2.0 PROJECT DESCRIPTION

2.1 PROJECT SETTING

The project site is located in the Antelope Valley in the northern portion of Los Angeles County, completely within the City of Lancaster. All of the gen-tie routes, with the exception of Gen-tie Route 2, are located partially within unincorporated Los Angeles County. The project site consists of approximately 1,191 acres and is generally bounded by Avenue K, 105th Street West, 80th Street West and the California Aqueduct. The site slopes gently upward toward the adjacent foothills and is currently undeveloped. The surrounding land uses consist of similar solar generation facilities, SCE’s Antelope Substation, the Tehachapi Renewable 500 kV transmission line which traverses the area in a northwest-southeast orientation, and the Barren Ridge-Rinaldi 230 kV transmission line which traverses the area in a northeast-southwest orientation. In addition to the electrical generation and transmission uses, the area is rural in character and has multiple rural residential properties to the north of Avenue L; as well as a suburban style residential subdivision approximately 2,000 feet to the southeast of the project site.

2.1.1 Location

The project site falls within a portion of U.S. Geological Survey (USGS) topographic 7.5 minute San Bernardino Baseline and Meridian quadrangle map. The project site comprises all or portions of Township 6 North, Range 13 West, Section 5; Township 7 North, Range 13 West, Sections 17, 18, 19, 20, 28, 29, 30, 31, 32, and 33; and Township 7 North, Range 14 West, Sections 13, 14, 23, 24, 25, 26, and 36. Figure 2-1 shows the regional vicinity and Figure 2-2 shows the project vicinity and project site boundaries. The project site plan is depicted on Figures 2-3 through 2-8.

2.1.2 Existing Conditions and Land Uses

The City’s zoning ordinance allows solar facilities on property zoned RR-2.5 with a CUP. The project site is designated by the City’s General Plan as a mix of NU, UR, and C and is zoned RR-2.5 and SP. As such, the applicant has requested a GP and ZC to change the designations on the entire site to NU and the zoning to RR-2.5. Figure 3.9-1 in Section 3.9, Land Use, shows the current vicinity General Plan 2030 designation and zoning.
Figure 2-6
Project Site Plan-Conceptual

Legend
- Water Storage Tank
- Hydrant
- Gen-tie Route 1
- Gen-tie Route 2
- Access Road
- Existing Power Lines
- Bike Trail
- Landscaping
- Water of the State Delineated within the Project Area
- Non Disturbed Area Setbacks
- Entrance Point
- Fenceline
- Solar Array
Figure 2-8
Project Site Plan-Conceptual

Legend
- Gen-tie Route 1
- Gen-tie Route 2
- Gen-tie Route 3
- Gen-tie Route 4
- Gen-tie Route 5
- Gen-tie Route 6
- Existing Power Lines
- Switching Station
- Collector Substation
- street100k_1_logo07

2.2 PROJECT OVERVIEW

Sustainable Power Group LLC, also known as sPower (applicant), proposes to develop, own, and operate a 150 MW AC ground-mounted solar PV facility located in the City of Lancaster, California. The applicant has filed a CUP application with the City of Lancaster (CUP No. 14-10) for the proposed project to allow for the construction, operation, and maintenance of the facility. In addition, the proposed project would require a GPA (GPA 14-02) and ZC (ZC 14-02) to facilitate the proposed project.

The proposed project is anticipated to be constructed in three 50 MW sections. However, it is possible that the entire project would be built out at one time. Total construction time for the entire project site would be 24 months. Construction would consist of the following four phases:

1. Site Preparation – rolling, installation of internal roadways, and preparation for inverter pads and switching station(s).
2. Trenching.
3. PV Installation.
4. Gen-tie construction, bike path construction, and landscaping installation.

