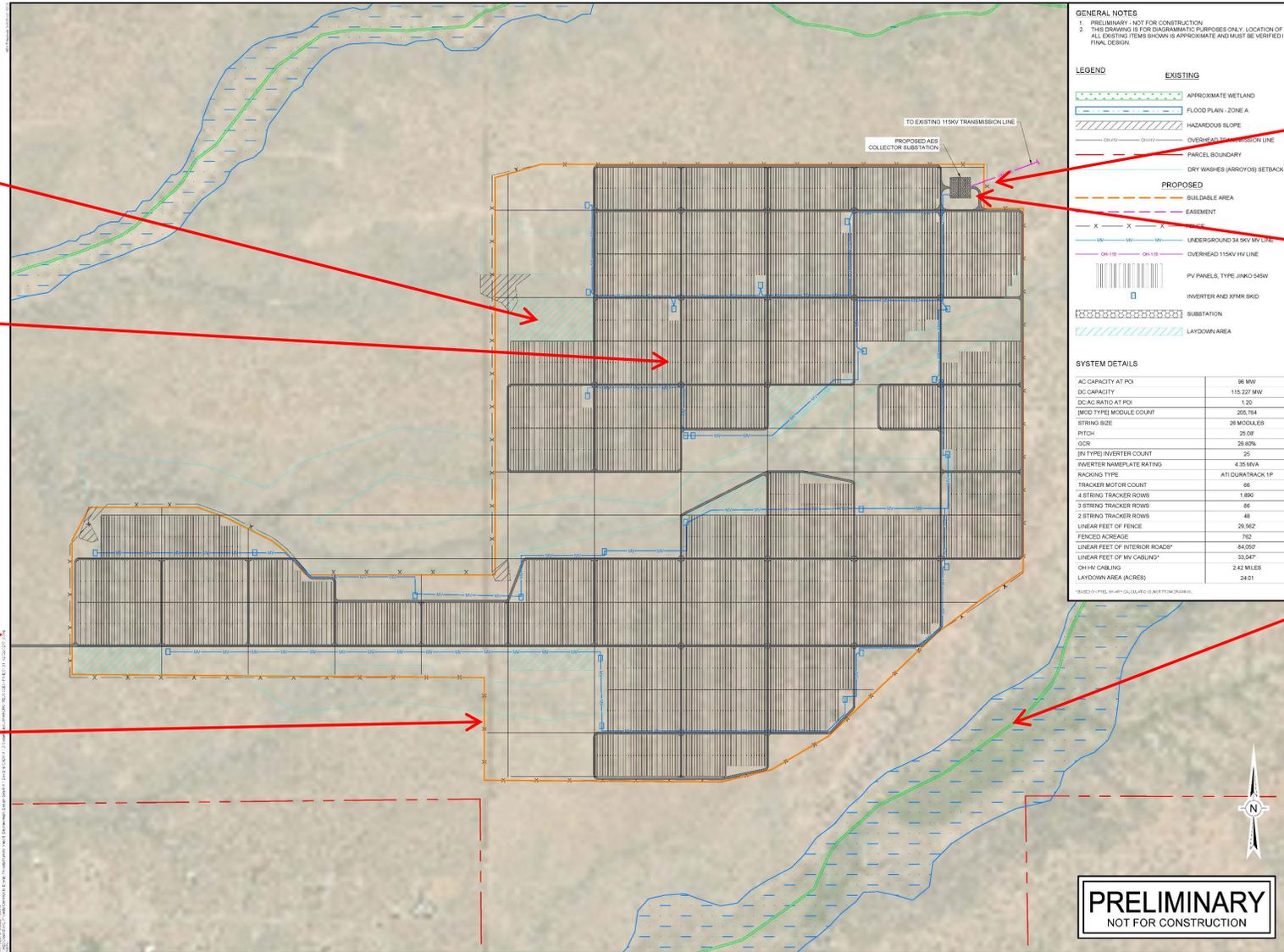
# Project Overview - Site Layout

Laydown area (temporary)

PV Modules

Access from Hwy 14

Fencing



**GENERAL NOTES**

- PRELIMINARY - NOT FOR CONSTRUCTION
- THIS DRAWING IS FOR DIAGNOSTIC PURPOSES ONLY. LOCATION OF ALL EXISTING ITEMS SHOWN IS APPROXIMATE AND MUST BE VERIFIED IN FINAL DESIGN.

**LEGEND**

EXISTING	
[Symbol]	APPROXIMATE WETLAND
[Symbol]	FLOOD PLAIN - ZONE A
[Symbol]	HAZARDOUS SLOPE
[Symbol]	OVERHEAD TRANSMISSION LINE
[Symbol]	PARCEL BOUNDARY
[Symbol]	DRY WASHES (ARROYOS) SETBACK
PROPOSED	
[Symbol]	BUILDABLE AREA
[Symbol]	EASEMENT
[Symbol]	UNDERGROUND 34.5KV MV LINE
[Symbol]	OVERHEAD 115KV HV LINE
[Symbol]	PV PANELS, TYPE JMK0.56W
[Symbol]	INVERTER AND XTRM SKID
[Symbol]	SUBSTATION
[Symbol]	LAYDOWN AREA

