Plan of Development

Copper Rays Solar Project

Prepared for:

U.S. Bureau of Land Management

Southern Nevada District Field Office

Las Vegas, Nevada

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SECTION 1

Project Overview and Purpose and Need

1.1 Introduction

1.1.1 Type of Facility, Planned Uses, Generation Output

Copper Rays Solar, LLC, a subsidiary of Leeward Renewable Energy (Leeward) proposes to construct, own, and operate the Copper Rays Solar Project (Project), consisting of up to a nominal 700- megawatt (MW) alternating current (AC) solar photovoltaic (PV) power generating facility with battery storage on approximately 5,050 acres (inclusive of the approximately 4,900-acre project site and the approximately 150-acre gen-tie line) of Bureau of Land Management (BLM) administered land located in Nye County, Nevada (**Figure 1-1**).

The Project consists of two phases, referred to as Copper Rays 1 (200MW) and Copper Rays 2 (500MW). The power produced by the Project would be conveyed to GridLiance West's (GLW) bulk transmission system via a generation-tie transmission line (gen-tie line), which would interconnect to GLW's Gamebird Substation located northwest of the Project site and southeast of Pahrump, Nevada. The interconnection will allow all California Independent System Operator (CAISO) participants to purchase renewable energy generated by the Project under a long-term Power Purchase Agreement (PPA) to deliver energy from a (nominal) 700MW size generating facility.

This Plan of Development (POD) is being submitted to the BLM's Renewable Energy Coordination Office that is part of the Southern Nevada District Field Office (SNDO) in connection with an SF 299 right-of- way (ROW) application for the development of a commercial solar PV generating station, with a combined generation output rating of approximately 700MW. This POD describes the design, location, and proposed permitting and construction schedule for the Project. It has been prepared in accordance with the December 19, 2012 Solar Energy Plan of Development Outline issued by the BLM (BLM 2012a).

The Project will be constructed using photovoltaic modules mounted on horizontal tracker structures supported by steel posts driven into the ground. Steel table frames (tabletops) are bolted to the tracker structures and PV modules are mechanically fastened to the tables. The tracking units are arranged into north to south-oriented rows and are powered by a drive motor to track the east-west path of the sun on a single axis throughout the day. In the event that the results of detailed geotechnical investigations indicate driven steel posts are not an optimal foundation, other embedded foundation designs including concrete footings may be utilized.

Concrete foundations will be required for other Project components, including power conversion stations (PCS) (which house the inverters), PV combining switchgear (PVCS) and transformers, weather stations, and substation equipment.

1.1.2 Applicant's Schedule for the Project

Construction of the Project, from site preparation and grading to commercial operation, is expected to be undertaken in two phases. The first phase is proposed to begin in the 2nd quarter of 2024. Copper Rays 1 would consist of 200 MW in the northern-most portion of the Project site and is currently being marketed to off-take customers. Copper Rays 2 would consist of 500 MW south of Copper Rays 1 and is currently advancing its interconnection rights for off-take.

Figure 1-2A depicts a preliminary site plan with proposed Project phases identified. Copper Rays intends to build the entire project in a most efficient manner for all resources and follow market signals to deliver power to the grid.

Construction of phase one will take approximately 21 months, and construction of phase two will take approximately 33 months. A project schedule is provided in **Table 1-1**. Construction will include the major phases of mobilization, construction grading and site preparation, installation of drainage and erosion controls, PV panel/tracker assembly, and solar field construction. Project development will include both permitting and construction, as shown in **Table 1-1**. The sequencing of construction activities is described as part of the construction description sections that follow.

TABLE 1-1

Project Schedule Overview

Activity	Duration	Estimated Completion Dates
Updated POD	N/A	September 2022
Notice of Intent	N/A	October 2022
Prepare required Environmental Impact Statement (EIS)	15 months	December 2023
Approval of NEPA CatEx and POD for Met Station	N/A	April 2023
Desert Tortoise Health Assessments	4 months	May 2023
MET Station Construction	1 month	May 2023
Nye County Special Use Permit (SUP) Approval	N/A	October 2023
USFWS Issuance of Biological Opinion	N/A	October 2023
Record of Decision (ROD) and ROW Grant Issuance	N/A	December 2023
LNTP for Geotech Investigation	N/A	December 2023
Other Permits and Approvals	9 months	December 2023
Geotech Investigation	1 month	January 2024
Notice to Proceed (NTP) for Construction	N/A	January 2024
Nye County Building Permit Approval	N/A	January 2024
Other Permits and Approvals	9 months	December 2023
Desert Tortoise Translocation	3 months	April 2024

Phase 1 - Project Construction	21 months	December 2025
Phase 2 – Project Construction	33 months	December 2029

1.2 Proponent's Purpose and Need for the Project

The fundamental purpose of the Copper Rays Solar Project is to construct a clean, renewable source of solar electricity that helps meet the region's growing demand for power and helps fulfill national and state renewable energy and greenhouse gas emission goals[1]. Solar energy provides a sustainable, renewable source of power that helps reduce fossil fuel dependence and greenhouse gas emissions. Considering the entire process, from raw material sourcing through end-of-life-cycle collection and recycling, the Project's combined 700MW of additional generating capacity will produce a small fraction of the greenhouse gas emissions of a similar capacity fossil fuel plant. Solar power is also now one of the most cost-effective sources of electricity. Specific Project objectives are:

- Establish a solar PV power-generating facility that is of sufficient size and configuration to produce at least 700MW of electricity, thus assisting the States of Nevada and California in achieving their RPS by providing a significant new source of renewable energy[2].
- Produce and transmit electricity at a competitive cost compared to any other form of power.
- Create family-wage jobs for Southern Nevada. The Project is anticipated to create an average of 700-1000 construction jobs for 1-2 years, and up to 10 long-term full-time-equivalent operational jobs.
- Generate direct and indirect economic benefits within Nye and Clark Counties as well as the State of Nevada, including increased personal and business income, tax revenues (sales, property, and other taxes), and economic output.
- Locate the facility in Nye County because of its proximity to an available connection to the existing electrical distribution infrastructure, thereby minimizing other new construction.
- Minimize environmental effects by:
    - Using existing electrical distribution facilities, rights-of-way, roads and other existing infrastructure where practicable;

[1] Federal legislation has supported the development of renewable energy since the Energy Policy Act of 2005 (P.L. 109-58). The Energy Act of 2020 states a goal of 25 GW of renewable energy on public land by 2025. The Biden Administration has increased that goal to 30 GW by 2030.

[2] California's Renewable Portfolio Standard has increased its goals every year since its inception in 2002. SB 100 (2018) requires 60% renewable energy by 2030, with a goal of 100% a few years later. Nevada's Renewable Portfolio Standard (Nevada Revised Statutes 704.7821), as revised by Senate Bill 358 in 2019, requires specific renewable energy percentages that increase to 100% in 2050.

- Minimizing water use during construction and operation; and
- Reducing greenhouse gas emissions compared to other energy sources.

- Use solar technology that is available, proven, efficient, and easily maintained, recyclable, and environmentally sound.

1.2.1 Power Market and Project Benefits

The Project will interconnect to GLW's transmission system via an approximately 5-mile gen-tie to the Gamebird Substation, located northwest of the Project site and southeast of Pahrump, Nevada. The electrical output from the Project will be sold to one or more utility companies to support their compliance with Nevada's or California's renewable portfolio standard or other green energy initiatives. The interconnection will allow all CAISO participants to purchase renewable energy generated by the Project under a long-term Power Purchase Agreement (PPA) to deliver energy from a (nominal) 700 MW size generating facility.

The Project is well suited to arid environments because of the technology's low water consumption. This is a key consideration in Southern Nevada and the Western U.S., due to on-going regional population growth, and the increasingly constrained water supplies needed to sustain that growth. PV solar technology, which converts sunlight directly into electrical energy, entails no thermal process, and therefore does not require process or cooling water to produce electricity. Water consumption during construction will be used for dust control, construction activities, and be executed in accordance with regulatory requirements. Water consumption during operations will be used exclusively for on-site personnel (e.g., potable drinking water, toilets, etc.). In rare instances, panel washing may be conducted.

The Project will also create family-wage jobs for Southern Nevada. The Southern Nevada economy has been adversely affected by the turndown in the economy and, in particular, by the loss of construction jobs. The Project is anticipated to create an average of 1000 construction jobs with a peak not anticipated to exceed 1000 jobs at any given time and create up to 10 long-term full- time-equivalent (FTE) operational jobs. These jobs will in turn support many other jobs in the Southern Nevada economy.

SECTION 2

Right-of-Way Location

2.1 Project Location, Land Ownership, and Jurisdiction

The Project site is comprised of approximately 5,050 acres of public lands administered by the BLM in an unincorporated area of Nye County, Nevada. The Project would be located immediately southwest of State Route 160 (SR-160) and approximately 8 miles southeast of the town of Pahrump, Nevada (**Figure 1-1)**. The proposed right-of-way acres for the Project are detailed in **Table 2-1**.

TABLE 2-1

Project Right-of-Way Areas

Facility	Approximate Right-of-Way (ROW) Acres
Project Site	4,900
Gen-Tie Facility	150
Acres to Gen-Tie Facility from SR-160 (outside 300 ft. gen-tie ROW area)	1.5
Driveway/Site Entrance (from SR-160)	0.6

2.1.1 Legal Land Description

The Project site is located in T21S, R54E and T22S, R54E, excluding the generation-tie line. The township/range and section information for the primary components of the Project is shown in **Table 2-2**. Township/range and section information relative to components of the Project is also depicted on **Figure 1-2B**. A complete legal description can be found in **Appendix A**.

TABLE 2-2

Township/Range and Section Information

Facility	Township/Range	Section
Project Boundary	21S/54E	14, 13, 23, 24, 26, 25, 35, 36
	22S/54E	1, 2
Solar Field and Ancillary Facilities	21S/54E	23, 24, 25, 26, 35, 36
	22S/54E	1, 2
Temporary Staging Area, O&M Area and Onsite Substation	21S/54E	2, 13, 14, 23, 24, 26
Project Access Road	21S/55E	18

Generation-Tie Line to GLW's Gamebird Substation[3]	20S/54E	35
	21S/54E	1, 2, 12, 13
Alternative Gen-Tie Line to GLW[4]	20S/54E	35, 36
Gamebird Substation	21S/54E	1, 2, 12, 13

[3] The Gen-Tie Line will also use private lands in Section 2, Township 21 South, Range 54 East and Section 34, Range 20 South, Range 54 East.

[4] The Alternative Gen-Tie Line will also use private lands in Section 2, Township 21 South, Range 54 East and Section 34, Range 20 South, Range 54 East.

SECTION 3

Project Facilities and Design

3.1 Power Plant Facilities, Photovoltaic Conversion Process

3.1.1 Power Plant Facilities

The Project will include the following main elements:

- PV solar array field and associated interior access ways and perimeter road.
- Single-axis, horizontal tracker systems (including tilt brackets and tabletops) supported by driven steel posts or other embedded foundation design.
- PV solar modules. Commercially available panels that could be either monofacial or bifacial:
    - The height of the installed solar modules at top of panel at max angle is expected to be 12 feet.
    - The height of the installed solar modules when parallel to the ground would be 8 feet.
    - The distance from ground surface to bottom of panels would be 16 inches.
- Direct current (DC) collection system comprised of underground DC cabling and combiner boxes.
- Meteorological stations.
- Power conversion stations (PCSs), which include the DC to alternating current (AC) inverters and the medium voltage transformers which steps up the voltage to 34.5 kilovolts (kV). The PCS will also include emergency backup power for the tracker system in the event of high winds and loss of grid power.
- An underground and/or overhead 34.5kV collection system to convey electricity from the solar field to the onsite substation.
- A fully fenced substation with 34.5kV to 230kV step-up transformers, breakers, buswork, protective relaying and associated substation equipment. The onsite substation also may include a microwave tower, a control house, mechanical electrical equipment room(s) and one or more transformers.
- Energy storage system (ESS) consist of commercially-available self-contained battery storage modules placed in racks, converters, switchboards, inverters, transformers, controls, and integrated heating, ventilation, and air conditioning (HVAC) units, all enclosed in one or more buildings or in prefabricated metal containers. Lithiom-ion batteries would be used. An onsite connection to the Gamebird Substation via an approximate 5-mile gen-tie line.

- The Project includes an approximately 4.7-acre operation and maintenance (O&M) area that will accommodate as necessary an O&M building, parking area, and other associated facilities such as above ground water storage tanks, septic system, security gate, signage, and flagpoles.
- The Project may transport water by either truck or pipeline to provide construction water, fire protection water, and other operational water supply requirements. Pipeline locations, if utilized, would be located within the ROW application area and exact locations to be determined with further analysis.
- A fire break will be established around the O&M Building in compliance with Applicable County standards.
- Primary access road to the project site located along SR-160 at the intersection of Trout Canyon Road. The primary access will be a graveled access road.
- Site security facilities including perimeter security fencing-controlled access gates, and signage. Perimeter security fencing will be seven (7) feet in height (inclusive of 6 feet of fencing, with 1-feet of barbed-wire at the top).
- Temporary construction fencing around the perimeter of the project site would be 6 feet in height.
- Perimeter desert tortoise exclusion fencing, as determined necessary.
- Fiber optic cable installation for communications to the Project will be installed underground or on overhead lines along the transmission line corridor between the onsite substation and the point of interconnection with GLW systems.

Construction of the Project will require the following temporary facilities to be located within the permanent ROW application area. These temporary facilities will be removed at the end of the construction period in accordance with the Site Restoration Plan. **Table 3-1** provides details regarding discreet project elements.

