Plan of Development

ROUGH HAT CLARK COUNTY SOLAR PROJECT

Submitted By:

CANDELA RENEWABLES, LLC

Submitted To:

BUREAU OF LAND MANAGEMENT
Southern Nevada District

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1 Project Description

1.1 Introduction

1.1.1 Type of Facility, Planned Uses, Generation Output

Candela Renewables, LLC (Applicant) proposes to construct, operate and decommission the Rough Hat Clark County Solar Project (Project). The Project would be a up to 400-megawatt (MW) alternating current (AC) solar photovoltaic (PV) power generating facility on approximately 2,400 acres of federal land managed by the Bureau of Land Management (BLM) land located in Clark County, Nevada. The Project would include energy storage up to approximately 200 MW. The Project would interconnect from the Project substation via a 230 kilovolt (kV) transmission line (gen-tie) into the planned Gridliance Trout Canyon Substation pursuant to an Interconnection Agreement where the renewable generation would be delivered into the electrical transmission system. The energy storage component of the Project would optimize the delivery of power to the grid.

1.1.2 Schedule for Project

The Applicant would work with BLM, Clark County and other agencies towards the Project Schedule outlined in **Table 1-1**.

Table 1-1
GENERAL PROJECT SCHEDULE
ROUGH HAT CLARK COUNTY SOLAR PROJECT

Task	Date
SF 299 Application	October 2019
Notice of Intent (NOI)	November 2021
Final EIS / Record of Decision (ROD)	November 2022
Right-of-Way Grant (ROW)	February 2023
Construction Start	March 2023
Commercial Operation	September 2024

1.2 Proponent's Purpose and Need for the Project

The purpose of the Project is to provide a clean, renewable source of solar electricity to help meet the region's growing demand for power and fulfill national and state renewable energy and greenhouse gas emission goals. This Project could serve electricity users in Nevada and/or California. Nevada has recently updated its Renewable Portfolio Standard (RPS) to require that 25 percent of all electricity generated in Nevada be derived from renewable sources by 2025 and 50 percent by 2030.

Also, the State of California has updated its RPS to a requirement for California's electric utilities to have 50 percent of their retail sales provided by renewable energy resources by 2030. In September 2018, Senate Bill (SB) 100 further increased the overall RPS requirement from 50 percent to 60 percent by 2030. This legislation also adopted a goal of 100 percent from renewable energy and zero-carbon resources by 2045.

1.3 General Facility Description, Design and Operation

1.3.1 Project Location, Land Ownership and Jurisdiction

The Project site would be on up to approximately 2,400 acres of federal land managed by BLM located in the Pahrump Valley in Clark County, Nevada. The Project is located approximately 38 miles west of Las Vegas and southeast of the Town of Pahrump and is bordered on northeast by Nevada State Route 160 (SR-160), also known as Blue Diamond Road. The Project would interconnect at the planned Trout Canyon Substation at the intersection of SR-160 and Tecopa Road approximately 1.5 miles southeast of the site. All Project facilities would be located on lands administered by the BLM. See maps in Section 6.

1.3.2 Legal Land Description of Facility

The Project is to be located on the BLM-managed lands described using the US Public Land Survey System listed in **Table 1-2**. A land surveyor would prepare a detailed legal description of the rights-of-way (ROWs) prior to issuance of the ROW grants.

Table 1-2: ROUGH HAT CLARK PROJECT LAND DESCRIPTION

Township	Range	Sections	Quarter Sections / Lots
Solar Field			
21 South	55 East	Section 18	SW¼SE¼, SE¼SW¼, Lots 3 and 4
		Section 19	SE¼, NE¼, E ½ NW¼, E ½ SW¼, Lots 1, 2, 3, and 4
		Section 20	SW¼, SE¼SE¼, NW¼SE¼, SW¼SE¼, SW¼NW¼
		Section 27	SW¼SW¼
		Section 28	SW¼, SE¼, SW¼NE¼, SE¼NW¼, NW¼NW¼, SW¼NW¼
		Section 29	All
		Section 30	All
Gen-Tie Line			
21 South	55 East	Section 34	NE¼NW¼, NE¼SE¼, SE¼NE¼, NW¼NE¼, SW¼NE¼, NW¼NW¼
		Section 35	NW¼SW¼, SW¼SW¼
22 South	55 East	Section 2	SW¼NW¼, Lot 4
Based on Mount Diablo Meridian			

1.3.3 Facilities Summary

The Project would be a solar PV power generating facility. PV modules convert sunlight into direct current (DC) electricity that would be collected and converted to AC electricity though a system of inverters. Medium voltage transformers would step up the AC electricity to 34.5 kV and the energy would be delivered to the onsite substation. There the electricity would be stepped up with high voltage transformer(s) to 230 kV and then delivered to the Trout Canyon Substation (the Point of Interconnection (POI)) via a new 230 kV generation tie line (gen-tie). The physical specifications of the proposed Rough Hat Clark County Solar Project are outlined in **Table 1-3**.

Table 1-3 ROUGH HAT CLARK COUNTY SOLAR PROJECT Project Characteristics	
Solar Project	
Power Output Capacity	Up to 400 MWs
Solar Field Footprint	Up to 2,400 acres
Technology	Photovoltaic (PV) panels arranged in arrays
Panel Mounting	Single-axis trackers or fixed-tilt
Energy Collection System	DC collection lines, inverters/transformers, AC collection lines
Battery Energy Storage System	Up to 200 MWs
Project Substation	Up to 5 acres
O&M Building / Area	Up to 5 acres
Gen-Tie Line	
Line length	Approximately 1.5 miles all on BLM-managed land
Circuit configuration	Single or double circuit 230kV (three phases per circuit)
Voltage	230,000 volts
Type of Structure	Steel poles
Typical structure height	80 to 120 feet
Typical span lengths	600 to 1,000 feet
Right-of-way width	150 feet
Tensioning/Pulling Sites	Temporary ROW of 100x400 feet
Access roads	12 foot wide access road located within ROW
Pole foundation depth/diameter	15 to 50 feet / 6 to 12 feet

1.3.4 Power Plant Facilities Components

The selected Engineering, Procurement and Construction (EPC) contractor would prepare final design based on most appropriate technology available and final mitigation requirements incorporated into the ROD. Manufacturer, size, quantities and dimensions would vary somewhat based on vendors / technologies selected. The initial conceptual design layout shown in Section 6 could change somewhat but all facilities would be within the ROW boundaries as described in this POD.