**SYSTEM DETAILS**

AC CAPACITY AT POI	96 MW
DC AC RATIO AT POI	1.20
MOD TYPE MODULE COUNT	205,764
STRING SIZE	29 MODULES
PITCH	25.0°
OCR	29.82%
(IN TYPE) INVERTER COUNT	25
INVERTER WAREHOUSE BATING	4.25 MW
RACKING TYPE	ATI DURA TRACK 1P
TRACKER MOTOR COUNT	66
4 STRING TRACKER ROWS	1,890
3 STRING TRACKER ROWS	96
2 STRING TRACKER ROWS	48
LINEAR FEET OF FENCE	29,562
FENCED ACREAGE	762
LINEAR FEET OF INTERIOR ROADS*	84,057
LINEAR FEET OF "W" CHANNELS*	33,049
OH HV CABLING	2.42 MILES
LAYDOWN AREA (ACRES)	24.01

\*BASED ON FIELD MEASUREMENTS AND NOT TO SCALE

**aes**  
2150 South 1300 East, Suite 600  
Salt Lake City, UT 84119-2749  
(801) 478-3500

PE STAMP:

KEY PLAN:

**REVISIONS:**

NO.	DATE	DESCRIPTION
0	02/16/2022	5% LAYOUT

**PROJECT TITLE:**  
RANCHO VIEJO SOLAR

**PROJECT LOCATION:**  
SANTA FE, NM

**SHEET TITLE & DESCRIPTION:**  
PRELIMINARY LAYOUT

**96 MWac**

**PROJ. NO.:**  
DES: I. SOBKOWCZ  
DWN: I. SOBKOWCZ  
CHK: J. BRINEY  
APV:

**DATE:** 02/16/2022

**SCALE:** 1" = 400'

**SHEET NO.:** PV-E.01.01

Start of overhead transmission line

Project Collector Sub/Battery Storage location

Existing Arroyo / Waterway

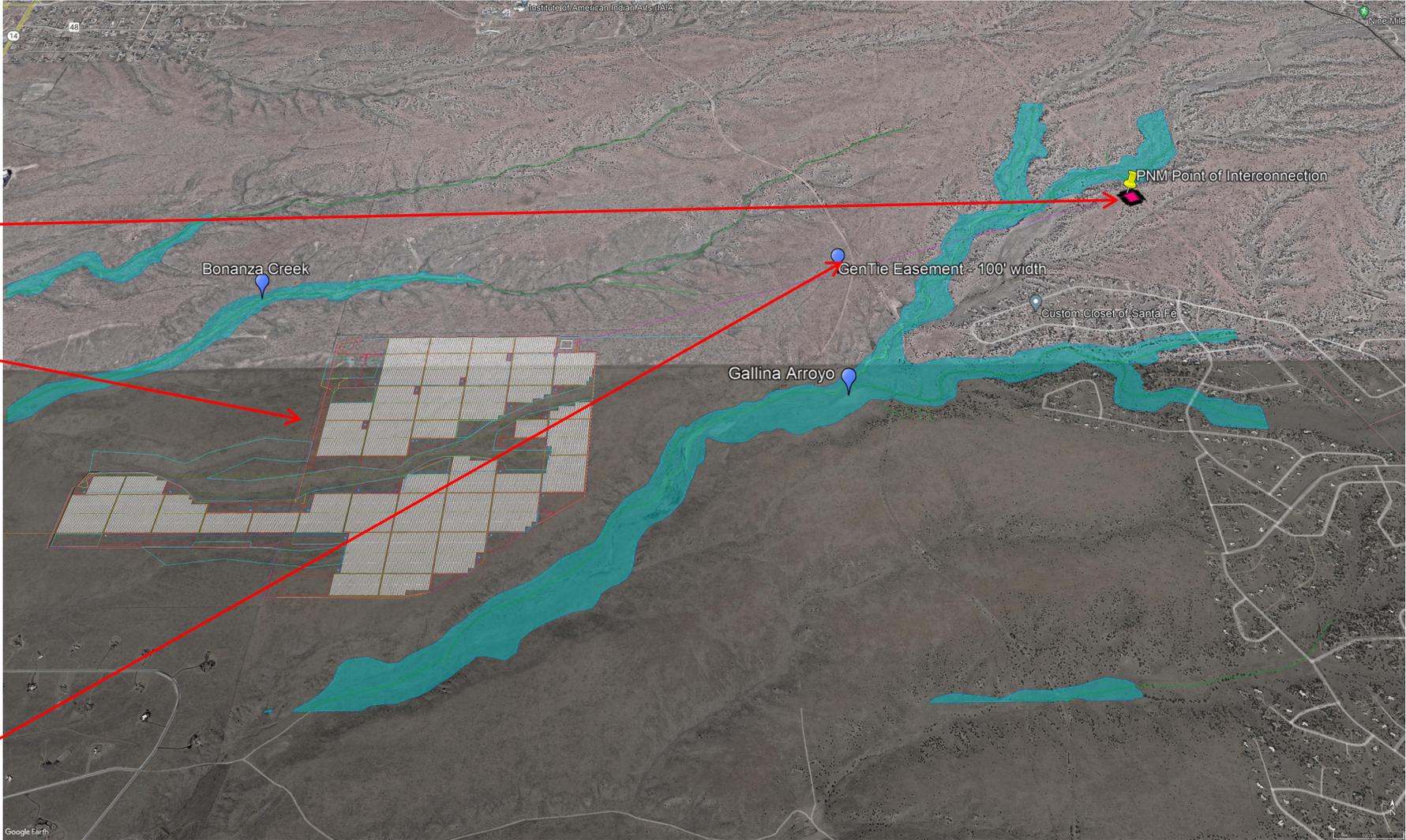


# Project Overview – Point of Interconnection

Substation

Project Location

Transmission Route



# Project Overview - Solar Photovoltaic Modules

## Structure Dimensions

- Approximately 15' max height
- 7' clearance at central rack and at flat tilt or stow mode.
- Approximately 30' aisles between modules
- Agricultural Fencing – 7-8' high

All solar panels used by AES pass the EPA's Toxic Characteristic Leaching Procedure (TCLP) test and are classified as non-hazardous and are not regulated as toxic materials.



# Questions about the project, location, & equipment

---

- Why here - Santa Fe County and why on this portion of Rancho Viejo ?
- Can AES guarantee the minimum setback of 1,000' to adjacent property lines?
- Are there plans to expand the project?
- Does the proximity threaten the health and safety of neighbors?
- How does this impact property value?
- What are toxicity risks of solar panels?
- Do solar panels heat the air above the panels?
- Is glare an issue?
- What is the current zoning of the 800 acres? How will that be changed?

# Project Overview

---

- Crystalline-silicon solar modules are made of basic “solid-state” materials, meaning there are no liquid or gaseous components. The project will be constructed with Tier I panels. Tier I panels are high quality, and rigorously tested for predictable performance, durability, and content. All solar panels used by AES pass the EPA’s Toxic Characteristic Leaching Procedure (TCLP) test and are classified as non-hazardous, and not regulated as toxic materials.
- PV systems do not emit any material during their operation. Electromagnetic fields (EMFs), are often referred to as non-ionizing radiation, meaning the radiation does not have enough energy to damage DNA. Studies prove modern humans are all exposed to EMFs throughout our daily lives, including wall-sockets, cellphones, and computers, without negative health impacts. Someone outside of the fenced perimeter of a solar facility is not exposed to significant EMF from the solar facility. Therefore, there is no concern or negative health impact from EMF produced in a solar farm.