2.2.1 Site Acreage

The proposed project would be developed using multiple parcels of land listed in Table 2-1. As indicated in Table 2-2, the proposed project would permanently develop 1,085.14 acres out of 1,191.22 acres, or approximately 91.1% of the total parcel acreage (Figure 2-9). Additionally, approximately 7.08 acres would be temporarily disturbed during project construction, including gen-tie routes, temporary office, staging, and laydown areas (Table 2-2). Throughout this Draft EIR, these numbers are rounded to 1,085 acres permanent land disturbance for project facilities and 7 acres temporary construction-related disturbance. Total disturbance during construction would be approximately 1,092 acres (rounded from 1,092.22 acres shown in Table 2-2), including both temporary and permanent disturbances.

The following tables present information on APNs, parcel sizes, and total site disturbance:

**Table 2-1: Associated Parcel and Parcel Sizes**

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<th>Assessor’s Parcel Number (APN)</th>
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**Total: 85 APNs**

**1,191.22 acres**

Source: Stantec 2014
Antelope Substation

110th St W

130th St W

W Ave G-8

120th St W

W Ave G

125th St W

W Ave H

W Ave I

80th St W

85th St W

W Ave J

W Ave K

75th St W

70th St W

100th St W

105th St W

Legend

Gen-tie Route 1
Gen-tie Route 2
Gen-tie Route 3
Gen-tie Route 4
Gen-tie Route 5
Existing Power Lines
Waters of the State Delineated within the Project Area
Permanent Disturbance
Non Disturbed Area Setbacks
Solar Array
Switching Station
Collector Substation

Figure 2-9

Project Site Plan-Conceptual with Disturbance Area

Project: 185702885; Sources: Stantec 2014, Los Angeles County GIS. Created By: Kate Gross. Updated: 3/17/2015. Service Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Document Path: V:\1840\active\185702912_lancaster\gis\mxd\project_description\fig_2-4_lancaster_site_plan_disturbance.mxd
**Table 2-2: Summary of Disturbance Footprint**

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<td><strong>Total Site Disturbance</strong></td>
<td><em>(Permanent + Temp) = 1,092.22 acres</em></td>
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Notes: Calculations are based on CAD drawings received from sPower. Non Disturbed Areas include set-backs from washes and areas excluded due to slope. Temporary impacts include the gen-tie trenching and were calculated assuming a trench 36 inches wide and 42 inches deep. Permanent Disturbance includes all other permanent project components (new access roads, bike path, hydrants, inverters, panel arrays, new access, switching stations, and water storage tanks). Other Areas includes existing developed roadways, right-of-ways, and utility corridors that exist within the project site.

Source: Stantec 2014
2.3 PROPOSED PROJECT

The proposed 150 MW AC ground-mounted solar PV power facility project components would include access roads, solar modules, single-axis tracking or fixed-tilt systems, direct current (DC) to AC power inverters, medium voltage transformers, a medium voltage collection system, and interconnection switching stations as illustrated on Figures 2-3 through 2-8. The applicant has filed a CUP application (CUP No. 14-10) with the City of Lancaster to allow for the construction, operation, and maintenance of the proposed solar facility. The energy generated by the proposed project would be sold to public utilities, municipal utilities, or large private consumers of power. The energy generated by the proposed project would be interconnected to either SCE and/or LADWP infrastructure. The proposed project would have an operational lifespan of approximately 35 years.

2.3.1 Mechanical Components

To support the PV panels, the proposed project would utilize a single-axis tracking or fixed-tilt system designed to optimize energy production of the panels by ensuring proper orientation to the sun throughout the day and seasons. Figure 2-10 shows typical single-axis tracking and fixed-tilt systems.

The single-axis tracking and fixed-tilt systems are supported by metal piers or I-beams driven into the ground by a hydraulic machine. The solar panels would be comprised of individual panels approximately 3.5 feet wide and 5.5 feet long. The panels would have a 2-foot clearance from the ground, for a total module height of approximately 9 to 12 feet from the ground, depending on the technology selected.