Major components of the solar generating facility include the following:

- Solar arrays consisting of solar PV modules on fixed-tilt or single-axis horizontal tracker mounting systems attached to steel posts or other foundations. DC collection lines from each module to PCS. Each solar array would connect to Power Conversion Stations (PCS) which includes inverter(s) that convert DC power to AC power, medium voltage transformer(s) that step up the voltage to 34.5 kV, and other controls/data equipment. The Project could have arrays of 2 MW AC or more.
- Aboveground and/or underground 34.5 kV collection system from each PCS to the on-site substation.
- One onsite substation with one or more 34.5 kV to 230 kV high voltage transformers.
- Energy storage system and associated equipment.

- Operations and maintenance (O&M) area / building.
- Communications facilities
- Two or more permanent meteorological stations
- Site security and fencing

Ancillary components of the solar generating facility would include the following:

- 1.5 mile single or double circuit 230 kV gen-tie, which could share poles with the proposed Rough Hat Nye Solar Project's gen-tie line
- Interconnection facilities at the Trout Canyon Substation
- Access driveway(s) from SR 160, perimeter road and PCS access

Temporary construction components are described in Section 1.3.5. Construction of facilities would be conducted as described in Section 2 and operations and maintenance activities are described in Section 4.

1.3.5 Temporary Construction Workspace, Yards, Staging Areas

Temporary facilities would include areas for construction trailers and parking; storage areas for equipment, materials, recycling, and waste; laydown and assembly areas; pulling/tensioning areas along the gen-tie; water storage tank(s), septic system, generators/power service, and communications used during the construction phase. These areas would be located within the solar facility fence except for those areas associated with the gen-tie line, which would be located within or adjacent to the gen-tie portion of the ROW and interconnection facilities, as Gridliance may have separate construction areas.

1.3.6 Studies and Data Needs

Geotechnical investigations would be conducted to support the design of the solar facilities and gen-tie line. The description and testing locations for the geotechnical studies would be provided to BLM under separate application.

Temporary meteorological stations could be installed for 18 months prior to construction to gather solar insolation and weather data. Two fenced areas would be installed to secure the meteorological equipment and connected with above-ground conduit. These would be removed before start of construction and would not be the permanent metrological stations.

A water well could be drilled on site under separate application. If included, it would be installed and tested prior to construction.

1.3.7 Ancillary Facilities

1.3.7.1 Access

The Project would construct primary access points from SR 160 directly onto the Project ROW. These short driveways would be 20 to 35 feet wide with a paved or as required. Exact location and design of the driveway is subject to Nevada Department of Transportation (NDOT) approval.

The Project would have internal roads that would be 12 to 20 feet wide with compacted soil surface. Gravel could be installed as needed.

1.3.7.2 Operations Building Area

An operations area would be constructed near the entrance. This area would cover up to 5 acres and include an operations and maintenance (O&M) building, water storage, septic system, materials storage and parking. The conceptual O&M Area is shown on the conceptual site plan.

1.3.7.3 Battery Energy Storage System

The Project would include a battery energy storage system that would have a capacity of approximately 120 MWs. It would be either an AC-coupled or DC-coupled system as dictated by Applicant or customer preference. The AC-coupled system would occupy approximately 40 acres next to the site substation and would include equipment enclosures and/or buildings. If a DC-coupled system is used, battery units would be stored in containers adjacent to the PCSs in each solar array.

1.3.7.4 Communications

Communication service to the Project would be provided by local service providers and/or microwave tower. The Project would have onsite communication lines connecting the Project components. There would also be a fiber optic line included on the gen-tie line between the onsite substation and the interconnecting substation (Trout Canyon). Redundancy in the communication system would be provided as required by the Interconnection Agreement and/or power purchase agreement (PPA). Communications lines could be aboveground or underground.

1.3.7.5 Permanent Meteorological Stations

Two or more permanent meteorological stations would be installed on posts approximately 15 feet high within the Project site and would remain during Project operations. The quantity of met towers would be determined by requirements in the Interconnection Agreement and/or PPA.

1.3.8 Water Usage, Amounts, Sources

Water is not required for PV generation. The Project would require water during construction primarily for dust control as well as some minor consumptive use for concrete and other needs. Water consumption during operation would be relatively low and primarily for potable uses by site personnel and periodic washing of panels. Construction water needs are estimated to be up to approximately 800 acre-feet (AF). Estimated operational water requirements would be up to 16 acre-feet per year (AFY).

Water would be provided by either developing a well on-site or delivering water from a local provider to the site via truck or pipeline. If a water well is developed, it would be installed per State of Nevada requirements by a licensed well driller. Water lines and pumps could be installed to deliver water from on-site water tanks to construction trailers and the operations building. Water treatment may be needed depending on water quality. Drinking water may be delivered to the site during construction and operations.

1.3.9 Erosion Control and Stormwater Drainage

A detailed hydrology study and erosion control plan would be prepared prior to construction as part of final design. The Project could include permanent or temporary drainage improvements to manage site flows. As mentioned above, water would be applied for dust control and BLM-approved palliatives could also be applied where needed. Project-specific Best Management Practices (BMPs) would be provided in the erosion control and hydrology/drainage plans.