- Solar systems are governed by the same Building/Electrical/Fire codes that govern the construction of homes and other buildings with electrical systems in the community. The local fire and emergency management organizations will be thoroughly informed about the project and all access points available to them. Turn around radius will be reviewed to assure local equipment can operate. The project will be fenced and secured with access only by approved personnel.

# Answers about the project, location, & equipment

---

## Why here?

Utility-scale solar cannot be built remotely as it needs to serve the utility power loads (where people live) and access utility transmission lines/infrastructure (also where people live).

- The NM Renewable Portfolio Standards (RPS) applied to state IOUs requires a 50% total retail sales from renewable energy by 2030
- The PNM utility load territory includes Albuquerque, Rio Rancho, Los Lunas, Belen, Santa Fe, and Las Vegas, New Mexico – this corridor contains the load infrastructure
- Santa Fe is within the PNM service area and has only two 115kV lines located in a 3-mile radius
- The land that the project is sited on is 1,000+ contiguous acres, accessible to the PNM service lines, buildable (flat, south-facing, and unobstructed), and the landowner is willing to partner with us
- The privately owned land is surrounded by state lands and waterways (arroyos)
- The project will be set back at least 1 mile from the NM Hwy 14 Turquoise Trail scenic corridor
- The project site is set outside of the community college district
- The project avoids the Gallina arroyo and Bonanza Creek arroyo and tributaries
- The project is a setback as far as possible from neighbors – at least 1,000' from nearest property lines (county requirement is 25' setback)
- The distance from the available transmission line is < 3 miles

# Answers about the project, location, & equipment

---

Can AES guarantee the County required minimum setback of 25' to adjacent property lines?

- Yes. AES guarantees a minimum setback of 1,000' to any adjacent property line/boundary.

Are there plans to expand the project?

- There are no plans to expand the project. This facility, known as Rancho Viejo Solar, is sized at 96 MW AC and will NOT increase in size. AES has two community solar projects in early-stage development proposed for Santa Fe County that will enter into the competitive PNM RFP solicitation, and if awarded, will also go through the County permitting process. These two proposed community solar projects are not associated with the proposed Rancho Viejo utility-scale solar facility. They will be located on separate parcels of land and interconnect to the PNM grid in different locations.

Does proximity threaten the health and safety of neighbors?

- No. The project was designed and implemented to not adversely impact the health and safety of neighbors.
- Ultimately, Santa Fe County decision-makers will consider health, safety, and welfare when they consider the project.
- AES is working with appropriate third parties to provide safety and fire management training for fire departments located within the vicinity of the project. This training will occur within the next five months and again prior to the completion and energization of the facility. The training will also include "train the trainer" sessions for future emergency response teams.

# Questions about the project, location, & equipment

---

How does this impact property value?