The actual total number of PV modules would depend on the technology selected, optimization evaluation, and detailed design. The market conditions, economic considerations, and environmental factors would be taken into account during the detailed design process. The following PV module technologies, or equivalent, are under consideration as part of the proposed project:

- PV thin-film technology
- PV crystalline silicon technology
- Single-axis tracking module configuration
- Stationary fixed-tilt modular configuration

For the fixed-tilt configuration, the modules would be oriented toward the south and angled at a degree that would optimize solar resource efficiency. For the single-axis tracking configuration, the modules would rotate from east to west over the course of the day. During construction, the PV modules would be delivered to the project site to support the installation and construction schedule. At no time would the proposed project utilize off-site construction staging. The panels would be constructed of glass encasing crystalline silicon, polycrystalline silicon, or amorphous silicon with small quantities of copper–indium–gallium–selenide, cadmium–telluride, or other metal and non-metal materials within the silicon matrix. A plastic binding material and frame
would provide structural rigidity. The panels would be dark blue or black in color with minimal light reflection.

The PV panels would be self-contained, durably constructed units designed to withstand exposure to the elements for a period of 35 years or more. The solar modules utilized in the proposed project would be certified to comply with all current industry quality standards. Panels would be electrically connected to the grounding system of the solar facility in accordance with local and state codes and regulations. The final panel selection would be determined prior to construction.

Tracker design varies by manufacturer and facility type; single-axis tracking systems generally consist of a series of tracker panel rows with a drivetrain system mounted in a stationary tilted position. The number of rows within a solar panel block is based on the desired output from the panel as well as being limited by the drive system’s ability to move multiple panels (Figure 2-10). This row design is also determined by the amount of the desired solar output to the inverters.

As part of the proposed project, a controller, used to track the system throughout the day and keep the panels’ orientation as perpendicular to the sun’s rays as possible, may be needed. This is accomplished by either operating the motor driving the system or making the motor dormant, as the motor does not turn continuously. The controller accounts for daily and seasonal changes in the sun’s position. The controller is also used to position the panels during off-production periods, such as the nightly stow period and for maintenance. In the event of a serious weather event, the system would move the panels to the safest position to avoid damage.

Both the single-axis tracking and fixed-tilt facility layout is constrained by the need to access the interior rows of the panels by maintenance and emergency personnel. The proposed project’s panels would be separated by distances that would accommodate maintenance personnel traveling in trucks or other emergency vehicles. The preliminary design specifies that the distance between rows of the panels would be between approximately 18 feet 4 inches on-center (single-axis tracking panels) and approximately 20 feet 5 inches on-center (fixed-tilt panels) and row length would be approximately 206 feet. This design would accommodate emergency equipment access.

2.3.2 Electrical Components

DC Collection, Inverters, AC Collection, and Transformers

Modules would be electrically connected into strings. Each string would be funneled by electrical conduit underground to combiner boxes located throughout the solar field power blocks. The output power cables from the combiner boxes would again be consolidated and feed the DC electricity to inverters which convert the DC to AC. Each inverter would be fully enclosed with pad mounted, and stand approximately 95 inches in height. The AC output of two inverters would be fed via underground cable into the low-voltage side of the inverter step-up transformer, generally within 20 feet of the inverters.

Underground electrical cables would be installed using ordinary trenching techniques. All construction activity (trenching, electrical routing, backfilling, and compaction) would be conducted in accordance with applicable local, state, and federal codes.
At each of the array blocks, the AC output of the inverters would be collected and stepped up to 34.5 kV via medium voltage transformers. As required, switchgear cabinetry would be provided where necessary for circuit control. All electrical inverters, transformers, and switchgear would be placed on concrete foundation structures.