1.3.10 Vegetation Treatment and Weed Management

Vegetation would be removed only where needed in the solar array for localized ground contouring and for construction and maintenance of access roads, buildings, equipment enclosures, the site substation, met stations, stormwater improvements and where it could interfere with facility operations or safety. In other areas, vegetation would be trimmed or mowed as needed for construction safety and allowed to re-grow to a height that would not interfere with facility operations or create a fire risk. Vegetation and weed management plans would be prepared for BLM review and approval prior to the start of construction.

1.3.11 Waste and Hazardous Materials Management

Recycled materials and waste would be collected and transported to appropriate facilities. Construction trailers and the operations building would either utilize portable toilets or have an onsite septic system designed per County standards. Portable toilets and washing stations would be serviced by a contracted company.

A Hazardous Materials Management Plan for the limited hazardous materials expected to be used onsite would be prepared and provided to BLM for review and approval prior to the start of construction. Construction vehicles and generators would contain fuel and an onsite above ground fuel storage tank could be used. The design of the energy storage system would include materials management and containment system. Additional battery backups may be installed for critical components throughout the facility. Disposal of modules and batteries would be conducted to comply with applicable laws.

1.3.12 Fire Protection

Electrical equipment including inverters, transformers, and battery energy storage equipment would be housed in appropriately rated National Electric Manufacturers Association (NEMA) enclosures. Vegetation around buildings and equipment would be maintained to minimize fire risk. Water storage would be located in the O&M Area near the main entrance for fire and domestic use. A Fire Protection Plan would be provided to BLM for review and approval prior to the start of construction.

1.3.13 Site Security and Fencing

Site security would include fencing and possibly motion sensor lighting, onsite security guards, cameras and other technology during construction and operations. An approximately 3x4 foot sign would be installed directly to the fence at the site entrance with project contact information. Smaller signs, approximately 1x1 foot, would be attached periodically to the security fence with text warning of the high-voltage equipment contained within the site.

The Project perimeter fencing would be about 7 feet tall and may be chain-link or other design possibly with barbed wire on top. It could include tortoise exclusion fencing during construction and/or operations subject to BLM approval. The site substation would have additional fencing. Fencing would be grounded per industry standards.

Temporary construction fencing could be installed around the site and the construction logistics/storage facilities and/or around construction areas.

1.3.14 Electrical Components

The Project would include the following electrical components manufactured and installed per industry standards:

- PV modules
- DC collection system
- Inverters and medium voltage transformers
- AC collection system
- Energy storage system (AC or DC coupled)
- One or more 230 kV high voltage transformer(s) within the substation
- Circuit breakers and associated protection equipment
- Two or more meters
- Supervisory Control and Data Acquisition (SCADA) control system
- Gen-tie line
- Auxiliary Power Service
- Emergency generator
- Backup battery systems on components

Network upgrades to the existing regional transmission system will be implemented per the interconnection study results.

1.3.15 Interconnection to Electrical Grid

The Project proposes to interconnect into the planned Gridliance Trout Canyon Substation at the intersection of SR 160 and Tecopa Road. The Project would include a 230-kV on-site substation and a single or double circuit 230 kV gen-tie line to the Point of Interconnection (POI) at the Trout Canyon Sub. The gen-tie would also include overhead and/or underground fiber optic communication lines as required by the Interconnection Agreement and/or PPA. The gen-tie would include an access road within the ROW for construction and maintenance. This access road would originate within the solar array ROW and follow directly underneath the gen-tie line. The road would be approximately 12 feet wide and composed of compacted native soil. The gen-tie line may share poles and the on-site substation with the proposed Rough Hat Nye Solar Project's gen-tie line.

1.3.16 Spill Prevention and Containment

The site substation would include a containment system designed for the high voltage transformer fluids. The fueling area for construction equipment and emergency generators would also include spill containment and prevention measures. A detailed Spill Prevention Plan outlining all these measures for construction and operation of the Project would be developed and provided to BLM for review and approval prior to construction.

1.3.17 Health and Safety Program

A Health and Safety Program (HASP) for the construction and operation of the Project would be provided to BLM for review and approval prior to the start of construction. This plan would include written safety programs and procedures, fire safety program, measures for working in the heat, hearing loss prevention, respiratory protection, heavy equipment procedures, and others. All onsite employees and contractors would be required to comply with the HASP.

1.4 Alternatives Considered by Proponent

Other site options for the solar site and route options for the gen-tie were considered for the Rough Hat Clark County Solar Project. Site options were discussed with BLM and included other federal lands in Clark and Nye Counties in the vicinity of the point of interconnection (Trout Canyon Substation). After

evaluating these sites, the proposed Rough Hat Clark County site was selected as the optimal location in Clark County for the project. Any other potentially viable solar sites or gen-tie routes would be evaluated as part of the NEPA process for this Project.

1.5 Other Federal, State and Local Agency Permit Requirements

Table 1-4 provides a list of other federal, state, and local permits and approvals that could be required for the Rough Hat Clark County Solar project.