- AES has engaged with a third-party national and local appraisal firm that is completing a property value analysis. W
- Numerous studies have examined this question, considering the size of the facility, distance from adjacent properties, vegetation, screening, noise, odor traffic, alternative uses permitted under current zoning, etc.
- The analysis findings and report will be submitted to Santa Fe County with our CUP application.

What are toxicity risks of solar panels?

- No reports provide evidence that there any health issues caused by solar panels.
- All AES solar panels pass the EPA's Toxic Characteristic Leaching Procedure (TCLP) test and,
- Are classified as non-hazardous and are not regulated as toxic materials.

Do solar panels heat the air above the panels?

The surface of PV modules is regularly warm but not hot to the touch on a summer day in full sun. However, the PV Heat Island (PVHI) effect has been studied and early results indicate that temperatures may be 3-4 deg C hotter directly over a PV array. The study is not conclusive regarding the effect of varying vegetation and albedo relative to the amount of temperature change, though.

# Answers about the project, location, & equipment

Is glare an issue?

- Solar panels are intended to capture the most light possible and are specifically designed to reduce reflection and glare. Modern solar panels reduce reflection by using anti-reflection coatings (ARC) and by texturing the surface. According to the National Renewable Energy Laboratory, solar panels reflect as little as 2% of incoming sunlight and produce less glare than standard windows and water. The Federal Aviation Administration (FAA) produced a final policy report that found solar projects do not create hazardous glare for aircraft in the area.

What is the current zoning of the 800 acres? How will that be changed?

- Current zoning for the solar project: Rural Fringe (RUR-F),
- Current zoning for a portion of the gen-tie line and Point of Interconnection at the existing PNM line:
- Community College District (CCD) is the zoning of adjacent parcels
- Underlying zone district does not change,
- Conditional Use Permits (CUP) are not permitted in zoning districts as a matter of right but, may, under appropriate standards and factors set forth in the SLDC, be approved, approved with conditions, or denied.
- Conditional uses are those uses that are generally compatible with the land uses permitted by right in a zoning district but that require individual review

# Construction, Operations & Decommissioning

**Construction Start / timeline** – Anticipated early 2024 , 10-12 months

**Ground Treatment / Natural Vegetation** - Solar racking system does not require leveling the land or installing complex foundations. Installation method - either pile or screw driven poles, depending on soil compactness.

Revegetation - establishment of native vegetation/certified weed free seed mix

**Dust Mitigation** - Water from trucked-in resources for dust mitigation. Project must will comply AES will work with all applicable County, State and Federal standards and regulations

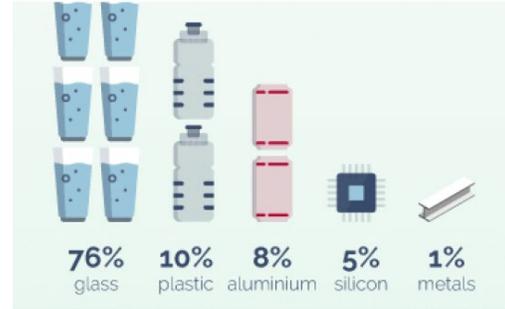
**Traffic** - Construction period - 10-15 max deliveries per day - construction crew traffic

- During operation - Remote operated with limited site traffic - Est. 4 trips per month

**Decommissioning and Restoration** - End of project useful life

- Decommissioning & Restoration Plan & Estimate
  - Removal of all installed equipment
  - Dismantle, reuse where possible, recycle
  - Site restoration – return to pre-construction condition
- Decommissioning and restoration guaranty

# Project Overview - Recycling



## PV Modules

- 90% of module material by weight is glass and aluminum.<sup>(1)</sup>
- 95% of the materials in PV modules are recyclable with 2022 technologies.<sup>(1)</sup>
- Emerging market, with advancements in recycling technology expected – also applicable to BESS.
- AES is in discussions with Equitable Solar Solutions for panel reuse / recycling upon decommissioning of all projects

## BESS

- Contracts with BESS manufacturers (Samsung, LG) mandates the recycling of the equipment at the end of the system's life.
- BESS comprised of:
  - Housing (steel)
  - Wiring (copper)
  - Inverters/transformers (steel, copper)
  - Batteries

1 - <https://www.energy.gov/sites/default/files/2022-03/Solar-Energy-Technologies-Office-PV-End-of-Life-Action-Plan.pdf>

# Questions about construction, operation, & decommissioning

---

- Is dust pollution an issue during and after construction?
- Will AES clearcut and/or grade all the land under the array?
- Describe the post-construction landscape under the solar panels – dirt, natural vegetation, rock?
- How do you protect the facility from lightning strikes?
- What type of fencing will be used to surround the project? Will it encompass the entire complex?