TABLE 3-1

Project Element Details

Description	Area (acres)	Length (mile)	Qty. (each)
Project Site (does not include gen-tie ROW)	4,900		
Phase 1	1,600		
Phase 2	3,900		
Phase 1			
Gen-Tie ROW (Preferred)	150		
Gen-Tie ROW (Alternative)	170		
Gen-Tie Access from SR 160 (Outside 300 ft. ROW)	1.5		
Gen-Tie Access from SR 160 (Outside 300 ft. ROW)	0.8		
Driveway/Site Entrance	0.6		

O&M	4.7		
Project Substation	27.6		
Temporary Construction Move-On Area	14.7		
Battery Energy Storage System (BESS)	35		
Gen-Tie Line (Preferred)	-	5	-
Gen-Tie Poles (Preferred)	-	-	32
Gen-Tie Spur Road (Preferred) (Within 300 ft. ROW)	4	-	-
Gen-Tie Line (Alternative)	-	5.3	
Gen-Tie Poles (Alternative)	-	-	35
Gen-Tie Spur Road (Alternative) (Within 300 ft. ROW)	7.3	-	-
Telecommunication Line (Fiber Optic) (Preferred)	-	5	-
Telecommunication Line (Fiber Optic) (Alternative)	-	5.3	-
Temporary Gen-Tie Work Areas (Preferred) (Outside 300 ft. ROW)	6.6	-	-
Temporary Gen-Tie Work Areas (Alternative) (Outside 300 ft. ROW)	-7.3	5	-
Solar Panel Array Blocks	800	-	-
Internal Access Roads	20.4	8.4	-
Temporary Water Storage Areas	1.5	-	-
Temporary Laydown Area	9.2	-	-
PCS	0.6	-	50
MV Collection Line (Overhead) (Option 1)	-	1	-
MV Collection Poles (Option 1)	-	-	68
MV Collection Line Trench (Option 2)	3.4	1	-
Other Non-Development Area	517		
Phase 2			
Solar Panel Array Blocks	2,125	-	-
Internal Access Roads	38.9		
Temporary Water Storage Areas	1.5	-	-
Temporary Laydown Area	26.7	-	-
PCS	1.6	-	136
MV Collection Line (Overhead) (Option 1)	-	6.7	-
MV Collection Poles (Option 1)	-	-	473
MV Collection Line Trench (Option 2)	-	6.7	-
Other Non-Development Area	544.5		

Table 3-2 provides the dimensions for the O&M Building and other related facilities located within the O&M Building Area. **Table 3-3** (below) provides the dimensions for the BESS, PCS, and PV Module facilities.

TABLE 3-2

Operations & Maintenance Area Facilities

Item	Dimensions (ft.)
O&M Building (office)	30’ x 67’ x 12’
O&M Building (storage)	170’ x 100’ x 20’
Water Tank	Per Fire Code
Septic Field	60’ x 60’
Trash Receptacle	10’ x 15’
Parking	170’ x 340’

TABLE 3-3

BESS, PCS, and PV Module Dimensions

Item	Dimensions (ft.)
BESS	12’ x 60’ x 9’
PCS	12’ x 45’ x 12’
PV Module	4.08’ x 6.64’

- Temporary construction mobilization and laydown area(s). These will contain temporary construction trailers, construction workforce parking, above ground water tanks, materials receiving and materials storage. See Section 4.14. Decommissioning regarding how these facilities would be removed. Additionally, a Decommissioning Plan will be prepared and made available for the Project (as an appendix to this Plan of Development) in a future Plan of Development update, prior to construction.
- Temporary construction utilities that may include temporary power connection to the VEA distribution system adjacent to the Project, temporary power generator, and temporary above- ground water line.

The following sections describe the Project site arrangement and the processes, systems, and equipment that constitute the power plant.

3.1.1.1 Energy Conversion Equipment

As a solar PV facility, the Project relies on sunlight as its sole source of fuel. All of the electricity generated by the Project will be generated through the conversion of solar energy to electricity by the PV modules. The Project will not consume fossil fuels of any type for power generation.

The design calls for PV modules, inverters, and transformers to be combined into arrays that are repeated to reach the full contract capacity. The inverter and transformer sizes will be selected based on the cost and market availability of these units.

During operational daylight hours, the Project will generate its own power for equipment operation. During non-daylight hours, the Project will require power to keep transformers energized, maintain communications to Project equipment, and provide power for heating, ventilation, and air conditioning and lighting to the O&M building. The Project will enter into a retail service agreement with the local retail power provider to purchase power during non-daylight hours.

3.1.2 Numbers and Dimensions of Solar Array and Other Equipment

The Project will be constructed using photovoltaic modules mounted on single-axis, horizontal tracker systems. The design layout calls for PV modules, inverters, and transformers to be combined into arrays that are repeated to reach the full contract capacity (See **Figure 1-2A**). The primary Project components include solar arrays, transmission lines, onsite substation, site entrance, and O&M facilities. Power from multiple rows of PV modules will be collected through a system of combiner boxes to a PCS, inverters for conversion of power from DC to AC, transformers, and collection lines and delivered to the Project substation.

3.1.2.1 Horizontal Trackers

PV modules on horizontal trackers are mounted horizontally and are not tilted to the south. A typical array layout using horizontal trackers is shown below. The tracker units are arranged in north-south oriented rows and drive motors rotate the solar panels from east to west to follow the sun (on a single axis) throughout the day.

The vertical support legs for the trackers consist of foundations that may include: (1) concrete piers or (2) driven posts. The preferred mounting configuration utilizes directly embedded driven posts and concrete piers will only be utilized if subsurface conditions do not support driven posts. Each tracker unit has motors and actuator mounted to one of the driven posts and do not require separate foundations for mounting. Hydraulic drive systems will not be used.

Typical Tracker Array Configuration and Mounting Systems

The motors are only operated for a few seconds every 5-10 minutes during daylight conditions to move the panels in approximately 1-degree increments. The sound from the tracker motors is less than 70 decibels.

Meteorological stations located at the site will monitor wind speed and communicate with the tracker units. This allows for the trackers to rotate to a flat position during high wind activity. The meteorological station towers will be located at multiple locations around the perimeter of the solar array. Meteorological station towers will be monopole or lattice design.

Each PCS Shelter is equipped with communication equipment to wirelessly communicate with the tracker units to control operation and detect anomalous conditions. The PCS Shelter is also equipped with emergency backup power required to rotate the tracker units to their stow position in the unlikely event of high winds and a loss of the primary electrical connection from the Project to GLW's transmission system.

3.1.2.2 Emergency Backup Power

The emergency back-up power requirement would be met by utilizing a small battery-based uninterruptible power supply (UPS) with each PCS shelter. Batteries would be lead acid based and/or lithium ion. Inspections would be performed to ensure ambient temperature requirements are met and visual inspections of all batteries as part of the preventative maintenance program.

3.1.3 Temporary Construction Workspace, Yards, Staging Areas

The Project construction contractor will develop a temporary construction mobilization and laydown area to build the Project. The construction mobilization and laydown area will include the following facilities:

- Mobile trailer construction offices
- Temporary water service and fire water supply holding tanks
- Temporary construction power and water service
- Portable toilets
- Parking for construction worker's vehicles
- Tool sheds/containers
- Laydown area for construction equipment and material delivery

These areas will provide laydown for installation of solar equipment in the immediate vicinity of panel installation. Construction of the 230kV transmission line at the site will require temporary construction areas at each tower location and at locations required for conductor stringing and pulling operations. These areas will be required for staging equipment and materials for foundation construction and tower installation. Other temporary laydown areas will be located at the site based on construction requirements.

Temporary construction power will be provided by a temporary connection to the local VEA distribution service in the area. A temporary above-ground circuit will be located between the construction trailer area and the VEA point of interconnection. The temporary construction

power service will be removed (including any towers if required) at the end of the construction period.

Alternatively, generators may be used to provide temporary construction power. All temporary power and water service lines will be located within the permanent ROW Project application area.

3.1.4 Geotechnical Studies and Data Needs

3.1.4.1 Geotechnical Studies

To develop a geological profile of the area underlying the Project site, the Applicant will conduct detailed geotechnical studies prior to construction of the Project to determine the engineering characteristics of local soils and geology. These geotechnical studies will include:

- Borings up to 25 feet in depth
- Test pits up to 15 feet in depth
- Driving of test posts

Geotechnical and soils analysis will be performed to determine:

- The presence or absence of rock, old excavation, or fill
- The classification of the soil strata
- The bearing capacity of the soil and depth at which footings must be founded
- Compaction, swelling, collapse and corrosion potential
- Thermal and electrical resistivity
- Infiltration

3.1.4.2 Meteorological Stations

Prior to construction, the Applicant will install solar meteorological stations (SMSs) at the Project site during the construction process to gather information on air temperature, wind direction and speed, and solar transmissivity.

The SMSs will consist of either driven post or surface-mounted tri-pods containing meteorological instrumentation and communication equipment. The maximum height is approximately 10 feet. The SMS sites will be located within the Project's perimeter fence; thus, they will not be fenced. Examples of typical SMSs are provided below.


Typical Meteorological Stations

3.1.5 Water

Water will be required during Project construction for construction-related activities, including dust control. After construction is complete, the Project's annual water consumption during operation is expected to be minimal. The Project does not require process water; however, the administrative area will require domestic potable water service. The main consumption of water during operation will be for occasional panel washing and/ employee sanitary facilities

The Applicant has prepared a water supply assessment for the project. Construction water will be obtained by leasing water from existing water rights holders. This water may be trucked to the Project site or the point of use may be changed to facilitate drilling of an on-site well.

3.1.6 Ancillary Facilities

The following subsections describe the various power plant auxiliary systems associated with the Project.

3.1.6.1 Supervisory Control and Data Acquisition System

The Project will have a Supervisory Control and Data Acquisition (SCADA) system that will allow for the remote monitoring and control of inverters and other Project components. The SCADA system will be able to monitor Project output and availability, and to run diagnostics on the equipment. This equipment will be located in the O&M building.

The SCADA system will provide control, monitoring, alarm, and data storage functions for the power plant systems. Redundant capability will be provided for critical SCADA components such that no single component failure will cause a plant outage. The SCADA will be linked to the inverters, met stations and relays via fiber optic and copper communications cable. These data links will provide control, monitoring, alarm, and data storage functions via the control operator interface and control technician workstation of the SCADA system.

3.1.6.2 Lighting System

The Applicant has incorporated measures designed to reduce night lighting into the Project's lighting systems. Night lighting used during construction, operation, and maintenance of the Project will be controlled or reduced using directed lighting, shielding, and/or reduced lumen intensity. Permanent lighting will be provided at the O&M building and the main site entrance. The Applicant will prepare a Lighting Management Plan.

3.1.6.3 Cathodic Protection Systems

While not expected, underground metal structures may have cathodic protection as necessary based on soil conditions. The only underground metal structures will be the driven posts (to support the PV modules and combiner boxes) and ground grid used under high voltage equipment to reduce touch potential. The ground grid will be composed of copper wire and will be limited to the substation portion of the Project. Cathodic protection is not anticipated at this time but may be necessary if the soil corrosivity data from the geotechnical investigation recommends it. Galvanized metal posts and epoxy-coated rebar may be utilized in lieu of cathodic protection if supported by soil conditions. If cathodic protection is recommended, a sacrificial anode type cathodic protection system will be provided. Institute of Electrical and Electronics Engineers (IEEE), Electric Power Research Institute and the National Association of Corrosion Engineers (NACE) guidelines will be used in establishing the necessity, type and extent of cathodic protection equipment. All cathodic protection equipment will be included within the area already designated for the substation.

3.1.6.4 Buildings, Roads, Fencing and Security

3.1.6.4.1 Buildings

The Project may include an O&M area consisting of a permanent O&M building that would house administrative, operation, and maintenance equipment and personnel and will have an adjacent parking area. Additional components of the O&M area include a laydown and storage area, trash containers, water storage tanks and septic field. The O&M area will be equipped with exterior lighting as described in the Lighting Management Plan that the Applicant will prepare.

The O&M building will also include communication equipment and a storage and equipment area. It will contain offices, toilets and other features necessary for habitation on a daily basis. The design and construction of this building will be consistent with applicable county building standards.

Backfeed from the Gamebird substation (POI) will be established and will provide power for the construction phase. Power for the O&M Area (to be used during project operations phase) will be delivered via the grid.

A separate, uninhabited communications enclosure will be located adjacent to the onsite substation. The communications enclosure will be constructed of either metal or pre-cast

concrete. The communications enclosure will house the site communications and metering equipment.

Above ground water storage tanks, if required, will be located within the O&M area and will be designed to meet applicable federal, state, and local requirements.

3.1.6.4.2 Roads

Regional access to the Project site is provided from the primary access at the intersection of State Route 160 and Trout Canyon Road. Project-related roads for direct access to the site include the Project access way, perimeter road, and solar field access ways as summarized in **Table 3-4**, and further described below. During construction, a stabilized gravel and aggregate base entrance/exit will be provided to clean vehicle wheels prior to exiting the construction area. Similar to the disturbance that would occur from other Project components (based on the assumption that all acreage within the fenced perimeter will be disturbed), the acreage identified for roads also is considered to be permanent disturbance.

Project Access Way. An access road will be constructed off of SR-160, at the intersection with Trout Canyon Road (**Figure 1-2A**). The access way would be approximately 230 linear feet in length and 80 feet in width, for a total area of approximately 0.5 acres. The access way will be graded compacted earth and will be used for delivery of all Project components and will be used by workers traveling to the site during construction. If determined necessary by the Project, for dust control purposes, the access way may be upgraded to aggregate or paved surface.