Table 1-4
FEDERAL, STATE, AND LOCAL PERMITS / APPROVALS
ROUGH HAT CLARK COUNTY SOLAR PROJECT

Agency	Permit / Approval
Federal	
BLM	ROW Grant under Title V of FLPMA
	EA/EIS to comply with NEPA, NHPA, ESA
US Fish and Wildlife Service (USFWS)	Biological Opinion, Incidental Take Permit under Section 7 of ESA
US Army Corps of Engineers (USACOE)	404 Permit under Section 404 of CWA
National Park Service (NPS)	Consultation on potential impacts to Old Spanish National Historic Trail
Federal Aviation Administration (FAA)	Determination of No Hazard
Advisory Council on Historic Preservation	Consultation under Section 106 of the NHPA
DoD Clearinghouse, Nellis Air Force Base	Consultation for potential conflicts with military uses
State	
Nevada State Historic Preservation Office (SHPO)	Consultation under Section 106 of the NHPA
Nevada Department of Wildlife (NDOW)	Consultation, Take Permit
Nevada Department of Transportation (NDOT)	Occupancy Permit for facilities/activities within SR 160 ROW
Public Utilities Commission (PUC)	Utilities Environmental Protection Act (UEPA) Permit
Nevada Division of Forestry	Cacti and Yucca Salvage Permit
Local	
Clark County Department of Air Quality	Dust Control Permit
Clark County Regional Flood Control District	Drainage study review
Clark County Department of Comprehensive Planning	Special Use Permit
Clark County Building Department	Grading Permit, Building Permit

1.6 Financial and Technical Capability of Proponent

Candela Renewables, LLC (Applicant) is a solar development company established in 2018 by a group of highly experienced solar industry professionals. Candela formed a partnership with Macquarie Capital for development of solar projects in the United States. In January 2021, Maquarie sold its interest in a 3.2 GW pipeline of utility scale solar projects developed by the partnership to Naturgy Energy Group (Naturgy). Candela and Naturgy then formed a partnership for continued development of the pipeline and additional solar projects in the U.S.

Naturgy is a global energy company based in Spain with over 175 years of experience, an approximately $20 billion market capitalization, and serving 18 million customers in over 20 countries. Candela's partnership with Naturgy improves Candela's access to capital and brings the vast energy industry experience and expertise of Naturgy to the partnership.

The Applicant, and its technical and advisory team, is technically and financially capable of completing the Rough Hat Clark County Project as described in the application.

2 Construction of Facilities

2.1 Solar Field Design, Layout, Installation and Construction Processes Including Timetable and Sequence of Construction

Construction is estimated to take approximately 12 to 18 months. The preliminary construction schedule is outlined in **Table 2-1**. Construction on the solar site is expected to start with the installation of the perimeter fencing and the clearance of desert tortoises from the site. Site preparation and the installation of solar equipment is expected to move continuously across the site from one array to the next. Substation and gen-tie construction would occur in parallel with construction of the solar arrays.

The selected Engineering, Procurement and Construction (EPC) contractor would prepare the final design based on technology available and would determine construction methods. The layout, quantities, schedule and techniques may change. The EPC would provide a detailed construction schedule prior to the start of construction.

Table 2-1
PRELIMINARY CONSTRUCTION SCHEDULE

Task	Schedule
[Water Well Drilling]	January 2023
Construction Start	March 2023
Perimeter Fence Installation	March 2023
Desert Tortoise Clearance	March 2023
Site Preparation	April 2023 – May 2024
Post installation	May 2023 – June 2024
Module installation	June 2023 – July 2024
PCS installation	June 2023 – July 2024
Substation installation	May 2023 – Dec 2023
Gen-tie installation	May 2023 – Dec 2023
Operations Building	March 2024 – September 2024
Commercial Operation Date	September 2024

2.2 Phasing

The Project may be phased as commercially necessary to meet contractual requirements.

2.3 Access and Transportation System, Component Delivery, Worker Access

Access to the Rough Hat Clark County Project for component deliveries and worker access would be provided directly from SR 160 located adjacent to the northeastern boundary of the site. Components would be delivered to site and either unloaded at their installation location or at temporary laydown areas. Worker vehicles would be parked in a temporary construction parking area. Onsite vehicles would transport workers to work areas around the site.

2.4 Construction Work Force Numbers, Vehicles, Equipment, Timeframes

The average estimated construction work force would be expected to be up to approximately 400 workers. Construction traffic to the site would include commuting construction workers and the delivery of materials and equipment. Workers would commute daily and could carpool. Materials would be delivered to the site during construction periodically throughout the day via trucks. Once delivered to the site, construction equipment would be used on site for the construction phase and transported off when no longer needed for construction. On-site construction equipment may include tractors, disk/tillers, vibratory rollers, excavators, graders, dump trucks, end loaders, trenching machines, pumps, augers, pile-drivers, forklifts, water trucks, cranes, a variety of truck mounted equipment, and additional support vehicles. Construction would be conducted typically during daylight hours on weekdays. Weekend and nighttime construction activities could be needed.

2.5 Site Preparation

A land surveyor would stake the boundaries of site and the locations of all facilities. Prior to construction, desert tortoise surveys and relocation would be conducted as needed. Temporary or permanent fencing would be installed around the solar site and biologists would locate desert tortoise on the site and relocate them in accordance to a translocation plan developed in coordination with the BLM and US Fish and Wildlife Service. Once the fenced area has been cleared of tortoises, site preparation would be initiated.

2.6 Site Clearing, Grading and Excavation

After the site preparation described above is completed, vegetation would be removed only as needed for construction and maintenance. This is expected to occur for locations of access roads, buildings, equipment enclosures, substation, met stations, firebreaks, where it could interfere with facility operations and for localized ground contouring as necessary within the solar array. In other areas, vegetation would be trimmed or mowed as needed for construction safety. Limited grading would occur for roads, foundations, substation, and stormwater improvements. A detailed grading plan would be provided as part of the final site plan provided to BLM for review and approval prior to NTP. Trenching and excavation for foundations, underground electrical components, drainage improvements, septic system, etc. would be performed using appropriate equipment. The geotechnical investigation data would determine foundation and compaction requirements.

2.7 Solar Equipment Installation

Construction of the solar field would occur by arrays across the solar site. Steel posts would be driven into ground at surveyed locations and per design. Drilling into rock may be required if encountered. Trenching and underground cable installation may occur in parallel. The single-axis tracking or fixed-tilt mounting system would be assembled and secured onto posts. Then PV modules would be installed on the mounting system along with the wiring to connect them. Inspection of each system would occur before terminations are made and commissioning of each array would be performed per specifications at energization.