### 2.3.3 High Voltage Transmission

**Collector Substation, Switching Stations, and Gen-ties**

At each of the inverters, the output of the 34.5 kV transformers would be collected onto common 34.5 kV feeders. The 34.5 kV feeders would be routed either overhead or underground to the onsite switching station. Electricity at the onsite switching station would be consolidated and remain at 34.5 kV or stepped up to 66 kV. From the switching station, multiple 34.5 kV or 66 kV feeders would be constructed along one of the potential gen-tie routes. These feeders would either run overhead on wooden poles between 45 and 50 feet in height or underground and would connect to the previously approved collector substation near 100th Street West and Avenue J. In the event that steel poles are required, the height of the poles could be up to 75 feet. The collector substation would use open air 34.5 kV or 66 kV switchgear to tie in the various feeders. As many as five generator step up transformers would convert the output to 220 kV. A 220 kV rigid metal bus would be installed to collect the output of each of the transformers and feed into one gen-tie line. The 220 kV gen-tie line would deliver the entire collector substation’s output onto SCE’s Antelope Substation 220 kV bus. Redundant fiber optic cables would also be routed underground between the collector substation and Antelope Substation for use by SCE. The proposed project would install metering equipment on the 220 kV side of each of the transformers. Appropriate electrical protective devices such as disconnect switches and circuit breakers would be used on each of the 34.5 kV or 66 kV feeders, the high and low side of the generator step up transformers, and the 220 kV gen-tie line.

Additionally, the proposed project has the potential to interconnect to LADWP’s Barren Ridge-Rinaldi 230 kV transmission line at one of the following locations: 1) near the intersection of Avenue J and 130th Street West; 2) Avenue I and 125th Street West; or 3) Avenue G and 120th Street W. The proposed project would connect to a newly constructed LADWP switching station via an overhead or underground gen-tie (up to 230 kV) from the project site. The new 230 kV switching station would be owned and operated by LADWP. The footprint of the switching station would be approximately 400 feet by 400 feet. The switching station would be constructed in a ring bus configuration, containing three circuit breakers and associated disconnect switches, various current transformers and voltage transformers, steel support structures and conductors, and an air-conditioned control building that would house protective relays and remote terminal units. At the intercept point with the existing transmission line, improvements such as engineered tubular steel poles would be constructed. The proposed project has the potential to utilize no more than two of the six potential gen-tie routes. Gen-tie Routes 1 through 3 would terminate at the collector substation and Gen-tie Routes 4 through 6 would terminate northwest of the project site at the switching station connecting to LADWP’s Barren Ridge-Rinaldi 230 kV line. Figure 2-3 shows the six gen-tie routes.
• Gen-tie Route 1 extends north from the intersection of Avenue L and 90th Street West along 90th Street West to Avenue J where it continues west to the collector substation located west of the Antelope Substation at the intersection of 100th Street West and Avenue J (an overall distance of approximately 3.0 miles).

• Gen-tie Route 2 extends north from the intersection of Avenue L and 90th Street West along 90th Street West to Avenue K where it continues west to 100th Street West and further continues north along 100th Street West to the collector substation located west of the Antelope Substation near the intersection of 100th Street West and Avenue J (an overall distance of approximately 3.0 miles).

• Gen-tie Route 3 extends north of the intersection of Avenue K-8 and 100th Street West along 100th Street West to Avenue K where it continues west to 110th Street West then continues north to Avenue J where it continues east along Avenue J to the collector substation located west of the Antelope Substation near the intersection of 100th Street West and Avenue J (an overall distance of approximately 3.5 miles).

• Gen-tie Route 4 extends from the intersection of 100th Street West and Avenue K-8 north along 100th Street West to Avenue K. The route then turns west along Avenue K to 110th Street West where it extends north to Avenue J then continues west along Avenue J to a switching station located near the intersection of Avenue J and 130th Street West, adjacent to the existing Barren Ridge-Rinaldi 230 kV transmission line (an overall distance of approximately 4.2 miles).