Perimeter Road. A new Perimeter Road will be located just inside of the site's perimeter fence and within the solar field area around specific blocks of equipment. The Perimeter Road will be constructed to allow access by maintenance and security personnel. This road will be approximately 20 feet wide, will be crowned and ditched appropriately, and will be composed of graded/compacted dirt. Alternatively, the Perimeter Road may utilize an aggregate base in some or all areas to meet Project dust and flood control requirements. The road will facilitate access through the site for non-four-wheel-drive vehicles and will be maintained to minimize dust that could be associated with use of vehicles for monitoring and security needs.

Solar Field Access Ways. Within the solar field, new access ways will be built to provide vehicle access to the solar equipment (PV modules, inverters, transformers) for O&M activities. These access ways will be approximately 20 feet wide, will be crowned and ditched appropriately, and approximately every 500 to 1,300 feet across the solar field. The existing surface area will be graded and compacted using onsite materials to facilitate use by two-wheel-drive vehicles. The solar field access ways will connect to the Perimeter Road at each end of each access way.

TABLE 3-4

Project Related Roads

Road	Status	Surface

Perimeter Road	New	graded/compacted earth[5]
Solar Field Access Ways	New	compacted earth
Project Access Ways	New	graded/compacted earth[6]

3.1.6.4.3 Perimeter Fencing for Solar Field

The solar field and support facilities perimeter will be secured with metal-fabric security fencing. Controlled access gates will be located at the site entrance. Access gates will also be located at specific locations along the Perimeter Road to allow maintenance and security crew access to all portions of the Project site. The location of the perimeter fence is shown on **Figure 1-2A**. Perimeter fencing will be setback 5 feet from the project site boundary. Perimeter fencing would be seven (7) feet in height (including 6-feet of fence and 1-foot of barbed wire at the top of the fence).

As necessary, approved desert tortoise exclusion fencing will also be utilized and will either be installed outside the perimeter security fence or with Tortoise-proof half-inch hardware cloth metal mesh installed against the lower two feet of the perimeter fence. Either tortoise fence option will extend an additional one foot below the ground. The tortoise-proof fencing is intended to prevent federally listed desert tortoises from entering the solar field.

Fencing will also be installed around the onsite substation. Access gates will be provided to allow maintenance vehicle access to the equipment. Substation fencing will be similar in design to the perimeter fence.

3.1.6.4.4 Construction Fencing

Fencing during construction will consist of portable stand-alone fence modules or plastic snow fencing supported by standard metal fencepost. As necessary, desert tortoise fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone, preventing vehicles or personnel from straying onto adjacent offsite habitat. The entire project area would be fenced prior to construction. Construction perimeter fencing would be 6-feet in height.

3.1.6.4.5 Firebreak

As shown in **Figure 1-2A**, the perimeter fence is setback 5 feet from the project site boundary. Additionally, the site plan includes a minimum spacing of at least 20-feet in all areas of the project site between the perimeter fence and the edge of glass of the solar arrays, or any other permanent built project facilities. Within the 5-feet setback outside the perimeter fence and also within the minimum 20-feet area immediately inside the perimeter fence, shrubs and other large vegetation will be removed to form a firebreak area.

[5] Perimeter Road may be surfaced with aggregate rock if determined necessary by the Project to meet dust and flood control requirements.
[6] Access Road(s) may be constructed with an aggregate or paved surface if required by the County, or at the discretion of the Project.

3.1.7 Site Security

Security at the Project site will be achieved by fencing, lighting, security patrols, and electronic security systems. The Project site will be monitored on a 24 hours per day, seven days per week basis. Site security will be provided through a combination of on-site staffing and security patrols, remote monitoring, or electronic security systems. Lighting will be provided at the O&M building and Project Entrance Gate.

3.1.8 Electrical Components, New Equipment, and Upgrades

3.1.8.1 Electrical Generation

The PV modules will convert sunlight into DC electricity. PV-generated DC power will be collected from each of the multiple rows of PV modules through one or more combiner boxes and conveyed to an inverter (housed in the PCS shelter). The inverter will convert the DC power to AC power, which will then flow to a medium-voltage transformer that converts the output of the inverter to 34.5kV. Multiple medium-voltage transformers will be connected in parallel in a daisy chain configuration and power delivered to the proposed onsite substation, where the power will be stepped up to 230kV for delivery to the GLW transmission system.

3.1.8.2 Inverters, Transformers and Medium Voltage Switchgear

The Project inverters and medium voltage transformers, as well as other electrical equipment (such as medium voltage switchgear enclosures, also referred to as Photovoltaic Combining Switchgear, or PVCS), will be located within protective electrical equipment enclosures supported by concrete pad. Each PCS will be connected to one or two transformers to support each array. Inverter, transformer and PVCS specifics will vary pending final Project design.

3.1.8.3 Onsite Substation

An onsite substation will be constructed as part of the Project. The onsite substation will include an uninhabited control house, medium and high voltage switchgear, and conductor structures. The substation may also include microwave tower, a control house, and one or more 34.5kV/230kV main power step up transformers.

The containment area will be concrete lined and will drain to a below-grade sump. Any stormwater or fluid drained to the sump will be inspected for a sheen. If a sheen is observed, the sump contents will be removed by vacuum truck and disposed at an approved disposal facility. If no sheen or contaminants are detected, the storm water will be drained on-site. The above containment system will be designed to accommodate the volume of the dielectric fluid in the transformer plus an allowance for precipitation.

3.1.8.4 Electrical System for Plant Auxiliaries

Power for plant auxiliaries will be supplied by the PV facility when the array is producing power and back feed from the electrical grid when the PV facility is not producing power. Auxiliary

electrical needs include power to keep the transformers energized at night and for plant lighting and security, and data acquisition/communications.

3.1.9 Interconnection to the Electrical Grid

The PVCS will be connected to the onsite substation. The output of the onsite substation will pass through a final generation step-up transformer(s) to convert it to the 230kV interconnection voltage to be relayed to GLW's Gamebird Substation.

3.1.10 Erosion Control and Stormwater Management

3.1.10.1 Technical Drainage Study

A conceptual drainage study has been completed and a preliminary drainage study will be completed by mid-October 2022.

3.1.10.2 Drainage Control Design

The majority of the Project site will be drained by sheet flow to existing onsite and offsite drainages. A preliminary drainage study has been completed and the site plan has been updated to include retention basins based on this preliminary data.

3.1.11 Vegetation Treatment and Weed Management

3.1.11.1 Vegetation Treatment

Within the solar field areas, existing vegetation would be worked into the underlying surface soils using the technique of "disk and roll" and where necessary, conventional grading, will be used to prepare the site for post and PV panel installation. The disk and roll approach uses conventional farming techniques and equipment to prepare the site for construction. The solar array field would be prepared using rubber-tired tractors with disking equipment and drum rollers with limited use of scrapers to perform micrograding. In areas where the terrain is not suitable for disk and roll, grading will be used to prepare the site surface. The desire and intent is not to change the macro-level topography (in order to utilize the existing drainage pattern across the site), but to flatten the surface of the existing topography to provide safe working conditions.

In development areas where "disk and roll" or conventional grading techniques are not implemented, vegetation will be cut to a height of less than 12 inches. Vegetation will be permanently cleared from roadways, access ways and where concrete foundations are used for inverter equipment, substation and the O&M facilities.

Where possible, plant root systems will be left in place. Exceptions include where grading and trenching is required for placement of solar module foundations, underground electric lines, inverter and transformer pads, roads and access ways, and other facilities. The height of the

vegetation will be maintained as needed for site maintenance and fire-risk management using mechanical and chemical controls.

3.1.11.2 Noxious Weed Control

A Noxious Weed Management Plan will be prepared for the Project. This plan will follow the Las Vegas Resource Management Plan (BLM, 1998), Noxious Weed Plan (BLM, 2006), and the interagency guidance Partners Against Weeds (BLM, 2007) for an active integrated weed management program using weed control best management practices (BMPs). The Project will implement the project-specific measures that are included in the Noxious Weed Management Plan.

3.1.12 Waste and Hazardous Materials Management

The primary waste generated at the Project during construction, operation, and maintenance would be nonhazardous solid and liquid wastes. The types of wastes and their estimated quantities are discussed below and summarized in **Table 3-5**, the Applicant would prepare, as needed, a Hazardous Materials and Waste Management Plan, which would address waste and hazardous materials management, including Best Management Practices (BMPs) related to storage, spill response, transportation, and handling of materials and wastes. Hazardous materials will be handled and stored in accordance with Nye County requirements. Solar panels and spent batteries will be replaced and will be sent to recycling facilities to the maximum extent practicable in accordance with accepted industry standards. The recycling facilities to be used will be selected prior to the commencement of operations. LRE actively participates in solar energy industry groups related to material recycling.

TABLE 3-5

Wastes Potentially Generated by the Project

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Scrap wood, steel, glass, plastic, paper	Construction activities	Normal refuse	400 tons	Nonhazardous	Recycle and/or dispose of in industrial or municipal landfill
Scrap metals	Construction activities	Parts, containers	<4 tons	Nonhazardous	Recycle and/or dispose of in industrial or municipal landfill
Empty hazardous material containers	Operation and maintenance of plant	Drums, containers, totes[7]	<2 tons	Hazardous and nonhazardous solids	Containers <5 gal would be disposed as normal refuse. Containers >5 gal would be returned to vendors for recycling or reconditioning.

[7] Containers include <5-gallon containers and 55-gallon drums or totes

Waste oil filters	Construction equipment and vehicles	Solids	1000 lbs	Used Oil	Recycle at a permitted Treatment, Storage, and Disposal Facility (TSDF)
Oily rags, oil sorbent excluding lube oil flushes	Cleanup of small spills	Hydrocarbons	200 cubic ft	Used Oil	Recycle or dispose at a permitted TSDF
Spent lead acid batteries	Construction machinery	Heavy metals	20	Hazardous	Store no more than 10 batteries (up to 1 year) - recycle off site.
Spent alkaline batteries	Equipment	Metals	100 lbs	Universal waste solids	Recycle or dispose offsite at a Universal Waste Destination Facility
Waste oil	Equipment, vehicles	Hydrocarbons	1000 gallons	Used Oil	Dispose at a permitted TSDF
Sanitary waste	Portable toilet holding tanks	Solids and liquids	400,000 gallons	Nonhazardous liquid	Remove by contracted sanitary service

3.1.12.1 Nonhazardous Wastes

The Project would produce waste typically associated with O&M activities. These would include defective or broken electrical materials, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes.

In addition, the Project will generate onsite domestic water and sanitary sewer waste from the O&M building. A septic tank and drain field system will be used for collection, treatment, and disposal of sanitary sewer waste. The sanitary waste system will not receive other wastes or surface runoff from the O&M area (i.e., hazardous materials or contaminated runoff). No connection to any existing sanitary sewer system is anticipated.

3.1.12.2 Hazardous Materials and Hazardous Waste

Limited quantities of hazardous materials would be used and stored on site for O&M activities. **Table 3-6**, lists the hazardous materials anticipated that would be stored and used on site. Material Safety Data Sheets (MSDSs) for each of these materials and a Hazardous Materials and Waste Management Plan would be prepared for the Project.

TABLE 3-6

Hazardous Materials That May Be Used During Operation

Hazardous Material	Storage Description; Capacity	Storage Practices and Special Handling Precaution

Mineral Insulating Oil	Carbon steel transformers; total onsite inventory of 80,000 gallons.	Used only in transformers, secondary containment for each transformer would be managed in accordance with the Hazardous Materials and Waste Management Plan.
Batteries, lead acid based and/or lithium ion	Battery-based emergency back-up power at each of the PCS.	Sufficient cooling capacity to maintain ambient temperatures appropriate for the selected battery would be provided.
Propane	Generator-based emergency back-up power at each of the nine PCS shelters (or one centralized generator); tanks at PCS will be sized between 20 and 100 gallons (or 1000 gallons if one centralized tank).	Would be managed in accordance with the Hazardous Materials and Waste Management Plan.
Herbicide: Roundup (glyphosate) or equivalent; Pesticide	Brought on site by licensed contractor, used immediately.	No mixing will occur onsite and no herbicides will be stored onsite.

3.1.13 Fire Protection

The Project's fire protection water system, if required, will be supplied from water storage tanks. During construction, one electric and one diesel-fueled backup firewater pump will deliver water to the fire protection water-piping network. Fire protection pump flow rates will be in accordance with applicable standards. A smaller electric motor-driven jockey pump will maintain pressure in the piping network. If the jockey pump is unable to maintain a set operating pressure in the piping network, a main fire protection pump would start automatically. All fire protection system pumps must be shut off manually.

The electrical equipment enclosures that house the inverters and transformers will be either metal or concrete structures. Any fire that could potentially occur would be contained within the structures, which are designed to meet National Electric Manufacturers Association (NEMA) 1 or NEMA 3R IP44 standards for electrical enclosures (heavy duty sealed design to withstand harsh outdoor environmental conditions). The Applicant will prepare and implement a Fire Management Plan.

The Battery Storage (BESS) facility design, construction and operation will follow applicable fire and building codes for its safe design, construction and operation.

3.1.14 Health and Safety Program

The Applicant would require that all employees and contractors adhere to appropriate health and safety plans and emergency response plans. All construction and operations contractors would be required to operate under a Health and Safety Program (HASP) that meets industry standards. All site personnel would be required to go through a new hire orientation and follow

a Worker Education and Awareness Plan (WEAP), which would address Project-specific safety, health, and environmental concerns.