2.7.1 PCS

Power Conversion Stations (PCS) typically include inverter(s), medium voltage transformer(s), and related equipment. If the energy storage system is designed as a DC-coupled system, a DC energy

storage component would be added at these locations. PCSs are delivered on one or more skids and lifted by crane into position. Equipment would be grounded and inspection of the system would be conducted before terminations are made. Commissioning of each PCS would be performed per specifications at energization. Switchgear may be included in design to collect the energy produced by blocks of arrays.

2.7.2 Collection System Construction

A DC electrical collection system would be installed aboveground or underground in the array areas to deliver the energy generated by the PV panels to the PCSs. Where trenching is required, trenches would be excavated, conductors installed and backfilled with riser structures installed to transition to overhead poles.

An AC electrical collection system would be installed aboveground or underground in the array areas to deliver the energy from the PCSs to the site substation. Collection line poles may be steel or wood and could have multiple circuits on poles with insulating conductors. Aboveground collection lines would be installed similarly to the gen-tie line.

2.7.3 Substation Construction

Construction of the onsite substation would be initiated with grading, installation of grounding grid and underground conduit, backfilling, and compaction. Concrete foundations and containment systems would then be installed followed by electrical structural equipment including lightening protection. High voltage transformer(s), breakers, and other equipment enclosures would be installed on to foundations. Fencing would be installed around the entire substation site. Underground and overhead cabling would be installed and terminated with inspection, testing and commissioning of equipment conducted at energization per the Interconnection Agreement.

2.7.4 Gen-tie Line Construction

To build the gen-tie, construction equipment access would be required at each transmission structure. The Project would develop a new access road or improve an existing road within the gen-tie ROW to get construction equipment to each structure location. The access road would typically be about 12 feet wide and bladed and compacted if needed to ensure stability. The access road would be left in place for inspections but less maintained following construction. Construction vehicles would access the gen-tie service road within the ROW from the solar site on the northwestern end of the gen-tie route.

An approximately 125-foot by 50-foot area would be needed around each structure sites for construction which would be temporarily disturbed and cleared of vegetation only as required for safety and efficiency. Holes would be developed for each transmission structure using a drill or auger rig with drilling and blasting of rock possibly needed. The poles would be direct imbedded or placed on a concrete pier foundation with foundations ranging in size from approximately 6 to 12 feet in diameter and from 15 to 50 feet in depth.

Structures would be staged in designated laydown/stringing areas or delivered and unloaded adjacent to their respective final locations. Poles would be delivered on a flat-bed trailer and lifted into place using a crane. After the structures are erected, the conductors and static wires would be strung between them and attached. Temporary pulling and tensioning sites would be located to pull the conductors and wires into place and these sites would be approximately 100 feet wide by 400 feet long

and located within the ROW except at angle structures where a temporary ROW adjacent to the permanent ROW may be required.

2.8 Gravel, Aggregate, Concrete Needs and Sources

Gravel and aggregate could be used for access roads, parking, foundations, trenches, stormwater protection and erosion control. Solar and electrical equipment could have pre-cast concrete bases or concrete could be delivered to site.

2.9 Construction Power

Construction power would be provided by a local electrical service provider via distribution line or by on-site generators. If a construction power service main is developed, it would remain in place during operations for the O&M building.

2.10 Aviation Lighting

The Project would comply with Federal Aviation Administration (FAA) standards for marking and lighting of structures if needed. The Project is not expected to include any structures (over 200 feet) that would require FAA approval.

2.11 Stabilization, Protection, and Reclamation Practices

The Project would comply with plans for stabilization and protection and apply Best Management Practices (BMPs) throughout construction and operations. During and following construction of onsite and offsite facilities, appropriate water erosion and dust-control measures would be implemented to prevent increased dust and erosion. Dust generated by construction would be controlled and minimized by applying water and, if needed, BLM-approved palliatives could be applied.

Soil stabilization measures outlined in a stormwater management plan (SWPPP) would be used to prevent soil being eroded by stormwater runoff during construction. The Applicant would implement a Site Restoration and Revegetation Plan immediately after construction that would identify all measures to stabilize and revegetate disturbed areas.

After the Project's useful life, the Project would be decommissioned and existing facilities and equipment would be removed. Decommissioning would involve removal of the solar arrays and other facilities with some buried components (such as cabling) potentially remaining in place. Following decommissioning, the solar site would be reclaimed and restored according to applicable regulations at the time. A final decommissioning plan would be prepared in coordination with the BLM and implemented at end of Project. The final plan would address future land use plans, removal of hazardous materials, impacts and mitigation associated with closure activities, schedule of closure activities, equipment to remain on the site, and conformance with applicable regulatory requirements and resource plans.

3 Related Facilities and Systems

3.1 Transmission System Interconnect

3.1.1 Proposed Transmission System

The Project would construct a single or double circuit 230kV transmission line (gen-tie) to the planned Trout Canyon Substation located approximately 1.5 miles southeast of the solar site. Associated communication lines would be installed overhead and/or underground.

3.1.2 Ancillary Facilities and Substations

The interconnection studies conducted for the Project would determine if ancillary transmission facilities and /or improvements to the Trout Canyon Substation or other system facilities would be needed to facilitate interconnection.

3.1.3 Status of Power Purchase Agreements

The Project is actively seeking Power Purchase Agreements (PPAs) for offtake of electricity generated by the solar facility.

3.1.4 Status of Interconnect Agreement

A Large Generator Interconnection Request was submitted to the California Independent System Operator (CAISO) and GridLiance in April 2019. The Project expects to sign a Large Generator Interconnection Agreement in2022.