# Answers about construction, operation, & decommissioning

The project will be constructed at the existing grade to the greatest extent possible, minor grading and/or grubbing may occur throughout the portions of the solar facility, BESS, foundation pads, equipment storage, and staging areas. Grading will conform to accepted slope stability requirements. Active construction would take approximately 12 months. Dust control best management practices that would be employed during construction would generally include:

- Limit vehicular speeds on non-paved roads.
- Apply water or dust palliative to disturbed soil areas of the project site to control dust and maintain optimum moisture levels for compaction, as needed.
- Apply the water using water trucks. Minimize water application rates, as necessary, to prevent runoff and ponding.
- Apply dust control measures to haul roads to adequately control wind erosion during windy conditions (forecast or actual wind conditions of approximately 25 mph or greater).
- Cover exposed stockpiled material areas.
- Suspend excavation and grading during periods of high winds.
- When a project reaches the end of its project life, the project is responsible for executing the approved Decommissioning Plan, including abiding by all local and state decommissioning requirements. This includes the removal, recycling, and disposal of all equipment and other structures associated with the project, as applicable. The land surface within the project area will be sensibly restored to pre-project conditions to allow a return to desert vegetation status or other uses consistent with the land-use policies at the time.

# Answers about construction, operation, & decommissioning

## Dust and Glare:

Solar panels are intended to capture as much sunlight as possible and are specifically designed to reduce reflection and glare. Modern solar panels reduce reflection by using anti-reflection coatings (ARC) and by texturing the surface. According to the National Renewable Energy Laboratory, solar panels reflect as little as 2% of incoming sunlight and produce less glare than standard windows and water. The Federal Aviation Administration (FAA) produced a final policy report that found solar projects do not create hazardous glare for aircraft in the area.

- Active construction would take approximately 12 months. Dust control best management practices employed during construction will generally include
  - Limit vehicular speeds on non-paved roads.
  - Apply water or dust palliative to disturbed soil areas of the project site to control dust and maintain optimum moisture levels for compaction, as needed.
  - Apply the water using water trucks. Minimize water application rates, as necessary, to prevent runoff and ponding.
  - Apply dust control measures to haul roads to adequately control wind erosion during windy conditions (forecast or actual wind conditions of approximately 25 mph or greater).
  - Cover exposed stockpiled material areas.
  - Suspend excavation and grading during periods of high winds.

# Answers about construction, operation, & decommissioning

Is dust pollution an issue during and after construction?

- Active construction would take approximately 12 months.
- Fugitive dust would be managed in accordance with County or EPA rules and requirements.
- Dust control best management practices that would be employed during construction would generally include:
  - Limit vehicular speeds on non-paved roads.
  - Apply water or dust palliative to disturbed soil areas of the project site to control dust and maintain optimum moisture levels for compaction, as needed.
  - Apply the water using water trucks. Minimize water application rates, as necessary, to prevent runoff and ponding.
  - Apply dust control measures to haul roads to adequately control wind erosion during windy conditions (forecast or actual wind conditions of approximately 25 mph or greater).
  - Cover exposed stockpiled material areas.
  - Suspend excavation and grading during periods of high winds.

Will AES clearcut and/or grade all the land under the array?

- The project will be constructed at the existing grade to the greatest extent possible, minor grading and/or grubbing may occur throughout the portions of the solar facility,
- The area around the Project Collector (2 AC) and BESS (4 Ac) will be graded and leveled to include a gravel surface with concrete foundation pads for certain equipment, including the individual battery containers.
- Grading will conform to accepted slope stability requirements. Pole mounts used in the solar racking system do not require leveling the land or installing complex foundations.
- The installation method will be either pile or screw driven, depending on the compactness of the soil.

# Answers about construction, operation, & decommissioning

---

Describe the post-construction landscape under the solar panels – dirt, natural vegetation, rock.

- Reclamation would include the establishment of native vegetation.
- Certified weed-free native seeds would be used.

How do you protect the facility from lightning strikes?

- AES project engineering utilizes standards to design proper grounding systems as well as lightning arrestors (surge arrestors) to inhibit lightning-related equipment failures.
- The PV racking can be inherently grounded through its driven piles and grounding grids are regularly included in foundation design, to which BESS enclosures may be tied.
- This allows for lightning to pass around sensitive equipment, conductively through to the ground.

What type of fencing will be used to surround the project? Will it encompass the entire complex?

- 7-8' high Agricultural fencing, which allows smaller-sized wildlife to pass through while keeping larger animals out of the facility
- The solar facility will be enclosed and secured by fencing (see project overview section for fencing layout).

# Environmental Diligence

---

## Completed

- **Aquatic Resources Inventory Report:** May 2022
- **Biological Survey Report:** May 2022
- **Phase 1 Environmental Site Assessment:** May 2022
- **Geotechnical Investigation:** September 2022
- **Cultural Resources Study:** July 2022
- **Glint / Glare:** August 2022
- **Visual Simulations:** June 2022

## In Progress

- **Environmental Impact Report:**  
October 2022
- **Hydrologic and Hydraulic Study:**  
October 2022
- **Site Thresholds Analysis:** October  
2022

# Questions about environmental impact

---

- Where can I obtain a copy of the Environmental Impact Statement (all reports)?
- What are the impacts on water resources?
- What will be the water source to the complex? Expected use annually?
- How often will the panels be washed? How much water will be used for panel washing?
- Can you qualify the noise made by the panel (racking) motors?
- How many air conditioning units will run most of the time? How many units and what direction will they face?
- What is the impact on the scenic view?
- Can you qualify the noise made by the panel motors? How many panel motors will there be?
- Will there be any outdoor lighting? When will it be on?
- What is the impact on the environment?