3.2 Alternatives Considered

In order to provide a sufficiently large area to evaluate a reasonable range of alternatives for solar facility siting, the Applicant has established an Application Area for the Project of approximately 5,050 acres of BLM-administered lands (**Figure 1-1**). As necessary, alternatives will be developed and analyzed that address identified unresolved resource and land use conflicts. Alternatives may include varied site layouts, configurations, and solar modules.

As part of the project site selection exercise, sites throughout Nevada were evaluated with respect to the following criteria:

- Sufficient contiguous land with relatively flat topography necessary for the installation of PV solar panels.
- Reasonable proximity to existing road access.
- Reasonable proximity to existing transmission infrastructure so as to allow for efficient interconnection.
- Project site location containing relatively few known environmental constraints relating to biological and/or cultural resources.
- Site location with adequate access to existing water rights to be used for the Project during both construction and O&M phases.
- Preliminary review of the Project site reveals that site not located within a BLM designated solar right-of-way exclusion zone.

3.3 Other Federal, State, and Local Permits and Approvals

The Project would be located on public land administered by the BLM. Federal, state, and local agencies would be consulted regarding the Project. **Table 3-7** lists other permits that may be required for the Project, and the authorizing agencies. The master permit document will be the BLM's ROW Grant.

TABLE 3-7

Federal, State, and Local Permits and Authorizations That May Be Required for the Project

I. Federal Permits or Authorizations
U.S. Department of the Interior, BLM
• ROW authorization under Title V of FLPMA
• EIS Record of Decision
• Notice to Proceed

U.S. Department of the Interior, BLM and State Historic Preservation Office/Advisory Council on Historic Preservation

- BLM/SHPO, NHPA Section 106

U.S. Department of the Interior, Fish and Wildlife Service

- Endangered Species Act Section 7 Biological Opinion/Incidental Take Permit

U.S. Army Corps of Engineers

- Section 404 Jurisdictional Waters Determination

II. State of Nevada Permits or Authorization

Nevada Department of Wildlife

- Wildlife Special Purpose Permit

Nevada Division of Environmental Protection

- Stormwater Discharge Permit (NOI)
- NPDES Temporary Groundwater Discharge Permit
- Temporary Permit for Working in Waterways (formerly known as "Rolling Stock Permit")
- Surface Area Disturbance – Class II Air Permit

Nevada Public Utilities Commission

- Nevada Utility Environmental Protection Act Permit to Construct (for solar facilities 70MW or greater and transmission lines 230 kV or greater)

Nevada Division of Water Resources (State Engineer)

- Water Rights Modifications, Possible Change of Place of Use, and Manner of Use Point of Diversion.

Nevada State Fire Marshall

- Hazardous Materials Storage Permit

Nevada Department of Transportation (NDOT)

- Encroachment permit or other required permit for project site access road from SR-160.

III. Local Government Permits or Authorization

Nye County

- Special Use Permit (SUP)
- Building Permit, including compliance with applicable electrical codes

The studies required to support federal permitting and environmental review include, but are not limited to, identification of biological resources (rare plants, wildlife) in accordance with the federal Endangered Species Act; identification of waters of the United States in accordance with the federal Clean Water Act; identification of cultural resources in accordance with the NHPA; and visual resources, air emissions, and noise assessments conducted as part of the NEPA process. Federal agencies with likely interest in Project review include the U.S. Wildlife Service (USFWS) and the U.S. Army Corps of Engineers (USACE).

State and local permits will also be required for storm water management and air emissions. The Project will require a number of state permits from agencies, including the Nevada Divisions of Wildlife, Forestry, Water Resources, and Environmental Protection; Department of Transportation; Nevada State Historic Preservation Office; and Public Utilities Commission. The Project will also require local permits from agencies, including the Nye County Regional Flood Control District,Development Services Department, and Public Works Department.

3.4 Financial and Technical Capability of the Applicant

Copper Rays Solar, LLC is a wholly-owned subsidiary of Leeward Renewable Energy (LRE). LRE is a growth-oriented renewable energy company that owns and operates a portfolio of 24 renewable energy facilities across nine states, totaling more than 2,500 MW of installed capacity. LRE is actively developing and contracting new wind, solar, and energy storage projects in energy markets across the U.S., with 1.9 gigawatts contracted and 20 gigawatts under development and construction spanning over 100 projects. With projects currently under construction and soon to commence construction, we expect to commercialize over 1,000 MW of renewable energy projects in the next two years.

LRE is a portfolio company of OMERS Infrastructure, an investment arm of OMERS, one of Canada's largest defined benefit pension plans with C$121 billion in net assets (as at December 31, 2021) LRE has extensive experience in utility-scale solar project development in the United States . We currently have one operating solar project, the 30MW Barilla Solar in Texas, and about 880 MW of solar projects under construction in California, Ohio, and Texas.

For more information on LRE, please refer to our website at www.leewardenergy.com.

SECTION 4

Construction of Project Facilities

4.1 Construction Schedule and Sequence

The BLM will be the lead Federal agency for approving the Project and will issue a right-of-way (ROW) grant authorizing the use of BLM-administered lands for Project construction, operation, and decommissioning. The decision regarding the issuance of the ROW grant would be based in part on an evaluation of the Project's potential environmental effects through the requirements of the National Environmental Policy Act (NEPA) and the Federal Land Policy and Management Act of 1976 (FLPMA). The NEPA process will likely involve the preparation of an Environmental Impact Statement (EIS) detailing the Project's expected environmental impacts, alternatives to the proposed action, and mitigation measures that would avoid, minimize, or offset identified adverse impacts. The NEPA process will commence once the BLM has deemed the POD complete, issued a Notice of Intent (NOI) to prepare an EIS, and selected a consultant to prepare the EIS. It is estimated that it will take up to 15 months from the formal initiation of the NEPA process to receive the Record of Decision (ROD) and associated ROW grant.

The Applicant recognizes the importance of timely and clear communication with involved public agencies and community stakeholders. The Applicant will initiate discussions and consultation processes with other involved Federal, State, and local permitting agencies in a timely manner as Project development proceeds. These include the U.S. Fish and Wildlife Service (USFWS), the U.S. Army Corps of Engineers (USACE), the Nevada State Historic Preservation Office (SHPO), and other agencies with potential jurisdiction over the Project. The Applicant has engaged with USFWS staff regarding survey protocols and requirements and will coordinate with the USACE upon completion of the Waters of the U.S. Report. The project will also actively support BLM staff in the Section 106 process. Finally, the Applicant has engaged Nye County leaders and residents in meetings to discuss the requirements of the Special Use Permit (SUP) and the need for a Development Agreement. Such discussions with Nye County will continue.

The construction of the Project would begin once all applicable approvals and permits have been obtained and a Power Purchase Agreement has been finalized. Construction of each of the three phases would require 12-18 months. Market and offtake conditions will determine the start of construction for each phase. It is expected that the Project will take approximately 96 months to construct all three phases and be completed by December 2032. This time period could be shorter if one phase commences immediately after the completion of the previous phase. Once construction is completed, the Project would be in operation for at least 30 years with the possibility of a subsequent repowering for additional years of operation.

A Project schedule is provided in **Table 1-1**. Major construction process milestones are listed in **Table 4-1** below. This schedule is conceptual and subject to change. It is not anticipated that any

necessary CAISO transmission system improvements will constrain the Project development schedule.

TABLE 4-1

Project Construction Schedule Major Milestones

Activity	Completion Date
Federal Approvals	Dec 2023
Phase 1 – Project Construction	Dec 2025
Phase 2 – Project Construction	Dec 2029

4.2 Design, Layout, and Installation

Project construction will begin after all necessary agency approvals have been issued, and preconstruction conditions in the BLM-issued ROW grant and other approvals have been met. Construction will be scheduled to align with the delivery dates negotiated with the utility customers. Prior to any activity on the site, required resource protection plans will be developed, and regulatory and permit conditions will be integrated into the final construction compliance documents.

Detailed construction design will take place during the final phase of Project permitting. The Site Plan and Technical Drainage Report (TDR) will be submitted to Nye County for review and approval, and licensed professional surveyors will conduct the final Project boundary surveys and will stake out the Project site design layout before construction.

4.2.1 Environmental Clearance

Initial site mobilization activities will include environmental clearance in which site activities are reviewed and approved for compliance with resource protection plans and approved construction- compliance documents.

During the environmental clearance phase, the boundaries of the construction area will be delineated and marked. As necessary, tortoise fencing will be installed around the perimeter of the construction area to prevent desert tortoise from moving onto the site from adjacent areas. As necessary, professional biologists will be used to meet cactus salvage requirements, survey and translocate desert tortoise in accordance with a BLM-approved plan, and perform other sensitive species removal and mitigation.

Environmental clearance will occur only during weather conditions permitted for the activity.

4.2.2 Site Access and Laydown

Construction laydown areas will be located in the northern portion of the Project site, adjacent to the site entrance (See **Figure 1-2A**).

Following completion of environmental clearance for the site access and laydown areas, these areas will be prepared for use.

The construction entrance and exit gates will be established. Parking and staging areas will be staked for temporary and permanent building erection at a later stage. Temporary equipment storage and laydown areas will be compacted and marked with temporary stakes and signage.

4.2.3 Site Preparation

Within the solar field areas, existing vegetation would be worked into the underlying surface soils using the techniques of mowing or "disk and roll" where feasible. Use of conventional grading will be minimized and used only where necessary. The mowing approach would remove above ground vegetation without major impacts to topology or below ground vegetation. The disk and roll approach uses conventional farming techniques and equipment to prepare the site for construction. The solar array field would be prepared using rubber -tired tractors with disking equipment and drum rollers with limited use of scrapers to perform micro-grading. In areas where the terrain is not suitable for mowing or disk and roll, grading would be used to prepare the site surface. The desire and intent is not to change the macro- level topography (in order to utilize the existing drainage pattern across the site), but to flatten the surface of the existing topography to provide safe working conditions.

In development areas where "disk and roll" or conventional grading techniques are not implemented, vegetation will be cut to a height of less than 12 inches. Vegetation will be permanently cleared from roadways, access ways and where concrete foundations are used for inverter equipment, substation and the O&M facilities.

In general, plant root systems will be left in place, except where grading and trenching is required for placement of solar module foundations, underground electric lines, inverter and transformer pads, roads and access ways, and other facilities. Vegetation will be maintained to a height of no more than approximately 12 inches as needed for site maintenance and fire-risk management using mechanical and chemical controls.

4.2.4 O&M Area Construction

Following environmental clearance and site preparation of the O&M area, construction in the O&M area will commence. Concrete foundations will be poured to support any permanent O&M building constructed as part of the Project and an area adjacent to the building may be paved for parking.

The building would be a modular steel building. An approximately 4-inch aggregate base will be installed on all unpaved areas within the O&M area.

Above ground water tanks will be erected and connected to a service pump. The active and reserve septic field will be established and connected to the O&M building's waste system. Temporary construction power will be connected to the O&M building. The potable water treatment equipment will be installed in the O&M building.

Erection of a Nye County dust control sign will be installed at the main entrance gate at this time.

4.2.5 Drainage Control

The majority of the Project site will be drained by sheet flow to existing onsite and offsite drainages. A preliminary drainage study has been prepared for the Project.

4.2.6 Onsite Substation Construction

The onsite substation will be constructed based on applicable electrical safety codes. The substation will be separately fenced to provide increased security around the medium and high voltage electrical equipment. The onsite substation area may also include a drainage collection area, a microwave tower, a control house, and one or more transformers.

The substation area will be excavated to a depth of 10 feet. A copper grounding grid will be installed and the foundations for transformers and metal structures will be prepared. The area will be backfilled, compacted and leveled followed by the application of 6 inches of aggregate rock base.

Equipment installation of the transformers, breakers, buswork and metal dead-end structures will follow. A pre-fabricated control house will be installed to house the electronic components required of the substation equipment.

4.2.7 Transmission Line Construction

The 34.5kV collection system will be comprised of underground and/or aboveground cabling. The Project will utilize overhead 230kV poles for interconnection of the high voltage electrical system. Stringing areas will be established and the location of each pole will be surveyed and staked.

Foundations for each pole will be constructed. The 230kV poles will have a foundation excavated to 12 to 45 feet in depth and 7 to 12 feet in diameter depending on the local soil conditions and the purpose of the poles (end and angle structures require deeper foundations). These foundations will be either drilled shaft directly embedded pole sections backfilled with aggregate or concrete or reinforced concrete pier-type foundations. After pole erection, conductor stringing and grounding will be performed. Two types of overhead transmission line poles will likely be erected – steel, wood or concrete monopole or "H-frame"230kV poles for interconnection of the high voltage electrical system and wooden monopole 34.5kV poles for collection of the medium voltage electrical system.

4.2.8 PV Equipment Installation

Prior to any construction in PV equipment areas, the environmental clearance and site preparation steps for those areas will be completed. Within each area designated for PV equipment, the construction sequence will follow a generally consecutive order.

The construction of the solar field will proceed in arrays. Each array will contain solar panels, a PCS and step-up transformer. Within each array, materials for each row of PV modules will be staged next to that row.

- Prepare trenches for underground cable
- Install underground cable
- Backfill trenches
- Install steel posts and table frames
- Install PV modules
- Install concrete footings for inverters, transformers and substation equipment
- Install inverter and transformer equipment
- Perform electrical terminations
- Inspect, test and commission equipment

Trenches will be excavated to a depth of approximately 3 to 5 feet and width of 2 to 3 feet. Organic material will be mulched and redistributed on-site except under equipment foundations or as trench backfill material. Underground cable will be installed and "stubbed up" to provide cable access during the electrical terminations step. The trenches will be backfilled with native soils and compacted. Excess soil will be redistributed on site and used to provide level ground for equipment foundations for inverters and transformers.