3.1.5 General Design and Construction Standards

The Project would be designed in accordance with latest federal, state, and local requirements and industry standards, as applicable. Best management practices (BMPs) would be used during construction and operations. The following plans would be prepared prior to the issuance of the ROD for the Project, incorporated into the design features for the Project, and implemented during construction and operation:

- Dust Control Plan
- Erosion and Sediment Control Plan / Stormwater Pollution Prevention Plan (SWPPP)
- Health and Safety Plan
- Fire Management Plan
- Vegetation Management Plan
- Site Restoration and Revegetation Plan
- Integrated Weed Management Plan
- Integrated Pest Management Plan
- Desert Tortoise Translocation Plan
- Bird and Bat Conservation Strategy
- Cultural Resources Unanticipated Discovery Plan
- Traffic Control Plan
- Worker Environmental Awareness Plan (WEAP)
- Hazardous Materials Management Plan
- Decommissioning Plan

3.2 Gas Supply Systems

A natural gas supply system would not be needed for the Project. Fuel for construction and emergency generators would be delivered to the site as needed.

3.3 Other Related Systems

3.3.1 Communications system requirements

The Project would utilize a supervisory control and data acquisition (SCADA) system to manage operations. This would require fiber optic and / or microwave communication systems to collect and control data on the site and communicate with the grid. Microwave would be installed on a tower within the site substation.

During construction, contractors would use temporary wired or wireless communication lines. They also could use the permanent communication systems after they are installed.

4 Operations and Maintenance

4.1.1 Operation and Facility Maintenance Needs

The O&M requirements for a PV solar generation facility includes regular monitoring, periodic inspections, and conducting any needed maintenance and repairs. The Rough Hat Clark County Solar Project is expected to be energized continuously with generation from sunlight, or from energy storage or backfeed from the gen-tie. Remote monitoring of the operations would provide safety and optimization controls plus provide reporting and alerts. Any outages for maintenance would typically be scheduled during the nighttime and local task lighting would be used in the specific area of work.

The O&M building would house the administrative and management activities as well as store parts and materials.

4.1.2 Maintenance Activities

The Project would have routine inspections of components based on maintenance program schedule and as the monitoring schedule indicates. In addition, the Project fences, road, gen-tie and drainage facilities would be inspected after significant weather events. Repairs would be performed by the O&M workforce or contracted specialists as needed.

PV module washing could occur periodically using onsite water or water trucked or piped to the site. Based on the quality of the water, a temporary treatment system could be included.

4.1.3 Operations Workforce and Equipment

The operations workforce is estimated to be up to 10 workers. This workforce would include administrative and management personnel, operators, and security and maintenance personnel. Operation and maintenance would require the use of vehicles and equipment for minor equipment maintenance. Maintenance equipment would include forklifts, manlifts, and potential chemical application equipment for weed abatement. Pick-up trucks and ATVs would be used daily on the site. No heavy equipment would be used during normal plant operation but would be brought in only when needed for repairs or replacements.

5 Environmental Considerations and Other Resources

5.1 General Description of Site Characteristics and Potential Environmental Issues

5.1.1 Special or Sensitive Species and Habitats

The Rough Hat Clark County Solar Project is located within suitable habitat for the federally threatened desert tortoise (*Gopherus agassizii*). Construction and operation of the Project could negatively impact individual desert tortoises. A Biological Assessment (BA) in accordance with Section 7 of the Endangered Species Act (ESA) would be developed in consultation with the U.S. Fish and Wildlife Service (USFWS) to address the potential effects to the desert tortoise. The BA would include mitigation measures designed to minimize impacts to the desert tortoise. The USFWS would issue a Biological Opinion (BO) for the project identifying all required mitigation and conservation measures. A key measure of the assessment and BO for desert tortoise would be a translocation plan that would identify the details of handling and moving tortoises that would be affected.

5.1.2 Special Land Use Designations

There are no special land use designations on the lands that would be directly affected by the Project or in the immediate vicinity. There are no nearby Areas of Critical Environmental Concern (ACECs), wilderness or wilderness study areas, wild and scenic rivers, or Special Recreation Management Areas (SRMAs). There is a designated utility corridor that abuts the western boundary of the solar site.

5.1.3 Visual Resource Management (VRM) Designations

Visual resource management classes are categories assigned to BLM-managed lands that portray the relative value of the visual resources and the associated visual management objectives. One of four VRM classes, (I, II, III, IV) is assigned to an area. VRM Class I areas have the most valuable visual resources and VRM Class IV areas have the least. The VRM classes guide future land management actions and subsequent site-specific implementation decisions.

The lands affected by the Rough Hat Clark solar site and gen-tie are managed as visual resource management (VRM) Class III. Class IV lands are located southwest of the site. The objective for Class III lands is to partially retain the existing character of the landscape with the level of change to be moderate. The primary potential viewers of this Project would be motorists traveling on SR 160 where there are existing transmission lines and other proposed solar projects.

5.1.4 Cultural and Historic Resource Sites and Values

Cultural resources are defined as buildings, sites, structures, or objects that have historical, architectural, archaeological, cultural, and/or scientific importance. Generally, prehistoric sites across the Great Basin and the greater American Southwest exhibit the presence of humans during the late Pleistocene 15,000 years ago. Around 1,500 years ago, the Ancestral Puebloan inhabitants of the greater southwest came into the vicinity.

A cultural resources records search would be conducted through the SHPOs Nevada Cultural Resource Information System (NVCRIS) to identify previous cultural resource projects and archaeological sites within the Project Area. A Class III Cultural Resources Inventory would be completed in consultation with the BLM to identify the cultural resources that occur within the Project's area of potential effect (APE). The resulting information would be utilized by the BLM to determine project-specific measures

necessary to reduce potential impacts to cultural resources. To the extent feasible, significant cultural resources would be avoided and, if they cannot be avoided, appropriate mitigation would be developed.

5.1.5 Native American Tribal Concerns

The BLM would conduct government-to-government consultations with Native American tribes in the region with traditional interests in the area inquiring about potential concerns about the effects of the proposed Project on historic properties or areas of traditional or cultural importance. If Tribal concerns are identified within the Project area, they would be avoided to the extent feasible or mitigation could be implemented as necessary.