• Gen-tie Route 5 extends from the intersection of 100th Street West and Avenue K-8 north along 100th Street West to Avenue K. The route then turns west along Avenue K to 110th Street West where it extends north to Avenue I and then continues west along Avenue I to a switching station located near the intersection of Avenue I and 125th Street West, adjacent to the existing Barren Ridge-Rinaldi 230 kV transmission line (an overall distance of approximately 5.0 miles).

• Gen-tie Route 6 extends from the intersection of 100th Street West and Avenue K-8 north along 100th Street West to Avenue K. The route then turns west along Avenue K to 110th Street West where it extends north to Avenue G and then continues west along Avenue G to a switching station located near the intersection of Avenue G and 120th Street West, adjacent to the existing Barren Ridge-Rinaldi 230 kV transmission line (an overall distance of approximately 6.5 miles).

For purposes of this Draft EIR, the combination of lengths of Gen-tie Route 3 and Gen-tie Route 6 are used as the longest route for their respective providers; as such, the combination makes up the greatest extent of impact at 10.0 miles. This distance is utilized throughout this Draft EIR to determine the potential impacts resulting from the proposed project’s gen-tie connections.
2.3.4 Ancillary Site Improvements

**Supervisory Control and Data Acquisition**

A Supervisory Control and Data Acquisition (SCADA) system would be installed to provide control of the solar field and all components of the electrical system to the plant and grid operators. Physically, the system would be installed with a series of fiber optic communication lines. This fiber optic system would connect points (i.e., an item to be monitored) throughout the solar field leading to a centrally located (or series of appropriately located) SCADA system cabinets where the fiber would be terminated at servers of the operating system.

The system would also include a meteorological (met) data collection system. The met station would have the following weather sensors: a pyranometer for measuring solar irradiance, a thermometer to measure air temperature, a barometric pressure sensor to measure atmospheric pressure, and two wind sensors to measure speed and direction. These sensors would be connected to a data logger to compile the data for transmission to the Data Collection Center.

**Site Security**

The proposed project would be remotely monitored. Site security would consist of a six to eight feet high chain-link fence with three-strand barbed wire installed around the perimeter of the project site. Manual swing gates would be constructed at the entry and egress points and in strategic locations, as required for the convenience in accessing and maintaining each portion of the facility. Each solar field separated by an existing roadway or future roadway would be fenced separately and would have its own entrance point, identified as the following sixteen locations:

- West side of 95th Street, between Avenue L and Avenue K-12.
- East side of 95th Street, between Avenue L and Avenue K-12.
- South side of Avenue L, between 97th Street West and 100th Street West.
- South side of Avenue L, between 100th Street West and 105th Street West.
- West side of 97th Street West south of Avenue L.
- East side of 97th Street West, south of Avenue L.
- South side of Avenue K, between 90th Street West and 100th Street West.
- West side of 95th Street West, between Avenue K-4 and Avenue K-8.
- West side of 95th Street West, between Avenue K-8 and Avenue K-12.
- North side of Avenue K-8, between 93rd Street West and 92nd Street West.
- North side of Avenue K-8, between 92nd Street West and 90th Street West.
- South side of Avenue L, west of 90th Street West.
• East side of 90th Street West, south of Avenue L.
• West side of 80th Street West, south of Avenue L.
• West side of 90th Street West, north of Quarry Ridge Road.
• East side of 90th Street West, north of Quarry Ridge Road.

An intrusion detection system would be installed along array fences to alert monitors of fence breaches. The proposed project would comply with North American Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) requirements for regulatory control and security systems.

**Outdoor Lighting**

Project lighting would be installed for ongoing maintenance and security purposes. Low-level lighting would be installed at entry and egress gates around the facility. All project lighting would be shielded and directed downward to avoid light trespass and minimize the potential for glare or spillover onto adjacent properties. Lighting would be used from dusk to dawn for security purposes during operations. Lighting would be installed at the switching stations. Project lighting would conform to National Electric Safety Code (NESC) requirements and all applicable City of Lancaster lighting requirements. NESC recommends, as good practice, illuminating the switching station to a minimum of 22 lux or 2 foot candles. The lighting is necessary during working conditions, but would not be activated when the station is unmanned.