The mounting system for the PV modules will require that steel posts be driven into the ground using a vibratory hammer. Steel table frames will then be bolted to the driven posts and the modules mechanically fastened to the tables. Concrete footings and foundations will be required for the inverters, transformers and substation equipment.

The inverter/transformer concrete equipment pad will be pre-cast off-site, or poured in place to provide a suitable mounting surface for the equipment. A pre-fabricated enclosure containing the inverters and communication equipment is installed on the equipment pad. A 3-phase, medium voltage transformer will also be installed on the equipment pad.

Once all equipment is physically and electrically inspected, PV modules are terminated to the inverters and the transformers are terminated to the underground cabling.

4.3 Approach to Phased Construction and Operations

Construction of Project facilities is described in Section 4.2 above.

4.4 Access and Transportation System, Component Delivery, Worker Access

The site entrance for the Project will be directly off of SR-160 on the northeastern boundary of the site (**Figure 1-2A**). The access way will be graded compacted earth and will be used for delivery of all Project components and will be used by workers traveling to the site for construction. If determined necessary by the Project, for dust control purposes, the access way may be upgraded to aggregate or paved surface.

Construction access roadbeds will typically be 20-60 feet wide. Most construction staff and workers will come daily to the jobsite from within Nye and Clark Counties.

Temporary construction parking will be provided on the site near the O&M area shown on **Figure 1-2A**.

This area will provide sufficient parking for the construction workforce traveling to the Project site in their personal vehicles. Parking areas for construction vehicles and laydown areas for construction materials will be prepared inside the solar field area.

The Applicant will prepare a Traffic Management Plan.

4.5 Construction Workforce Numbers, Vehicles, Equipment, Timeframes

The onsite construction workforce will consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. The onsite construction workforce is anticipated to be an average of 500-700 construction jobs with a peak of 1,000 jobs during each phase. Depending on the time between each phase, there may be periods where the number of workers is reduced. The entire construction period for all three phases is estimated to be 96 months.

Table 4-2 (below) provides the estimated construction staffing (for each single phase of construction) that would occur within each single-phase of construction.

TABLE 4-2

Estimated Construction Staffing

Month(s)	Activity	Average Staff
1-3	Fencing and site preparation	125

3	Site preparation and pile installation	200
3-11	Site preparation and pile installation	500
6-12	Racking, Module and substation installation	700 (peak 1,000)
9-15	Module, PCS installation	500
15-18	BESS installation, testing and commissioning	200

Construction will generally occur between 6:30 a.m. and 5:00 p.m., Monday through Friday. Additional hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. For instance, during hot weather, it may be necessary to start work earlier to avoid work during high ambient temperatures. Further, construction requirements will require some night-time activity for installation, service or electrical connection, inspection and testing activities. Nighttime activities will be performed with temporary lighting.

Table 4-3 (below) provides information regarding the estimated numbers of various types of construction vehicles (or types of construction equipment), the number of hours of use per day, the duration of use (in months), and the types of activities associated with each type of vehicle, during each single phase of construction.

TABLE 4-3

Construction Vehicles (used during each single-phase of construction)

Equipment	Number of Vehicles	Hours/Day	Duration (Months)	Activity
Water truck	12	8	18	Dust control
Front end loader	12	8	14	Material movement
Scrapers	10	8	4	Site preparation
Bulldozer	6	8	4	Site preparation and access roads
Graders	12	8	4	Site preparation and access roads
Forklifts	30	8	18	Material handling
Backhoe	20	8	12	Site preparation, cable installation

Crane	10	8	8	Inverter, BESS and Substation installation
Pile driver	30	8	8	Pile installation
Trencher	10	8	12	Cable installation
Pick-up truck	20	8	18	Material and staff moving

Construction materials such as concrete, pipe, PV modules, wire and cable, fuels, reinforcing steel, and small tools and consumables will be delivered to the site by truck. Initial grading work will include the use of primarily rubber-tired tractors, tillers and vibratory rollers and limited use of track-driven excavators, graders, dump trucks, and end loaders, in addition to the support pickups, water trucks, and cranes. Throughout the construction process, temporary above ground fuel storage tanks will be located at the site for construction equipment fueling. As the Project moves into the next stages of civil work, equipment for foundations and road construction will be brought in, including paving machines (if required), trenching machines, pumps, additional excavators for foundation drilling, tractors, and additional support vehicles.

Table 4-4 (below) provides the estimated deliveries that would occur during construction, including the types of delivery vehicles used, the number of deliveries per day, and the duration of each delivery type to occur during each single phase of construction.

TABLE 4-4

Estimated Deliveries and Vehicles

Item	Vehicles	Deliveries Per Day	Duration (Months)
Modules	53-foot truck	10-15	7
Posts and racking	48-foot truck	8-10	6
Inverters and transformers	48-foot truck	2-3	2
Cable and misc.	48-foot truck	1-2	6
Concrete	Mixer truck	3-5	6
Workers	Cars/pick-up trucks	500	12-18
Water trucks	Water trucks	10-15	12-18

4.6 Site Preparation

4.6.1 Surveying and Staking

A licensed professional surveyor will conduct a land survey of the Project site and will stake the construction area as needed before construction begins.

4.6.2 Vegetation Removal and Treatment

Site preparation is discussed in Section 4.2.3 above.

4.6.3 Site Clearing, Grading, and Excavation

The Project will require a positive natural terrain slope of less than 5 percent. Grading and excavation requirements are described for each of the primary Project components below.

Solar Field. Within the solar field, some grading will be required for roads and access ways between the solar arrays, and for electrical equipment pads. In general, the design standard for the roads and access ways within the solar field will be consistent with the amount and type of use they will receive. Speed limit for vehicles using these roads will be 15 mph for dust control.

The Perimeter Road will be an all-weather compacted earth surface. This road will generally follow existing perimeter contours.

Within the solar arrays the amount of the grading will be minimal when the panel support foundations are driven. For locations where driven foundations are not feasible, other types of embedded foundations may be employed. Grading will also be required within each solar array to accommodate a level concrete pad to support the inverter and transformer.

Onsite Substation. The onsite substation requires a graded site to create a relatively flat surface for proper operation, with approximately 1 percent maximum slope in either direction. The substation interior will be covered with aggregate surfacing for safe operation.

O&M Area. O&M area grading will include the area where the O&M building will be constructed. The remaining area will be graded and appropriately surfaced for parking, roads, material storage and the erection of a temporary assembly structure for use during the construction phase of the Project.

A temporary lined pond may be excavated to allow water trucks to draft water during the construction phase of the Project. The pond area will be restored to grade at the completion of the construction phase. Alternatively above ground storage tanks may be used.

Graded pads for up to two permanent water storage tanks will be installed to provide fire water, if required.

Fire Break. As shown in **Figure 1-2A**, the perimeter fence is setback 5 feet from the project site boundary. Additionally, the site plan includes a minimum spacing of at least 20-feet in all areas of the project site between the perimeter fence and the edge of glass of the solar arrays, or any other permanent built project facilities. Within the 5-feet setback outside the perimeter fence

and within the minimum 20-feet area immediately inside the perimeter fence, shrubs and other large vegetation will be removed to form a firebreak area.

Project Access Way. The Project will be accessed from SR-160. The road surface would be aggregate rock and would comply with Nye County requirements, as applicable. See Sections 4.2.2 and 5.3.2.

4.7 Solar Array Assembly and Construction

The assembled solar equipment will be installed on steel posts to which steel table frames will be attached. Trucks will be used to transport the PV modules to the solar field. A small mobile crane may be used to assist construction workings in setting the solar modules on the driven steel posts. Trenching and excavating machines will be used for base trenching, light skiploaders for backfill, and light rollers for compaction. Final solar field assembly will require small cranes, tractors, and forklifts.

Cable trenches will be used to provide underground connection of Project equipment. Trenches will contain electrical conductors for power generation and fiber optic cables for equipment communication. Trenches will vary between 2 to 3 feet wide and 3 to 5 feet deep depending on the number of conductors and voltage of equipment to comply with applicable electrical codes.

Prior to trench excavation, the area to be trenched will be prepared using the methods described in Section 4.2. Trench excavation will be performed with conventional trenching equipment. Excavated soil will be maintained adjacent to the trench and used to backfill the trench once conductors are installed and tested. Excavated soil will not be removed from the Project site. Temporary sheeting or bracing shall be used as necessary to support trench side walls in areas where soils are soft or collapsible.

The trench itself will be backfilled with native excavated soils and compacted to 90 percent of standard proctor density. During the backfill, underground utility marking tape will be installed 12 inches below grade to indicate the type of conductors installed beneath.

4.8 Construction Waste Management

Hazardous materials associated with the Project are discussed in Section 3.1.12. During construction, the primary waste generated will be nonhazardous solid waste. However, some nonhazardous liquid waste and hazardous waste (solid and liquid) will also be generated. Most of the hazardous waste generated during construction will consist of liquid waste, such as water from excavation dewatering (if it contains contaminants), flushing and cleaning fluids. Although highly unlikely with precautions and best practices implemented, a small amount of hazardous waste may be generated during construction primarily from small petroleum spills resulting from the operation of heavy equipment and filling of transformer and hydraulic equipment reservoirs.

These spills will be cleaned up if they occur and the resultant waste material properly disposed of in accordance with federal and state regulations.

The nearest landfill to the Project site is the Nye County/Pahrump Valley Sanitary Landfill, which is a Class I Landfill located approximately 12 miles northwest of the site. In addition, the Nevada National Security Site Area 23 is a Class II and Class III Landfill located approximately 60 miles northwest of the Project site. As necessary, the Applicant will prepare a Hazardous Materials and Waste Management Plan that will describe the storage, transportation, and handling of wastes and will emphasize the recycling of construction wastes where possible and will identify the specific landfills that will receive construction wastes that cannot be recycled. Construction wastes will be managed in accordance with the Resource Conservation and Recovery Act (RCRA) (42 USC 6901, et seq. and RCRA's implementing regulations at 40 CFR 260, et seq.) and other applicable state and local regulations.

4.8.1 Wastewater

Wastewater generated during construction will include sanitary waste, storm water runoff, equipment washdown water and water from excavation dewatering during construction (if dewatering is required). These wastewaters may be classified as hazardous or nonhazardous depending on their chemical quality and handled and disposed of in accordance with applicable law.

4.9 Gravel, Aggregate, and Concrete Needs and Sources

A small amount of concrete will be poured in place for equipment and building foundations, fence footing and miscellaneous small pads. Locally available aggregate material will be used for the parking lot and substation area (and if determined necessary, for the perimeter road and site entrance).

Concrete, mechanical, and electrical works will be performed with the aid of graders, rollers, front loaders, dump trucks, trenching machines, concrete mixer and pump trucks, cranes, and pick-ups.

4.10 Electrical Construction Activities

Electrical construction will include installation of electrical equipment and necessary infrastructure to energize the equipment. Construction areas will include the Project solar field and interconnecting transmission line.

Electrical construction will consist primarily of the following elements:

- **Equipment**—Installation of all electrical equipment including DC combiner boxes, PCS shelters (including inverters), transformers, circuit breakers, disconnect switches,

switchgear and distribution panels, lighting, communication, control, and SCADA equipment.

- **Cables**—Installation of all cables necessary to energize the Project equipment including instrument control wiring. High, medium, and low voltage cables will be routed via cable trays, above grade conduits, below grade conduit in duct bank, and overhead structures as necessary.
- **Grounding**—All equipment and structures will be grounded as necessary. Within the solar field, an appropriate grounding system will be engineered and constructed in order to maintain personnel safety and equipment protection.
- **Telecommunications**—Multiple communication systems will be required for the Project to properly operate, including T-1 internet cables, fiber optic, and telephone. All communications will be installed during electrical construction.

The site will include an underground and/or overhead 34.5kV collection system and an overhead 230 kV line. Transmission line characteristics and construction techniques are briefly summarized below, and standard construction techniques that will be implemented also are provided.

4.10.1 34.5kV Collection System

The 34.5kV output from each medium voltage transformer will be "daisy-chained" together using underground trenched conductors. "Daisy-chain" refers to the manner in which the transformers are electrically connected together on the 34.5kV side. Transformers for this application will be ordered as loop-feed transformers meaning that they have two (2) sets of medium-voltage bushings. Each transformer will connect to the transformers from adjacent blocks (using buried conductors in trenches), except for the last transformer in each circuit which only connects to one other transformer.

Each 34.5kV underground circuit from transformers will connect to the 35kV Photovoltaic Combining Switchgear using 35kV rated medium voltage cables listed for direct buried applications. 34.5kV cables from each Photovoltaic Combining Switchgear to the 34.5kV to 230 kV Step-up transformer (SUT) at the Project substation will also be 35kV rated medium voltage cables listed for direct buried applications. Underground 34.5kV cables will be installed to comply with the minimum burial depth in accordance with the National Electrical Code.

Overhead 34.5kV lines will be installed as double circuit lines on wood poles with post insulators (typical of medium voltage installations in electric distribution systems). Pole height will be 45 feet above grade. Spacing between individual circuits and phases will comply with National Electrical Safety Code requirements, typically 5 feet. A 23-foot ground clearance will be maintained under 34.5kV lines based on the highest expected temperature and loading. Wood poles will be installed with 150-foot spacing between poles. Wood poles will be directly embedded to 10 percent of the pole height plus 2 feet, typically 8 feet deep. A ground rod of 8 to 12 feet will be hammered into the ground adjacent to the wood pole.