5.1.6 Hydrology and Water Quality

There are several ephemeral washes that cross the Project area flowing to the southwest. These drainages appear to terminate in a closed basin. Typically, channels that flow into a closed basin are not jurisdictional by the Corps of Engineers under section 404 of the Clean Water Act. But because the closed basin straddles the State line, these drainages could potentially be jurisdictional.

5.1.7 Vegetation, Invasive Plants / Noxious Weeds

General vegetation in the region consists mainly of Sonora-Mojave Creosote bush-White Bursage Desert Scrub. The creosote-bursage occurs in broad valleys, lower bajadas, plains, and low hills in the Mojave Desert and lower Sonoran Desert. The BLM and the State of Nevada have protections for cactus and yucca species.

The BLM and State also regulate and manage invasive plant species. The BLM would require development and implementation of a Restoration and Revegetation Plan and an Integrated Weed Management Plan to reduce potential impacts from invasive plants and noxious weed species.

5.1.8 Air Quality

Construction and operation of the Project would result in the generation of dust and tailpipe emissions from vehicle traffic. There would be an increase in dust emissions during construction activities that would be mitigated by the application of best management practices outlined within a Fugitive Dust Plan developed to satisfy BLM and Clark County requirements. Disturbed areas would be watered as necessary to suppress dust during construction and operation.

5.1.9 Recreation

There are no Special Recreation Management Areas (SRMAs) located in the vicinity of the proposed Project. Off-highway vehicle (OHV) use in this area is limited to existing roads, trails, and dry washes in this area.

5.1.10 Socioeconomics

Socioeconomic impacts generated from the Project would primarily be positive. The Project would create jobs for the local and regional population during construction and, to a lesser extent, during operation. The project would require little or no additional services from the County.

5.2 Mitigation Measures Proposed by Applicant

As stated earlier, the Applicant would develop and implement many mitigation plans and conservation measures to minimize the environmental impacts from construction and operation of the Project. These

plans are repeated below and would become part of the Final POD for the Project reviewed and approved by the BLM prior to the initiation of construction:

- Dust Control Plan
- Erosion and Sediment Control Plan / Stormwater Pollution Prevention Plan (SWPPP)
- Health and Safety Plan
- Fire Management Plan
- Vegetation Management Plan
- Site Restoration and Revegetation Plan
- Integrated Weed Management Plan
- Integrated Pest Management Plan
- Desert Tortoise Translocation Plan
- Bird and Bat Conservation Strategy
- Cultural Resources Unanticipated Discovery Plan
- Traffic Control Plan
- Worker Environmental Awareness Plan (WEAP)
- Hazardous Materials Management Plan
- Decommissioning Plan

In addition to the plans listed above, the Applicant proposes to implement the following Applicant Proposed Measures (APM):

Table 5-1
APPLICANT PROPOSED MEASURES

APM	Title	Description
Fire-1	Minimize fire risk	The Project will be sited and designed to minimize fire risk including: • Developing and implementing fire management measures that include providing worker training. • Incorporating key elements to mitigate the potential for fire into a WEAP that is provided to all project personnel prior to entering the project work site. The WEAP shall be provided on a regular basis, covering multiple resources, to ensure the awareness of key fire mitigation efforts of the project work site during all phases of the project's life. The information provided in the WEAP shall be reviewed and approved by BLM prior to the issuance of a Notice to Proceed and incorporate adaptive management protocols for addressing changes over the life of the project, should they occur. • Siting and designing the solar facilities to ensure sufficient room for fire management within the ROW and its facilities to minimize the risk of fire moving outside the ROW and the risk of fire threatening the facility from outside.
Geo-1	Soil resources and geologic hazards	The Project will incorporate the following design elements related to geologic hazards: • Designing structures to meet the requirements of all applicable federal, state, and county permits and building codes. • Minimizing ground-disturbing activities. • Preventing channel erosion from project runoff.

		• Controlling culvert outlets with appropriate structures (e.g., rock lining or apron) to reduce soil erosion and scouring. • Considering utilizing originally excavated materials for backfill. • Controlling project vehicle and equipment speeds to reduce dust erosion. • Controlling water runoff and directing it to settling or rapid infiltration basins. • Minimizing land disturbance (including crossings) in natural drainage systems and groundwater recharge zones (i.e., ephemeral washes and dry lake beds). • Locating and constructing drainage crossing structures so as not to decrease channel stability or increase water volume or velocity. • Avoiding areas with unstable slopes and soils. • Reducing construction activity timeframes so that ground disturbing activities take place over as short a timeframe as possible. • Avoiding clearing and disturbing areas outside the construction zone. • Clearly identifying construction zone boundaries on the ground (e.g., through the use of construction fencing) to minimize conflict with other resource concerns.
Geo-2	Permanent stabilization	Permanent stabilization of disturbed areas shall occur during final grading and landscaping of the site and be maintained through the life of the facility.
WR-1	Conduct hydrologic study	Project developers shall conduct hydrologic study (or studies) that demonstrate a clear understanding of the local surface water and groundwater hydrology.
WR-2	Minimize impacts on water resources	The Project will implement the following design elements related to water resources: • Preventing the release of project waste materials into stormwater discharges. • Developing measures to prevent potential groundwater and surface water contamination and incorporating them into the Spill Prevention and Emergency Response Plan as appropriate. • Minimizing land disturbance in ephemeral washes and dry lakebeds. Stormwater facilities shall be designed to route flow through or around the facility using existing washes when feasible, instead of concrete-lined channels. • Backfilling foundations and trenches with originally excavated material. • Disposing of excess excavated material according to state and federal laws. • Avoiding washing equipment or vehicles in streams and wetlands. Using herbicides and pesticides within the framework of BLM and DOI policies and standard operating procedures, to include the use of only EPA-registered pesticides/herbicides that also comply with state and local regulations. • Transporting, storing, managing, and disposing of hazardous materials and vehicle/equipment fuels in accordance with accepted best management practices (BMPs) and in compliance with all applicable regulations, and where applicable, the SWPPP.