# Answers about environmental impact

---

As part of the development process, we conduct studies to ensure we are aware of all environmental elements. By identifying these resources at the front end, we can design our facility in a way that avoids any impacts. These studies include:

- A delineation of any wetlands and streams
- A search for any hazardous materials on site
- An assessment of potential cultural, historic, archaeological, and religious resources within and surrounding the site
- An assessment of any threatened and endangered wildlife habitat on site
- An assessment of visual resources
- An assessment of local floodplains and hydrology
- An assessment of soils and geology - including on-site geotechnical and pile load testing studies
- A survey of the terrain, boundary, and real estate encumbrances
- Infiltration testing to understand soil drainage rate

An Environmental Impact Report (EIR) including these studies is being prepared in accordance with the requirements of Santa Fe County to identify potential impacts and associated mitigation measures for the construction and operation of the proposed project. The EIR will be part of the Conditional Use Permit application submitted to Santa Fe County.

# Answers about environmental impact

Where can I obtain a copy of the Environmental Impact Statement (all reports)?

- The project is not required to prepare an Environmental Impact Statement pursuant to the National Environmental Policy Act. However, the project is required to prepare an Environmental Impact Report in accordance with the requirements of Santa Fe County.
- The Environmental Impact Report, and associated environmental technical reports, will be part of the public record when submitted to Santa Fe County as part of the Conditional Use Permit application package.

What are the impacts on water resources?

- Construction impacts would generally be related to stormwater runoff. A Stormwater Pollution Prevention Plan (SWPPP) would be prepared in compliance with the state's Construction General Permit, and Clean Water Act Section 402, National Pollutant Discharge Elimination System (NPDES). The SWPPP would identify best management practices (BMPs) to minimize stormwater runoff and sedimentation during construction activities. Stormwater BMPs that would be employed during construction include:
  - Place silt fences and/or straw wattles along the downgradient perimeter of the project to minimize stormwater sedimentation from leaving the site.
  - Minimize grading and vegetation removal, and limit surface disturbance during construction to the time just before solar module support structure installation.
- One ephemeral drainage (Gallina Arroyo) containing an ordinary high-water mark was observed during the April 2022 aquatic delineation survey. Impacts to this drainage are estimated to be less than 0.1 acre, and are limited to the gen-tie crossing. Project would likely qualify for coverage under Nationwide Permit (NWP), per Section 404 of the Clean Water Act.
- Water for construction uses, such as dust suppression. Construction water use would be approximately 100 to 150 acre-feet over a 12-month construction period.
- Long term water uses would be approximately 2 to 3 acre-feet per year and would be associated with periodic panel washing.

# Answers about environmental impact

---

What is the impact on the scenic view?

- Viewshed analysis has been completed, including visual simulations.
- The Turquoise Trail Scenic Byway is located approximately 2 miles west of the proposed Project and is the closest National Historic Trail to the proposed Project. There is potential for viewers from this location to notice new structures in the distance, but the Project would not attract the attention of the casual observer. The primary visual features in the foreground and mid-ground of the viewshed include existing transmission lines, the San Marcos subdivision, the Eldorado subdivision, and roadways. The visual impact of the proposed Project would be minimal and would not degrade the existing landscape from what is already present.
- Long-term visual impacts include operation and maintenance of Project components. Overall, these new elements would remain subordinate to the existing landscape character.
- Glare analysis completed: No glare predicted.

Can you qualify the noise made by the panel motors? How many panel motors will there be?

- There will be 66 tracker motors. However, the main source of noise with solar arrays is from inverters. The project will have approximately 25 inverters, which are dispersed throughout the facility.
- Inverters have a sound that can be characterized as a low hum. At 15 meters have a decibel (dB) level of 61, which is similar to a normal conversation. At 50 meters the sound attenuates to 50 dB, very faint – similar to moderate rainfall. At 200 meters the sound attenuates to 44 dB, which is a very low perceptibility.
- \* Inverter: Basic function is to “invert” the direct current (DC) output into alternating current (AC).

# Answers about environmental impact

---

Will there be any outdoor lighting? When will it be on?

- It is anticipated there will be a motion sensor, downcast shaded security lighting at the access gate, battery storage, and substation location, and solar pads.
- Downcast lighting protects the ability to view the night sky by restricting unnecessary upward projection of light.

What is the impact on the environment?

- An environmental impact report (EIR) was prepared in compliance with Santa Fe County's Sustainable Land Development Code.
- The resources addressed in this EIR include air resources; biological resources; cultural, historic, archaeological, and religious resources; geological, paleontological, and soil resources; geographic resources; health and safety; land use; minerals and mining resources; noise resources; socioeconomic resources; roads; water resources; and visual resources.
- The analysis evaluates impacts to these resources associated with the construction, operations and maintenance, and decommissioning of the project.
- The EIR also identifies mitigation measures that would be implemented to avoid and minimize significant impacts.
- Based on the draft EIR, the Rancho Viejo Solar Project is not expected to unduly impair important environmental values.