4.10.2 230kV Transmission Line

The Project will include the construction of approximately 5-mile 230kV gen-tie line for interconnection to the GLW Gamebird Substation. As shown in **Figure 1-3A**, two route options are being considered, each with a proposed ROW width of 300 feet and the same approximate length. A switching station will be constructed to connect the Project gen-tie line to the 230kV transmission line. The overhead 230kV transmission line will be installed on steel, wood or concrete structures up to approximately 125 feet above grade with 18 feet spacing between conductors and minimum ground clearance of 28 feet per NESC (National Electrical Safety Code-2012) requirements. The 230kV transmission poles may be either the monopole type or "H-frame" to support interconnection to the transmission system.

4.10.3 Standard Transmission Line Construction Techniques

Standard transmission line construction techniques will be used to construct the 230kV transmission line and 34.5kV collector lines. Primary stages in transmission line construction are foundation installation, tower installation, and conductor stringing. These stages are briefly described below for each of the transmission line types that will be installed at the site.

Foundation Installation. The 230kV poles will have a foundation excavated to 12 to 45 feet in depth and 7 to 12 feet in diameter depending on the local soil conditions and the purpose of the poles (end and angle structures require deeper foundations). These foundations will be either drilled shaft directly embedded pole sections backfilled with aggregate or concrete, or reinforced concrete pier- type foundations. Larger diameter and deeper foundations will be located where the transmission line turns at an angle of 30 degrees or greater.

Tower/Pole Installation. Poles will be staged either in a designated laydown/stringing area, or they may be delivered and unloaded adjacent to their respective final locations.

Poles will be placed onto their foundations (for wood, placed into their holes) using backhoes or heavy lifter vehicles for the smaller, lighter poles, or a crane for longer poles. The poles will be supported, as necessary, during backfilling or bolting to the foundation to ensure correct pole seating and raking. Taller steel poles, typically those that are over 45 feet long, will be composed of multiple sections that will be stacked on each other and then "jacked" together (aligning the boltings on each pole so that they can be properly fastened).

For dead-end wood poles or turning poles, guys and anchors will be installed with auger trucks placing the anchors. Wood pole dead-ends for a double circuit will possibly be two independent poles, two poles lashed together with guys, or more simply, a steel pole on a drilled pier foundation with davit arms designed to hold the tension of a double circuit.

Conductor Stringing. Conductor stringing will likely be conducted one phase at a time, with all equipment in the same operational place until all phases of that operation are strung. The sequence of conductor stringing operations is summarized below.

- Finger Lines: The finger line is used to pull the later pilot line through travelers installed on each davit arm. The finger line is typically a small diameter synthetic rope that can be pulled by hand or crawler tractor.
- Pilot Lines: The finger line, once in place, is used to pull the pilot line which is a larger synthetic rope or small steel line. This requires a vehicle at each side of the pulling area, a Bullwheel tensioner truck doing the pulling of the pilot line, and a drum puller truck on the other side holding the reel.
- Conductor: Using the pilot line, the conductor is pulled through. Other activities may include offset clipping if suspension insulators are not plumb, or splicing together two reels of conductor. Once complete, the traveler equipment will be removed.
- Tensioning: After the conductor is completely strung through a section, the section is tensioned to comply with design specifications. Once the conductor has been tensioned or loosened to meet the appropriate sag specification given the ambient temperature, the dead-end clamps will be tightened.

Grounding. Ground rods will be hammered into the earth with a jackhammer device attached to a small excavator (such as a Bobcat). Typically, the rods are 8 to 12 feet long and can be longer if needed by joining multiple rods. For the 34.5kV wood poles, a 3-foot square by 2-foot-deep area will be excavated to expose the ground rod for connection to the plant's grounding grid. The poles can then be connected by laying in ground wire below grade to connect to the ground grid via trenching. Ground rods can be connected to the pole or in the case of the steel pole, to the anchor bolts. The 230kV towers may be connected to the overall plant ground grid or remain independent.

It is expected that an area of approximately 100 feet by 150 feet will be required at each 230kV tower location for use as temporary laydown or as a staging area for equipment, towers, and hardware. These temporary layown or staging areas will be located entirely within the 300-foot wide gen-tie ROW area. In general, little to no grading is expected to be required for these areas.

Typical equipment expected to be used for transmission line construction includes: (1) backhoe, (2) truck-mounted tower hole auger, (3) forklift, (4) crane, (5) line truck with air compressor, (6) various pickup and flatbed trucks, (7) conductor reel and tower trailers, (8) bucket trucks, and (9) truck- mounted tensioner and puller.

Onsite substation construction will consist of site grading, concrete equipment foundation forming and pouring, crane-placed electrical and structural equipment, underground and overhead cabling and cable termination, ground grid trenching and termination, control building erection, and installation of all associated systems including, but not limited to HVAC, distribution panels, lighting, communication and control equipment, and lightening protection.

4.11 Aviation Lighting

There are several airport-related operations within 25 miles of the Project site including: Hidden Hills Airport (located 3.5 miles south); Sandy Valley Airport (located 22 miles southeast); Chicken

Ranch Airport (located 5 miles west); and Calvada Meadows Airport (located 12 miles northwest in Pahrump).

Federal Aviation Administration (FAA) Federal Regulation Title 14 Part 77 establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for:

- Evaluating the effect of the construction or alteration on operating procedures
- Determining the potential hazardous effect of the proposed construction on air navigation
- Identifying mitigating measures to enhance safe air navigation
- Charting of new objects.

Although the Project may be exempt since it does not propose structures above 200 feet in height, further consultation with the airports will be conducted and all required FAA notices will be filed.

4.12 Site Stabilization, Protection, and Reclamation Practices

4.12.1 Erosion and Sediment Control Measures

Appropriate water erosion and dust-control measures will be required to prevent an increased dust and sediment load to ephemeral washes around the construction site. It will be mulched or composted on site to assist in erosion control and limit waste disposal. In some areas to be graded that lie outside of the solar field, native vegetation may be harvested for replanting to augment soil stabilization.

Soil stabilization measures will be used to prevent soil being detached by storm water runoff. The Applicant will employ BMPs to protect the soil surface by covering or binding soil particles. The Project will incorporate erosion-control measures required by regulatory agency permits and contract documents as well as other measures selected by the contractor. Site-specific BMPs will be designed by the contractor, and associated figures are to be included in the final Project Storm Water Pollution Prevention Plan (SWPPP).

Sediment controls are intended to complement and enhance selected erosion control measures and reduce sediment discharges from active construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. The Project will incorporate sediment control measures required by regulatory agency permits and contract documents as well as other measures selected by the contractor. The Project will implement the practices in the SWPPP.

4.12.2 Dust Control

The Applicant will use water to control dust to comply with Nye County dust control requirements. Where water is insufficient to control dust, soil stabilizers approved by BLM and USFWS, will be used within the fenced solar field to control dust to County standards. The BLM has allowed the use of several dust palliatives on other projects within the Southern Nevada District. If dust palliatives are used in place of water for the Project, the total amount of water needed during construction would be reduced. The Applicant may opt to use such palliatives, which have been identified by the BLM Southern Nevada District Office in conjunction with the USFWS as suitable for experimental use (within the Southern Nevada District) and in strict coordination with the Southern Nevada District Office. The soil binder/dust palliatives that are proposed for the Project are:

- SRB 1000
- For non-traffic areas on sandier/rockier soils: Pas-Tex Soil Stabalizer
- For non-traffic areas on finer soils: Formulated Soil Binder-1000 (FSB-1000)
- For roads and heavy traffic areas: Soil Cement

4.13 Construction Water Usage

The Project may include groundwater wells or may transport water to provide construction water, fire protection water, and other operational water supply requirements. The primary use of the water will be for dust control.

The project has prepared a Water Supply Assessment and proposes to obtain short-term leases from existing water rights owners in the area. Water will either be trucked to the site or the point of use may be changed by drilling a well on-site. All permits required by the Nevada State Engineer will be obtained.

4.14 Rehabilitation and Decommissioning

4.14.1 Site Stabilization, Protection, and Reclamation

During construction, appropriate water erosion and dust-control measures would be implemented to prevent an increased dust and sediment load to ephemeral washes around the construction site and to comply with Nye County dust control requirements. Dust during construction would be controlled and minimized by applying water and/or BLM-approved palliatives. If palliatives are used, the Applicant would contribute funds to a BLM study to understand the effects of dust palliatives on the health of desert tortoises.

The Applicant would employ BMPs to protect the soil surface by covering or binding soil particles. The Project would incorporate erosion-control measures required by regulatory agency permits

and contract documents as well as other measures selected by the contractor. Project-specific BMPs would be designed by the contractor and included in the Project SWPPP.

The Applicant would prepare a Site Restoration Plan. This plan would be implemented immediately after construction for the areas that are temporarily disturbed, such as portions of the transmission line route that involve disturbance.

4.14.2 Decommissioning

The Project facilities have an expected life of 30 years or more. The Applicant will prepare a Decommissioning and Reclamation Plan. In order to ensure that the permanent closure of the facility does not have an adverse effect, the plan will be developed at least 6 months prior to commencement of site closure activities. The plan will be developed in coordination with the BLM, with input from other agencies as appropriate. The plan will address future land use plans, removal of hazardous materials, panel array recycling, battery removal/disposal, impacts and mitigation associated with closure activities, schedule of closure activities, equipment to remain on the site, and conformance of the plan with applicable regulatory requirements and resource plans. In addition, the plan will include rehabilitation for areas that are permanently disturbed from operation of the Project.

SECTION 5

Related Facilities and Systems

5.1 Transmission System Interconnect

5.1.1 Proposed Transmission System

The Project will include the construction of approximately 5-mile 230kV gen-tie line for interconnection to the GLW Gamebird Substation (**Figure 1-1**). The overhead 230kV transmission line will be installed on steel, wood or concrete structures up to approximately 125 feet above grade with 18 foot spacing between conductors and minimum ground clearance of 28 feet per NESC (National Electrical Safety Code-2012) requirements. The 230kV transmission towers may be either the monopole type or "H-frame" to support interconnection to the transmission system.

5.1.2 Ancillary Facilities

5.1.2.1 Interconnection

The Project will connect into the GLW transmission system via the GLW Gamebird Substation.

5.1.3 Status of Power Purchase Agreements

The Applicant intends to sell power from the facility in accordance with a PPA to a potential offtaker.

5.1.4 Status of Interconnect Agreement

The Applicant prepared an application for interconnection to the CAISO and review of this application began in 2020.

5.1.5 General Design and Construction Standards

The Project will be designed in accordance with federal and industrial standards including American Society of Mechanical Engineers, National Electrical Code (NEC, 2008), International Energy Conservation Code (IECC, 2006), International Building Code (IBC, 2006), Uniform Plumbing Code (UPC, 2006), Uniform Mechanical Code (UMC, 2006), National Fire Protection Association and Occupational Safety and Health Administration (OSHA).

Construction will be in accordance with the federal codes listed above and all applicable state and local codes.

5.2 Gas Supply Systems

The Project will not require a natural gas supply system.

5.3 Other Related Systems

5.3.1 Communication System Requirements during Construction and Operation

Multiple communication systems will be used for construction and operation. Hard-wired (land-line) systems required for operation communications will installed as part of the electrical construction activities. These items will include telephone, fiber optics, and T1 internet. The Applicant expects to utilize existing wired or wireless telecommunications facilities. In the event that these facilities are not available in the Project vicinity, The Applicant would supplement with small aperture (less than one meter) satellite communications gear.

5.3.2 Project Access Road

The access way will be graded compacted earth and will be used for delivery of all Project components, and will be used by workers traveling to the site during construction. If determined necessary by the Project, for dust control purposes, the access way may be upgraded to aggregate or paved surface.

Construction access roadbeds will typically be 20-60 feet wide. A stabilized entrance/exit will be provided to clean vehicle wheels prior to exiting the construction area. It is expected that most construction staff and workers will come daily to the jobsite from within Nye and Clark Counties.

SECTION 6

Operation and Maintenance

6.1 Operations Workforce and Equipment

The Project will require a workforce of up to 10 FTE positions (or personnel hours totaling 10 FTE positions). This workforce will include administrative and management personnel, operators, and security and maintenance personnel. Maintenance and administrative staff typically work 8-hour days, Monday through Friday. During periods when non-routine maintenance or major repairs are in progress, the maintenance force will typically work evenings when the solar plant is naturally offline.

This workforce will be based at the O&M building. Employees will be onsite to maintain equipment and provide security. Operation and maintenance will require the use of vehicles including pick-up trucks and trucks and equipment for PV panel washing.

Operation and maintenance will require the use of vehicles and equipment including trucks for panel washing and crane trucks for minor equipment maintenance. Additional maintenance equipment will include forklifts, manlifts, and chemical application equipment for weed abatement and soil stabilizer treatment in the bioremediation area. Pick-up trucks will be in daily use on the site.

At designated intervals, approximately every 10 to 15 years, major equipment maintenance will be performed. On occasions, large heavy-haul transport equipment, including cranes, will be brought on site. No heavy equipment will be used during normal plant operation.

6.2 Operation and Maintenance Needs

A solar PV project uses no process water, gas, or fuels for the power generation process. The maintenance protocol is mainly routine inspections. The frequency and type of maintenance is described in **Table 6-1**. During the first year of operation, the frequency of inspections would be increased to address settling and electrical termination torque (e.g., for year 1, inspections shown as semi-annually are performed quarterly, inspections shown as annual are performed semi-annually). At designated intervals, approximately every 10 to 15 years, major equipment maintenance would be performed.