**Driveways, Access Roads, Bikeways and Trails**

Project entrance driveways off paved roads would be 24 feet wide asphalt paving placed over compacted sub-grade (90% relative compaction). Project entrances off unpaved roads would be compacted to 90% relative compaction. Driveway access gates would be set 50 feet back from the road right-of-way. Interior access roads would be 20 feet wide, compacted to 90% relative compaction, with a 32 feet centerline turning radius (22 feet interior radius and 42 feet exterior radius). Additionally, a 7 foot minimum setback would be provided from the edge of existing drainages to the edge of access roads where feasible. Some drainages within the project site would require vehicle crossings.

Soil compaction, soil strengthening agents, or geo fabric may be used for access and circulation roads. Compaction may also be required for the construction of inverter pads, the switching station, and roads. Road construction may require soil conditioning to achieve proper compaction. Roads and other work areas would be periodically sprayed with water to reduce dust. Roads and work areas may also be treated with approved dust suppression products.

In conformance with the City of Lancaster, Master Plan of Trails and Bikeways, an 8 feet wide asphalt bike lane would be constructed along Avenue L between 80th Street West and 90th Street West and along 90th Street West from Avenue L to Quarry Ridge Road.
Signage

Signs warning of high voltage danger would be posted on the perimeter fences and at all entry points. These signs would also include a no trespassing statement. Signs posted at the switching station(s) would conform to all codes and State requirements for safety. Signage would identify the project operator and owner and provide emergency contact information, including a telephone number. All signage would conform to City of Lancaster signage requirements.

Fencing Design and Landscaping

The proposed project design has incorporated multiple wildlife movement pathways through the project site to facilitate wildlife movement by way of anticipated setbacks from onsite drainages as well as non-disturbed areas within the site (Figures 2-3 through 2-7). Perimeter fencing surrounding the project site would be raised at regular intervals above ground level. This would allow for the passage of wildlife. The fence would be elevated anywhere from six to eight inches depending on finished grade. Raised openings would be approximately 50 feet wide and spaced at even intervals. The incorporation of wildlife corridors into the proposed project is intended to allow for wildlife movement through the project site.

The proposed project would include a 10 feet wide landscaped buffer consisting of native or drought tolerant plants along portions of the perimeter of the project site as depicted on Figures 2-3 through 2-7.

Fire Protection

Perimeter roads and evenly distributed interior access roads would conform to LACFD standards for solar facilities. The PV modules and ancillary equipment represent a negligible fire risk; however, the applicant would have a fire prevention plan approved per applicable City of Lancaster regulations. Fire department access device and emergency contact placards would be located at all gated entrances. In addition, the proposed project would meet the minimum standards set forth by PRC 4290, Title 14, for fire protection and emergency water standards. Specifically, the proposed project would include thirteen 10,000 gallon water storage tanks. These tanks would be approximately 15 feet high with a diameter of 12 feet. Water storage tank connections shall be per LACFD standards.

The water storage tanks would be accessible from the interior access roads and placed adjacent to the following entrance locations:

- East side of 95th Street, between Avenue L and Avenue K-12.
- South side of Avenue L, between 97th Street West and 100th Street West.
- South side of Avenue L, between 100th Street West and 105th Street West.
- East side of 97th Street West, south of Avenue L.
- South side of Avenue K, between 90th Street West and 100th Street West.
- West side of 95th Street West, between Avenue K-4 and Avenue K-8.
- West side of 95th Street West, between Avenue K-8 and Avenue K-12.
• North side of Avenue K-8, between 93rd Street West and 92nd Street West.
• North side of Avenue K-8, between 92nd Street West and 90th Street West.
• South side of Avenue L, west of 90th Street West.
• East side of 90th Street West, south of Avenue L.
• West side of 80th Street West, south of Avenue L.
• East side of 90th Street West, north of Quarry Ridge Road.