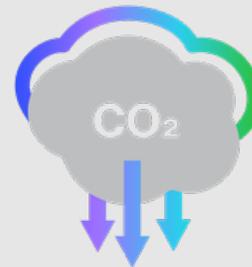
# Benefits: Environmental



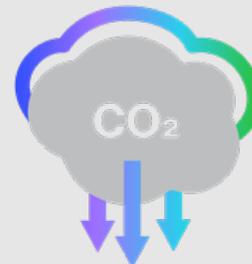
Assist Santa Fe County in reaching its Net-Zero greenhouse gas emissions goal by 2050



Renewable power for equivalent of approximately **23,000** homes' annual electricity use



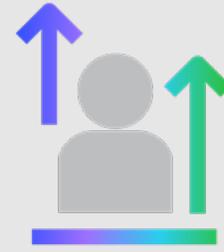
Reduces approximately **120,000** tons of carbon dioxide emissions annually



Reduced carbon dioxide emissions are equivalent to **13,500,000** gallons of gas

Rancho Viejo Solar

# Benefits: Economic



~200 **construction jobs**

**Contributions to local services**  
(accommodation, restaurants,  
professional services)

Local Socio-economic  
partnerships



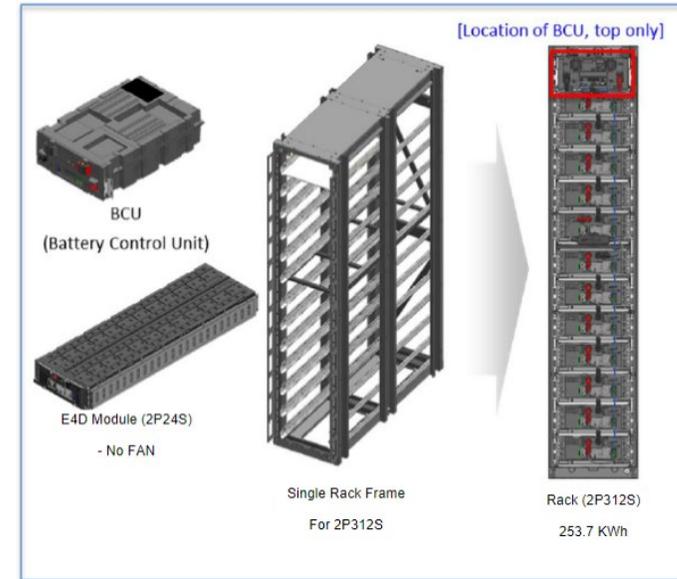
A third-party Economic Impact Report is underway and will determine all economic benefits including anticipated tax revenue, wages, and local spending



Market-competitive supply of  
energy at a long-term fixed cost

\*Total estimated tax revenue over 30 year term, actual revenue may be higher

# Battery Energy Storage System



## Typical Installation -

- Individual batteries are housed in units that are approximately the size of a shipping container.
- Each container has a fully integrated system of HVAC for temp control, sensors and controls for remote monitoring, as well as a built-in fire suppression system.
- The battery containers at Rancho Viejo will be grouped together on concrete pads. Each pad is surrounded by a non-vegetated / gravel fire break for an added layer of protection.

# Questions about BESS safety & fire prevention

---

- How many lithium-ion batteries will be stored in each of the 39 containers and how many cells would one battery have?
- What is the fire danger of lithium-ion batteries and how is prevention and mitigation addressed?
- What are the toxicity risks of batteries ?
- What are the dimensions of the containers are going to be, height, width and length?
- Will there will be a liquid electrolyte in the batteries?
- How far apart will the battery BESS containers be placed?

# Questions about BESS safety & fire prevention

---

- Are you aware of any fires using these same model BESS battery systems? When? where?
- Has anyone been injured or killed due to fires originating from a shipping container sized BESS battery system?
- Describe the fire suppression techniques currently used to fight large container sized lithium-ion battery fires. Is the gas used going to be FM 200 or 3M Novec 1230?
- How much distance from the BESS containers to a flammable landscape?
- Will the solar panels act as a fire break towards neighboring subdivisions?
- Will the fire department receive equipment and training specific to fighting fires originating in the materials used onsite?
- Will the BESS air conditioners have weather and noise suppressing shields on the outside?

# Answers about BESS safety & fire prevention

The combination of solar + storage will allow the utility to call upon the energy stored when it is needed most, day or night

- helping to offset night-time fossil fuel generation
- Help ramp up toward peak energy demand periods (instead of using fossil fuel generation)

How many lithium-ion batteries will be stored in each of the 39 containers and how many cells would one battery have?

- 52 40' ISO containers
- Approx. 260 modules per container (20 racks with 13 modules each)
- Total modules =  $52 \times 260 = 13,520$
- Each module contains 44 cells in a 2P22S configuration

What is the fire danger of lithium-ion batteries and how are prevention and mitigation addressed?