Prior to Project financing and commencement of construction, long-term maintenance schedules will be developed to include periodic maintenance and overhauls in accordance with manufacturer recommendations.

6.2.1 Periodic Maintenance

Periodic routine maintenance comprises monthly, quarterly, semi-annual and annual inspections and service. A solar PV project uses no process water, gas, or fuels for the power generation process. The maintenance protocol is mainly routine inspections. The frequency and type of maintenance is described below by equipment type. During the first year of operation, the frequency of inspections will be increased to address settling and electrical termination torque (e.g., for year 1, inspections shown as semi-annually are performed quarterly, inspections shown as annual are performed semi-annually). Routine maintenance procedures are listed in **Table 6-1.**

TABLE 6-1

Routine Maintenance Protocol

Equipment	Maintenance Interval	Task
PV Modules	Quarterly	• Visually inspect panels for breakage and secure mounting • Visually inspect modules for discoloration • Visually inspect wiring for connections and secure mounting • Visually inspect mounting structure for rust and erosion around foundations • Manually clean localized debris from bird droppings, etc.
	Semi-Annually	Clean modules if determined necessary
Inverters	Semi-Annually	Perform temperature checks on breakers and electrical terminations
	Annually	• Visual inspection of all major components and wiring harnesses for discoloration or damage • Measure all low voltage power supply levels • Inspect/remove any dust/debris inside cabinet • Inspect door seals • Check proper fan operation • Inspect and clean (replace if necessary) filters • Check electrical termination torque • Check the operation of all safety devices (e-stop, door switches, ground fault detection) • Check all nuts, bolts and connections for torque and heat discoloration • Calibrate control board and sensors • Inspect air conditioning units for proper operation
Medium voltage transformers	Semi-Annually	• Perform temperature check • Inspect door seals • Record all gauge readings • Clean any dirt/debris from low voltage compartment
Substation transformers	Semi-Annually	• Inspect access doors/seals • Inspect electronics enclosure and sensor wiring

TABLE 6-1

Routine Maintenance Protocol

Equipment	Maintenance Interval	Task
	Annually	• Record all gauge readings • Inspect fans for proper operation • Calibrate temperature and pressure sensors • Pull oil sample for oil screening and dissolved gas analysis
Overhead transmission lines	Annually (and after heavy rains)	• Inspect guy wires and tower angle • Visual inspection of supports/insulators • Visual inspection for discoloration at terminations
Roadway	Annually (and after heavy rains)	• Inspect access ways and roads that cross drainage paths for erosion
Vegetation	Semi-Annually	• Inspect for localized vegetation control to restrict height to less than 12 inches to address faster growth vegetation • Apply herbicides as necessary to control noxious weeds
	Every 3 years	• Mowing as required to reduce vegetation height to 9 inches
Water Wells	Annually	• Visual inspection • Pressure test • Periodic water quality testing if required
O&M Building	Semi-Annually	• Check smoke detectors
	Annually	• Check weather stripping and door/window operation • Check emergency lighting • Inspect electrical service panel
Backup Power	Annually	• Visually inspect backup power system • Perform functional test of backup power system
Fencing	Annually (and after heavy rains)	• Inspect fence or vandalism and erosion at base

SECTION 7

Environmental Considerations

7.1 General Description of Site Characteristics and Potential Environmental Issues

The Project site was selected in consideration of avoiding or minimizing environmental impacts. The Project site is located in close proximity to multiple roads and transmission lines. Good land management practice would encourage location of facilities, such as solar energy generating facilities, near such infrastructure.

The sections that follow include a preliminary discussion of potential environmental issues associated with the Project site. Sources of information include the Las Vegas Resource Management Plan, BLM's Solar Programmatic Environmental Impact Statement (Solar PEIS), the Solar Energy Environmental Mapper Web-Based GIS Program, and personal communication with the BLM (BLM 1998, BLM/DOE 2010, BLM/DOE 2012, and BLM 2016a and 2016b). The Applicant will coordinate with the BLM and other federal, state, and local agencies to more fully understand potential impacts from development at the Project site. The Applicant will conduct additional surveys and prepare relevant reports to facilitate environmental clearance of all areas considered in this POD (and update the POD accordingly). These may include but are not limited to biological and cultural resources surveys and possible visual resources assessments, depending on the presence of suitable key observation points.

7.1.1 Recreation

In accordance with the existing Las Vegas Resource Management Plan, OHV use in the surrounding area has been designated as "limited to existing roads and trails." The Project area is not located within a BLM Las Vegas Valley Special Recreation Management Area (SRMA). The Applicant will work with the BLM to more fully understand potential impacts to recreation and if necessary, determine appropriate Project design and mitigation measures to address impacts (BLM 1998). Additionally, the Applicant has communicated with various members of the local (Pahrump area) OHV community to better understand the OHV roads and trails in the project area that are most important to them. Based on such communication, the Applicant is preserving OHV roads and trails which cross through the southwestern portion of the project site. See **Figure 1-2A**, which shows how the project site plan accommodates those OHV roads and trails.

7.1.2 Soil Resources

Preliminary review of available information for the Project area indicates that the soils are of the Commski-Oldspan-Lastchance Association, which consist of mainly of sand and fine silt and are categorized as low to lowest for wind erosion susceptibility (USDA, 2011). Impacts on soil

resources would occur mainly as a result of ground-disturbing activities (e.g., grading, excavating, and drilling), especially during the Project construction phase. Impacts could include soil compaction, soil horizon mixing, soil erosion and deposition by wind, soil erosion by water and surface runoff, sedimentation, and soil contamination. The Applicant will implement industry standard BMPs and mitigation measure during all Project phases to avoid and minimize impacts to soil resources and associated impacts to air quality, water quality and vegetation.

7.1.3 Water Resources

The Project is located in Nevada's Pahrump Valley (Basin 162). This basin, located in Hydrographic Region 10 (Central Region Basin) has a perennial yield of approximately 20,000 acre-feet annually (AFA). The appropriated annual active duty of the Basin currently totals 59,649.49 AFA showing an over appropriation of the perennial yield by 39,649.49 AFA.

Approximately 59% of the appropriated annual duty (both active and pending) is permitted, or approximately 37,191.17 acre-feet, and 23% is certificated, or approximately 14,269.07 acre-feet, 13% is relinquished in portion, and the remaining 5% is ready for action. A Water Supply Assessment is currently being prepared and will be available by the end of September 2022.

The majority of active water rights in the basin have not yet been Certificated, and annual pumpage estimated by the Nevada State Engineer currently falls well within the basin's perennial yield of 20,000 AFA. This may also indicate most of the water right permits issued for irrigation purposes are not supplemental to surface water sources.

7.1.4 Biological Resources and Special Status Species

The Project area is located within the Mojave and Southern desert shrub vegetation communities (BLM 1998). The vegetation on the site is comprised of common communities that are abundant and well- represented in the region. The Project would modify approximately 5,124 acres that are largely undeveloped. The Applicant has conducted biological surveys which have been provided to the BLM.

7.1.5 Visual Resources

The Project area is located in an area of nearly equally medium and low scenic quality (BLM 1998; 2014c, 416). In accordance with the existing Las Vegas Resource Management Plan, the area is managed as Visual Resource Management Class III by the BLM which allows for a moderate level of change to the characteristic landscape. The project is preparing a visual resource report including visual simulations from Key Observation Points (KOP) approved by BLM.

7.1.6 Cultural Resources and Native American Concerns

The Project would modify approximately 5,124 acres that are currently undeveloped. Because this area could contain cultural resources, the Applicant has conducted cultural resources surveys to determine whether any prehistoric or historic archaeological sites are present on the Project

site. Consultation in accordance with Section 106 of the National Historic Preservation Act will also be completed by the BLM. It is not known if the Project area contains sites important to Native American tribes or groups having ties to the Project area. Tribal consultation will be led by the BLM and informed by the cultural resource survey work described above.

7.1.7 BLM Herd Management Areas

Under the direction of the 1971 Wild Free Roaming Horses and Burros Act, the BLM evaluates and monitors Herd Management Areas (HMAs). The Project site is not located within an active HMA. The closest HMA is the Wheeler Pass HMA, located north of the proposed project, north of State Route 160, less than 1 mile from the project boundary. The proposed gen-tie line alternatives intersect the Wheeler Pass HMA to the north of the project boundary. The Johnnie HMA is located approximately 3 miles north from the proposed project boundary and is intersected by a proposed gen-tie alternative.

7.1.8 Applicant Proposed Measures

Applicant Proposed Measures (APMs) include Project design and equipment selection measures proposed as part of the Project to reduce impacts to the surrounding environment. As evidenced by other projects on BLM-administered lands, the Applicant will make a substantial effort to minimize potential impacts to sensitive resources. Such measures are implemented through the design process, to minimize such impacts or avoid them altogether, and also through the development of site-specific management and operation plans. The Applicant will comply with all resource protection measures identified in permit conditions and mitigation plans developed as required by permits and authorizations.

The following APMs are proposed for the construction, operations, and decommissioning of the Project:

APM	Measure	Description
Lands and Realty		
Lands 1	Coordination with airport operators	For solar energy and related transmission facilities, the hazards associated with the heights of facilities and the glare from reflective surfaces shall be evaluated through coordination with local airport operators and filing of all notices required by the FAA. Proposed construction of any facility that is taller than 200 ft (61 m) must be submitted to the Federal Aviation Administration (FAA) for evaluation of safety hazards.
Soil Resources and Geologic Hazards		
Soils 1	Geotechnical Engineering and Hydrology Studies	Applicant shall conduct (as necessary) geotechnical engineering and hydrology studies to characterize site conditions related to drainage patterns, soils, vegetation, surface water bodies, land subsidence, and steep or unstable slopes. The results of such studies shall be

APM	Measure	Description
		compiled into reports to aid in the permitting, design, and construction of the Project.
Soils 2	Minimize Disturbances	The footprint of disturbed areas—including the number and size/length of roads, fences, borrow areas, and laydown and staging areas—shall be minimized. The boundaries of disturbed area footprints shall be clearly delineated on the ground (e.g., through the use of construction fencing).
Soils 3	Road Design	Roads shall be designed on the basis of local meteorological conditions, soil moisture, and erosion potential in order to avoid erosion and changes in surface water runoff.
Soils 4	Minimize Open Areas	Construction shall be conducted in stages to limit the areas of exposed soil at any given time. For example, only land that will be actively under construction in the near term (e.g., within the next 6 to 12 months) should be cleared of vegetation.
Soils 5	Speed Limits	The speed of vehicles and equipment on unpaved surfaces shall be controlled to reduce dust emissions.
Soils 6	Spill Prevention Plan	A spill prevention plan to identify sources, locations, and quantities of potential chemical releases (through spills, leaks, or fires) and define response measures and notification requirements shall be developed and followed to reduce the potential for soil contamination. The plan shall also identify individuals and their responsibilities for implementing the plan.
Soils 7	Temporary Stabilization	Temporary stabilization of disturbed areas that are not actively under construction shall occur throughout the construction phase. Stabilization may be achieved through watering and building of a stable crust, use of BLM-approved stabilizers, or other methods.
Soils 8	Road Stabilization	Water or other stabilizing agents shall be used to wet roads in active construction areas and laydown areas in order to minimize the windblown erosion of soil.
Soils 9	Restoration Plan	Native plant communities in temporarily disturbed areas (e.g., laydown areas) shall be restored by natural revegetation or by seeding and transplanting (using weed-free native grasses, forbs, and shrubs), on the basis of BLM recommendations, as early as possible once decommissioning is completed.
Soils 10	Drainage, Erosion, and Sedimentation Control Plan	A Drainage, Erosion, and Sedimentation Control Plan shall be developed that ensures protection of water quality and soil resources, demonstrates no increase in off-site flooding potential, and includes provisions for stormwater and sediment retention on the project site. The plan shall identify site surface water runoff patterns and develop mitigation measures that prevent excessive and unnatural soil deposition and erosion throughout and

APM	Measure	Description
		downslope of the Project site and Project-related construction areas.
Soils 11	Groundwater Monitoring Plan	If the Project decides to use groundwater, the Project shall develop and implement a groundwater monitoring plan that includes monitoring the effects of groundwater withdrawal for project uses, of vegetation restoration and dust control uses during decommissioning, and of aquifer recovery after project decommissioning.
Soils 12	Waste Management	Good waste management practices shall be adopted for handling, storing, and disposing of wastes generated by a construction project to prevent the release of waste materials into stormwater discharges. Waste management includes the following: spill prevention and control, construction debris and litter management, concrete waste management, and liquid waste management.
Biological Review		
Bio 1	Qualified Biologist	Project developers shall designate 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, such as special status species and important habitats.
Bio 2	Worker Training	All personnel shall be instructed on the identification and protection of ecological resources (especially for special status species), including knowledge of required design features. Workers must be aware that only qualified biologists are permitted to handle listed species according to specialized protocols approved by the USFWS. Workers shall not approach wildlife for photographs or feed wildlife.
Bio 3	Hazardous Materials Storage	Design features for hazardous materials and waste management regarding refueling, equipment maintenance, and spill prevention and response shall be applied to reduce the potential for impacts on ecological resources.
Bio 4	Minimize Hiding Opportunities	The number of areas where wildlife could hide or be trapped (e.g., open sheds, pits, uncovered basins, and laydown areas) shall be minimized. For example, an uncovered pipe that has been placed in a trench should be capped at the end of each workday to prevent animals from entering the pipe. If a special status species is discovered inside a component, that component must not be moved, or, if necessary, moved only to remove the animal from the path of activity, until the animal has escaped.