The thirteen water storage tank locations and three fire hydrant locations are depicted on Figures 2-4 through 2-7. Fire hydrant locations are proposed at the three entrance locations where water storage tanks are not proposed:

• West side of 90th Street, north of Quarry Ridge Road.
• West side of 97th Street, south of Avenue L.
• West side of 95th Street, between Avenue K-12 and Avenue L.

Fire hydrants would be connected to the closest water storage tank. Fire hydrant connections shall be per LACFD Standards. Hydrants would be accessible from the interior access roads and placed adjacent to the site entrance as depicted on Figures 2-4 through 2-7.

2.3.5 Operation and Maintenance

Operational Hours
Once in operation, the proposed project would generate electricity during daylight hours (i.e., from dusk to dawn).

Personnel
The proposed project would be a private facility and, for safety reasons, would not be open to the public. Only authorized personnel would be permitted onsite and generally would be limited to the employees monitoring and maintaining the facility. The proposed project would be operated on an unstaffed basis and monitored remotely, with regular onsite personnel visitations for security, maintenance, and system monitoring. During scheduled maintenance or emergency repairs, the proposed project is not expected to require more than six technicians.

Facility Maintenance
Facility maintenance would include the periodic maintenance of the proposed project components, such as solar panels, electrical equipment, and the internal road network. The level of vehicle activity entering and leaving the site during operations would be limited to scheduled and emergency maintenance visits and infrequent delivery vehicles. Scheduled maintenance would occur in the early evening or early morning hours to avoid interference with the proposed project’s peak hours of generation (no later than 10:00 p.m. and no earlier than 4:00 a.m.). Emergency maintenance would occur at any time, as needed for the situation;
however, maintenance and emergency service during daylight hours would be encouraged, to maximize worker safety.

**Panel Washing**

Panel washing to remove dust particles from the solar panels would be done up to two times per year. Approximately 1.0 million gallons (3.069 acre-feet) of water would be used to clean the panels per year, requiring approximately 500,000 gallons (1.534 acre-feet) per wash event (Table 2-3). Water would be obtained through agreements with private landowners to use existing wells or procured through the City of Lancaster’s recycled water program and trucked to the site. Recycled water is available at a filling station located at Division Street and Avenue H, approximately ten miles from the project site. Panel washing would extend over several days, taking place only during daylight hours.

![Table 2-3: Estimated Project Operations Annual Water Use](image)

<table>
<thead>
<tr>
<th>Project Element/Phase</th>
<th>Project Water Use (Gallons Per Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Washing</td>
<td>1,000,000 (two panel washes per year; 500,000 gallons per wash)</td>
</tr>
<tr>
<td>Dust Control</td>
<td>1,281,300 *</td>
</tr>
<tr>
<td>Irrigation</td>
<td>651,700</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,933,000 gallons per year</strong></td>
</tr>
</tbody>
</table>

Note: * Upon completion of the proposed project, other methods of dust control such as hydroseeding, mulch, and chemical binders would be used predominantly to create a stabilized surface eliminating the need to use water for dust control.

### 2.3.6 Ancillary Construction Considerations

**Phased Schedule and Workforce Requirements**

Phased construction is planned to begin in 2015, after completing CEQA review, receiving all necessary construction permits, and meeting pre-construction conditions of approval. The proposed project may be constructed in three, 50 MW phases or all at once. The applicant anticipates that construction of the entire proposed project would last approximately 24 months; therefore, project construction is expected to be completed no earlier than late 2016. Saturday work may be required to accommodate scheduling of system outages and construction schedules. Construction would commence following City of Lancaster approval of permits and other entitlements, final engineering, and procurement activities. The peak construction workforce is not anticipated to exceed 250 workers, depending on scheduling constraints. All proposed construction activities would be completed within approved working times, as dictated by Chapter 8.24 of the Lancaster Municipal Code.