Eco-1	Consultation to protect ecological resources	The Project will perform the following consultations for the protection of ecological resources: • Coordination with the BLM and U.S. Fish and Wildlife Service (USFWS) strategies for complying with regulatory requirements of the Bald and Golden Eagle Act. • Coordination with appropriate federal and state agencies (e.g., BLM, USFWS, and state resource management agencies) measures to protect birds. • Consulting with the USACE in relation to hydrological features that have the potential to be subject to USACE jurisdiction. • Considering restrictions on timing and duration of activities developed in coordination with the BLM, USFWS, and other appropriate agencies to minimize impacts from project activities on nesting birds. • Developing measures to ensure protection of raptors in coordination with appropriate federal and state agencies (e.g., BLM, USFWS, and state resource management agencies).
Eco-2	Design elements for the protection of ecological resources	The Project will implement the following design elements related to ecological resources: • Informing project personnel that only qualified biologists are permitted to handle listed species according to specialized protocols approved by the USFWS. • Developing a SWPPP for each project that includes avoids, to the extent practicable, changes in surface water or groundwater quality. • Incorporating key elements on the identification and protection of ecological resources (especially for special status species), including knowledge of required design features, in instructions to all personnel. Incorporate the knowledge into a WEAP that is provided to all project personnel prior to entering the project work site. • Planning for vegetation management that is consistent with applicable regulations and agency policies for the control of noxious weeds and invasive plant species. • Designating a qualified biologist who will be responsible for overseeing compliance with all design features related to the protection of ecological resources throughout all project phases, particularly in areas requiring avoidance or containing sensitive biological resources. • Prohibiting project personnel from bringing firearms and pets to project sites. • Placing food refuse and other garbage in closed containers so it is not available to scavengers. • Using certified weed-free seed and mulching. • Turning off all unnecessary lighting at night to limit attracting wildlife, particularly migratory birds.
Rec-1	Reclamation	Reclamation of the construction and project site shall begin immediately after decommissioning to reduce the likelihood of ecological resource impacts in disturbed areas as quickly as possible. The Project will implement the following design elements related to decommissioning: • Applying design features developed for the construction phase to similar activities during the decommissioning and reclamation phase. • Developing and implementing a Decommissioning and Site Reclamation Plan specific to the project, approved by the

		BLM in consultation with appropriate agencies, that incorporates adaptive management strategies.
Air-1	Design elements for the protection of air quality	The Project will implement the following design elements related to air quality: • Using equipment that meets emission standards specified in the state code of regulations and meets the applicable U.S. EPA (EPA) Tier 3 and Tier 4 emissions requirements where commercially feasible. • Preparing a Dust Abatement Plan for the solar facilities that considers multiple methods for dust suppressant (i.e., water, paving, gravel, and/or regulation-compliant palliatives). • Managing unpaved roads, disturbed areas (e.g., areas of scraping, excavation, backfilling, grading, and compacting), and loose materials generated during project activities as frequently as necessary to effectively minimize fugitive dust generation. • Limiting travel to stabilized roads. • Enforcing posted speed limits (e.g., 10 mph [16 km/hour]) within the construction site to minimize airborne fugitive dust. • Suspending soil disturbance activities and travel on unpaved roads during periods of high winds. Site-specific wind speed thresholds shall be determined on the basis of soil properties determined during site characterization. • Limiting the idling time of equipment to no more than 5 minutes, unless idling must be maintained for proper operation (e.g., drilling, hoisting, and trenching). •
Vis-1	Minimize night-sky effects	Solar facilities shall be sited and designed to minimize night-sky effects.
Noise-1	Minimize noise impacts	The Project will implement the following design elements related to noise: • Implementing a noise complaint process and hotline, including documentation, investigation, evaluation, and resolution of legitimate project-related noise complaints. • Planning noisy construction activities near sensitive receptors to the least noise-sensitive times of day (i.e., daytime between 7 a.m. and 7 p.m.) and weekdays. • Considering siting immobile construction equipment (e.g., compressors and generators) away from nearby residences and other sensitive receptors.
Paleo-1	WEAP training	The Project shall Incorporate key elements to mitigate the impacts on paleontological resources into a WEAP that is provided to all project personnel prior to entering the project work site.
Cultural-1	WEAP training	The Project shall Incorporate key elements to mitigate the impacts on cultural resources and resources of importance to federally recognized tribes into a WEAP that is provided to all project personnel prior to entering the project work site.
Transport-1	Implement traffic control measures	The Project shall implement appropriate traffic control measures to reduce hazards for incoming and outgoing traffic and streamline traffic flow, such as speed limit reductions; installing signage; and adding acceleration, deceleration, and turn lanes on routes with site entrances.
Haz-1	Minimize impacts from hazardous wastes	The Project will implement the following design elements related to hazardous wastes: • Identifying expected waste generation streams at the solar energy site and hazardous waste storage locations for

		consideration in the environmental analysis evaluating the proposed project. • Conducting site characterization, construction, operation, and decommissioning activities in compliance with applicable federal and state laws and regulations. • Developing a Hazardous Materials and Waste Management Plan that addresses the selection, transport, storage, and use of all hazardous materials needed for construction, operation, and decommissioning of the facility for local emergency response and public safety authorities and for the designated BLM land manager. • Ensuring vehicles and equipment are in proper working condition to reduce potential for leaks of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials.

6 Maps and Drawings

Attached are several figures that outline the location and proposed layout of the Rough Hat Clark County Solar Project.