APM	Measure	Description
Bio 5	Buffer Zones	During all Project phases, buffer zones shall be established around sensitive habitats, and Project facilities and activities should be excluded or modified within those areas, to the extent practicable.
Bio 6	Pest Control Plan	A Pest Control Plan should be developed that identifies management practices to minimize increases in nuisance animals and pests in the operations and maintenance building and in areas such as the project substation, particularly those individuals and species that would affect human health and safety. The plan would identify nuisance and pest species that are likely to occur in the area, risks associated with these species, species-specific control measures, and monitoring requirements.
Bio 7	Integrated Vegetation Management Plan	An Integrated Vegetation Management Plan shall be developed that is consistent with applicable regulations and agency policies for the control of noxious weeds and invasive plant species. The plan shall also discuss reestablishment of vegetation in temporarily disturbed areas and transplantation and protection of special status or protected plants.
Bio 8	Ecological Resources Mitigation and Monitoring Plan	An Ecological Resources Mitigation and Monitoring Plan shall be developed to avoid, minimize, or mitigate adverse impacts on important ecological resources. The Plan shall discuss the following elements: • Revegetation and soil stabilization • Measures to protect birds, raptors, and bats • Measures to mitigate and monitor impacts on special stats species • Monitoring the potential for increase in predation of special status species (e.g. desert tortoise) from ravens and other species that are attracted to developed areas and development of a Trash Abatement Program • Clearing and translocation of special status species, including pre-construction survey protocols
Bio 9	Open Trenches	Because open trenches could impede the seasonal movements of large game animals and alter their distribution, they shall be backfilled as quickly as is possible. Open trenches could also entrap smaller animals; therefore, escape ramps shall be installed along open trench segments.
Bio 10	Lighting	Lighting shall be designed to provide the minimum illumination needed to achieve safety and security objectives. It shall be shielded and orientated to focus illumination on the desired areas and to minimize or eliminate lighting of off-site areas or the sky. Lights shall be designed to utilize motion sensors so that lights do not stay on any longer than necessary at night. All unnecessary lighting shall be

APM	Measure	Description
		turned off at night to limit attracting migratory birds or special status species
Bio 11	Decommissioning and Reclamation Plan	A Decommissioning and Reclamation Plan that is specific to the Project shall be developed approved by the BLM, and implemented and shall include the following elements: • The plan shall contain an adaptive management component that allows for the incorporation of lessons learned from monitoring data. • The plan shall require that land surfaces be returned to pre-development contours to the greatest extent feasible immediately following decommissioning. • The plan shall be designed to expedite the reestablishment of vegetation and require restoration to be completed as soon as practicable. • To ensure rapid and successful reestablishment efforts, the plan shall specify site-specific measurable success criteria, including target dates, which shall be developed in coordination with the BLM and be required to be met by the operator. • Vegetation reestablishment efforts shall continue until all success criteria have been met. • • Bonding to cover the full cost of vegetation reestablishment shall be required.
Air Quality		
Air 1	Emission Standards	All heavy equipment shall meet emission standards specified in the state code of regulations, and routine preventive maintenance, including tune-ups to meet the manufacturer's specifications, shall be implemented to ensure efficient combustion and minimal emissions.
Air 2	Dust Minimization	All unpaved roads, disturbed areas (e.g., areas of scraping, excavation, backfilling, grading, and compacting), and loose materials generated during Project activities shall be watered as frequently as necessary to minimize fugitive dust generation. Travel shall be limited to stabilized roads. All vehicles that transport loose materials as they travel on public roads shall be covered, and their loads should be sufficiently wet and kept below the freeboard of the truck.
Air 3	Trackout	Visible trackout or runoff dirt on public roadways from the construction site shall be cleaned (e.g., through street vacuum sweeping).
Noise		

APM	Measure	Description
Noise 1	Noise Reduction Measures	Siting of stationary construction equipment (e.g., compressors and generators) shall be far from nearby residences and other sensitive receptors. All equipment shall be maintained in good working order in accordance with manufacturers' specifications. For example, suitable mufflers and/or air-inlet silencers shall be installed on all internal combustion engines (ICEs) and certain compressor components.
Noise 2	Noise Hotline	A noise complaint process and hotline for the surrounding communities shall be implemented, including documentation, investigation, evaluation, and resolution of all legitimate project-related noise complaints.
Paleontological Resources		
Paleo 1	Paleontological Resources Management Plan	If paleontological resources are present at the site or if areas with a high potential to contain paleontological material have been identified, a paleontological resources management plan shall be developed. This shall include a mitigation plan; mitigation may include avoidance, removal of fossils (data recovery), stabilization, monitoring, use of protective barriers and signs, or use of other physical or administrative protection measures. The paleontological resources management plan shall also identify measures to prevent potential looting/vandalism or erosion impacts and address the education of workers and the public to make them aware of the consequences of unauthorized collection of fossils on public land.
Cultural Resources		
Cultural 1	Management Practices	The use of management practices, such as training/education programs for workers and the public, shall be implemented to reduce occurrences of human- related disturbances to nearby cultural sites. The specifics of these management practices shall be established in Project- specific consultations between the applicant and the BLM as well as with the SHPO and Tribes, as appropriate.
Cultural 2	Unanticipated Discoveries Plan	An Unanticipated Discoveries Plan shall be developed by the Project in coordination with the BLM, SHPO, and required federally recognized Tribes.
Hazardous Materials		
Haz 1	Fire Management and Protection Plan	A Fire Management and Protection Plan shall be developed to implement measures to minimize the potential for fires associated with substances used and stored at the site. The flammability of the specific HTF used at the facility shall be considered.
Haz 2	Hazardous Materials and Waste Management Plan	A Hazardous Materials and Waste Management Plan shall address the selection, transport, storage, and use of all hazardous materials needed for construction, operation, and decommissioning of the

APM	Measure	Description
		facility for local emergency response and public safety authorities and for the designated BLM land manager, and it shall address the characterization, on-site storage, recycling, and disposal of all resulting wastes.
Haz 3	Spill Prevention and Emergency Response Plan	A comprehensive Spill Prevention and Emergency Response Plan shall be developed for the facility.
Haz 4	Traffic Management Plan	A Traffic Management Plan shall be prepared for the site access roads to control hazards that could result from increased truck traffic (most likely during construction or decommissioning), to ensure that traffic flow would not be adversely affected and that specific issues of concern (e.g., the locations of 33 school bus routes and stops) are identified and addressed.

SECTION 8

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FIGURE 1-1

SITE MAP

Attached.

FIGURE 1-2A

PRELIMINARY SITE PLAN

Attached.

FIGURE 1-2B

PRELIMINARY SECTIONS

Attached.

FIGURE 1-3A

PRELIMINARY GEN-TIE PLAN

Attached.

FIGURE 1-3B

PRELIMINARY GEN-TIE PLAN (ALTERNATIVE)

Attached.

FIGURE 1-4

O&M, MOVE-ON, ENERGY STORAGE SYSTEM, AND ONSITE SUBSTATION LAYOUT

Attached.

FIGURE 1-5

TYPICAL COLLECTION LINE DIRECT BURIED & TRENCH DETAILS

Attached.

FIGURE 1-6

TYPICAL GEN-TIE & COLLECTION LINE POLES

Attached.

FIGURE 1-7

PRELIMINARY SUBSTATION PLAN

Attached.

FIGURE 1-8

PRELIMINARY SUBSTATION SECTION

Attached.

FIGURE 1-9

GENERAL ARRANGEMENT OPERATION & MAINTENANCE AREA

Attached.

FIGURE 1-10

OPERATION & MAINTENANCE BUILDING ELEVATIONS

Attached.

FIGURE 1-11

METEOROLOGICAL MONITORING SYSTEMS

Attached.

APPENDIX A

LEGAL LAND DESCRIPTION

Overall Solar Project Area (Minus Gen-tie Line and Access Road) (Should be included in Federal Register) Legal Description

Mount Diablo Meridian, Nevada

Township 21 S, Range 54 E	
Section 13	SW ¼ SW ¼ , SE ¼ SW ¼, S ½ NW ¼ SW ¼ , S ½ NE ¼ SW ¼ , SW ¼ SE ¼, SE ¼ SE ¼ , S ½ NW ¼ SE ¼, and S ½ NE ¼ SE ¼
Section 14	S ½ NE ¼ SE ¼, SE ¼ SE ¼ , E ½ SW ¼ SE ¼, and SE ¼ NW ¼ SE ¼
Section 23	NE ¼ NE ¼ , SE ¼ NE ¼ , E ½ NW ¼ NE ¼ , E ½ SW ¼ NE ¼ , NE ¼ SE ¼ , SE ¼ SE ¼ , E ½ NW ¼ SE ¼, and E ½ SW ¼ SE ¼
Section 24	All
Section 25	All
Section 26	E ½ NE ¼ , E ½ NW ¼ NE ¼, E ½ SW¼ NE¼, and S ½
Section 35	All
Section 36	All
Township 22 S, Range 54 E	
Section 1	All
Section 2	All

Solar Field and Ancillary Facilities- Areas within Overall Solar Project Area (Minus Gen- tie Line and Access Road)

Mount Diablo Meridian, Nevada

Township 21 S, Range 54 E	
Section 13	SW ¼ SW ¼ , SE ¼ SW ¼, S ½ NW ¼ SW ¼ , S ½ NE ¼ SW ¼ , SW ¼ SE ¼, SE ¼ SE ¼ , S ½ NW ¼ SE ¼, and S ½ NE ¼ SE ¼

Section 14	S ½ NE ¼ SE ¼, SE ¼ SE ¼ , E ½ SW ¼ SE ¼, and SE ¼ NW ¼ SE ¼
Section 23	NE ¼ NE ¼ , SE ¼ NE ¼ , E ½ NW ¼ NE ¼ , E ½ SW ¼ NE ¼ , NE ¼ SE ¼ , SE ¼ SE ¼ , E ½ NW ¼ SE ¼, and E ½ SW ¼ SE ¼
Section 24	All
Section 25	All
Section 26	E ½ NE ¼ , E ½ NW ¼ NE ¼, E ½ SW¼ NE ¼, and S ½
Section 35	All
Section 36	All
Township 22 S, Range 54 E	
Section 1	All
Section 2	All

Project Access (Should be Included in Federal Register)

Per POD page 3-6 access is 230 ft long by 80 ft wide with a 180 feet wide flare at the driveway approach totaling .5 acres.

Mount Diablo Meridian, Nevada

Township 21 S, Range 55 E	
Section 18	Lot 3

230 kV Transmission Line ROW – Preferred (Should be included in Federal Register)

Mount Diablo Meridian, Nevada

Township 20 S, Range 54 E	
Sections 35 and 36	S ½ SW ¼ SW ¼
Township 21 S, Range 54 E	
Section 1	W ½ SW ¼ SW ¼ and W ½ NW ¼ SW ¼
Section 2	Lot 8
Section 12	W1/2NW1/4NW1/4, W1/2SW1/4NW1/4, W1/2NW1/4SW1/4, and W1/2SW1/4SW1/4
Section 13	W1/2NW1/4 NW1/4, W1/2SW1/4 NW1/4, and W1/2NW1/4 SW1/4

230 kV Transmission Line Temporary Stringing Areas – Preferred (Should be Included in Federal Register)

Mount Diablo Meridian, Nevada

Township 20 S, Range 54 E	
Section 35	S ½ SW ¼ SW ¼
Township 21 S, Range 54 E	
Section 1	W ½ SW ¼ SW ¼ and W ½ NW ¼ SW ¼

230 kV Transmission Line ROW – Alternative (Should be included in Federal Register)

Mount Diablo Meridian, Nevada

Township 21 S, Range 54 E	
Section 12	W ½ SW ¼ NW ¼ SW ¼ and W ½ SW ¼ SW ¼
Section 13	W1/2NW1/4 NW1/4, W1/2SW1/4 NW1/4 and W1/2NW1/4 SW1/4

230 kV Transmission Line Temporary Stringing Areas – Alternative (Should be included in Federal Register)

Mount Diablo Meridian, Nevada

Township 21 S, Range 54 E	
Section 12	SW ¼ NW ¼ SW ¼ and N ½ NW ¼ SW ¼ SW ¼

O&M Area (within Overall Solar Project Area)

Mount Diablo Meridian, Nevada

Township 21 S, Range 54 E	
Section 13	SW ¼ SW ¼ SE ¼ and E ½ SE ¼ SE ¼ SW ¼

Onsite Substation (within Overall Solar Project Area)

Mount Diablo Meridian, Nevada

Township 21 S, Range 54 E	
Section 13	SW ¼ SW ¼ SW ¼
Section 14	E ½ SE ¼ SE ¼ SE ¼
Section 23	E ½ NE ¼ NE ¼ NE ¼
Section 24	NW ¼ NW ¼ NW ¼

Temporary Staging Area (within Overall Solar Project Area for general construction activities)

Mount Diablo Meridian, Nevada

Township 21 S, Range 54 E	
Section 13	SE ¼ SW ¼ SE ¼ and S ½ SE ¼ SE ¼
Section 24	NE ¼ NE ¼ NE ¼
Section 26	NW ¼ SW ¼, NE ¼ SW ¼ and NW ¼ SE ¼
Township 22 S, Range 54 E	
Section 2	Lot 8, W ½ and W ½ E ½ Lot 9, W ½ and W ½ E ½ SW ¼ NW ¼, NW ¼ NW ¼ SW ¼ and W ½ NE ¼ NW ¼ SW ¼

APPENDIX B

MASTER TITLE PLAT

Attached.