- Multiple options are available depending on the nature of the hazard. The first step is always to prevent the hazard, which is done with a multitude of risks management layers: the battery management system maintains nominal operations and separates a battery string from hazards when necessary; site SCADA systems identify hazardous conditions and can automatically stop the system and alert response personnel, and non-battery fires that may result in a battery fire are dealt with by the same measures as non-battery sites (defensive posturing and material-specific suppression). If a battery fire is initiated, the enclosures planned for this site would release fire suppressant in large concentrations directly into the initiating cell, removing heat and preventing thermal runaway throughout the enclosure. UL 9540 certification addresses safety and requires UL 9540a test results to be available for review. The UL 9540a tests of this system indicate adequate prevention of thermal runaway. The AES Energy Storage solution will achieve UL 9540 certification prior to site commercial operation.

# Answers about BESS safety & fire prevention

What are the toxicity risks of batteries?

- Proper transportation, installation, operation, and disposal of batteries poses no toxicity risks to humans. If a battery is damaged during any of the phases of a battery's life, the proper response requires safe disposal, in which toxicity is contained as a part of the recycling and material re-capture. Lithium-ion batteries include metals, such as lithium, copper, and aluminum, as well as organic chemicals compounds sealed in metal and plastic casing. The amounts and concentration of liquid is such that damage is not expected to leak any fluids.

What are the dimensions of the containers are going to be, height, width and length?

- 39 units @ 45' x 8'x 9.5'

Will there be a liquid electrolyte in the batteries?

- AES uses lithium-ion batteries that contain liquid electrolytes. The batteries are sealed and inhibit any release of the liquid.

How far apart will the battery BESS containers be placed?

- Two back-to-back units per group with 3' spacing and
- 17' between the groups of two

# Answers about BESS safety & fire prevention

Are you aware of any fires using these same model BESS battery systems? When? where?

- Several BESS battery fires have occurred though AES engineers are not aware of any known fires that have occurred with this model battery (as a reference point, Tesla's California Moss Landing battery complex caught fire). With each event, the energy storage industry has gathered several lessons learned and AES is currently applying the latest leading practices to address each lesson.
- Yes, Tesla's California Moss Landing battery complex caught fire. Please see ref. link.  
<https://www.canarymedia.com/articles/energy-storage/tesla-grid-battery-fire-shows-young-industrys-failures-and-successes>

Has anyone been injured or killed due to fires originating from a shipping container sized BESS battery system?

- In 2019, 4 firefighters were injured in an event that reshaped the energy storage industries view on safety. The system was larger than a shipping container, though lessons learned were adopted into then-emerging standards (UL9540 and NFPA 855) as well as common practice by AES. The hazards are understood to a much finer degree and resulted in design changes to AES's current energy storage solution. Specifically, the management of both fire and flammable gases is addressed and tested.

# Answers about BESS safety & fire prevention

Describe the fire suppression techniques currently used to fight large container sized lithium-ion battery fires. Is the gas used going to be FM 200 or 3M Novec 1230?

- Multiple options are available depending on the nature of the hazard. The first step is always to prevent the hazard, which is done with a multitude of risks management layers: the battery management system maintains nominal operations and separates a battery string from hazards when necessary; site SCADA systems identify hazardous conditions and can automatically stop the system and alert response personnel; and non-battery fires that may result in a battery fire are dealt with by the same measures as non-battery sites (defensive posturing and material-specific suppression). If a battery fire is initiated, the enclosures planned for this site would release fire suppressant in large concentrations directly into the initiating cell, removing heat and preventing thermal runaway throughout the enclosure. UL 9540 certification addresses safety and requires UL 9540a test results to be available for review. The UL 9540a tests of this system indicate adequate prevention of thermal runaway. The AES Energy Storage solution will achieve UL 9540 certification prior to site commercial operation.

# Answers about BESS safety & fire prevention

---

What will be the ground treatment underlying the battery containers and substation?

- Concrete pads directly underneath the containers, surrounded by gravel.

How much distance from the BESS containers to a flammable landscape?

- The gravel will surround the concrete pads and containers, extending approximately 6 feet in circumference.

Will the solar panels act as a fire break toward neighboring subdivisions?

- The solar panels will provide additional clearance between the property boundary and the BESS equipment.

Will the fire department receive equipment and training specific to fighting fires originating in the materials used onsite?

- AES is working with appropriate third parties to provide safety and fire management training for fire departments located within the vicinity of the project. This training will occur within the next five months and again prior to the completion and energization of the facility. The training will also include "train the trainer" sessions for future emergency response teams.

# Answers about BESS safety & fire prevention

---

Will the BESS air conditioners have weather and noise-suppressing shields on the outside?

- The project will include 39 battery containers, which are located over 1-mile from residential houses. The project will include 78 heating ventilating and air conditioning (HVAC) units. Two HVAC units will be placed at the end of each battery container, however only one HVAC per unit will be operating at any one time (the other is for redundancy purposes). At 50 meters the sound attenuates to 50 dB, very faint – similar to moderate rainfall. At 200 meters the sound attenuates to 44 dB, which is a very low perceptibility. The HVAC units are located over 1-mile from residential houses.
- The project will comply with legal noise limits.
- The facility is virtually silent, and the ac units are equivalent to a conversation-level volume.
- The HVAC is rated for outdoor use. AES specifies site-specific environmental coatings and materials.



To create a better future,  
we need to accelerate a  
**100% carbon-free**  
energy grid

For a truly 100% carbon-free grid, load  
and carbon-free generation must be  
matched on an hourly basis

---

Thank you