**Site Access Construction and Internal Circulation/ Parking**

Access to the project site for construction personnel and construction deliveries would be from the south (LA Basin) heading north on Highway 14 to either Avenue L or Avenue K, then westward to 90th Street West. The access and interior roads would be surfaced with aggregate as needed, and would be maintained to facilitate onsite circulation for emergency vehicles during all weather conditions. The internal road network and project site access are illustrated on
Figures 2-3 through 2-6. Please see the section on Driveways, Access Roads, Bikeways and Trails for a detailed discussion of internal circulation roads and driveways.

Construction Deliveries

All materials for project construction would be delivered by truck. All truck traffic would occur on designated truck routes and major streets. Deliveries may be made from the south heading north on Highway 14, a divided four-lane fully surfaced regional transportation route, to either Avenue L or Avenue K, then westward to 90th Street West.

Construction traffic exiting the project site would travel east on Avenue L or Avenue K to Highway 14 to access other points in Los Angeles County. Traffic from construction activities would be temporary and would occur along area roadways as workers and materials are transported to and from the project site. Proposed project components (e.g., PV solar panels, support structures, and electrical interconnection equipment), with the exception of pre-assembled components, would be brought to the project site and assembled. Approximately 12,168 truck trips are assumed for project construction-related deliveries over the 24-month construction period; this assumes a 6-day work week at approximately 20 deliveries per day (e.g., tracking system, various supplies, and electrical system components). Following construction activities, construction area roadways would be restored to respective pre-construction conditions.

Construction Parking and Traffic Flow

During construction, all employees would park within the project site boundary.

Electricity

The temporary office and construction facilities would obtain electricity from a temporary drop line from the local electrical distribution system. Up to two portable electric generators, that meet local and state emission controls, would be used throughout the project area during construction. The two small 10,000 watt (15 horsepower [hp]) generators would operate at 0.5 percent load for two hours per day during construction. No generators would be onsite during operations.

Waste Disposal

Portable restroom facilities, in quantities that meet all labor code requirements, would be placed near active work sites. These facilities would be regularly cleaned and maintained to meet health and safety codes. A contract would be executed with the local waste hauling company to ensure removal of all landfill material from the project site. Efforts would be made to reduce landfill waste by developing an effective waste recycling program. Waste containers would be distributed throughout the work areas to make it easy for workers to utilize them. Workers would make regular sweeps to ensure the worksite is clean and safe.

Water

The proposed project is anticipated to require approximately 322 acre-feet (104,900,000 gallons) of water during construction for soil conditioning, dust control, single panel wash, and other uses. Water, including for construction, would be obtained through agreements with private
landowners to use existing wells or from recycled water available through the City of Lancaster. Additionally, potable water would be provided to the site for workers during construction.

### Table 2-4: Estimated Project Construction Water Use

<table>
<thead>
<tr>
<th>Project Element/Phase</th>
<th>Project Water Use (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Panel Wash</td>
<td>500,000</td>
</tr>
<tr>
<td>Civil Work (Roads, Dust Control, Other)*</td>
<td>104,400,000</td>
</tr>
<tr>
<td><strong>Total: All Construction</strong></td>
<td><strong>104,900,000</strong></td>
</tr>
</tbody>
</table>

Note: * Upon completion of the proposed project, other methods of dust control such as hydroseeding, mulch, and chemical binders would be used predominantly to create a stabilized surface eliminating the need to use water for dust control.

#### 2.3.7 Site Disturbance

The maximum area of permanent disturbance would be approximately 1,085 acres, including staging areas and access roads. Approximately 294,073 cubic yards of dirt/soil would be generated by grading. Grading is limited to those areas necessary to create a finished grade to support internal roadways or areas that would support inverters, transformers, or switching station(s).

The following identifies the four major phases of construction and the level of disturbance associated with each particular piece of construction equipment. The equipment that would be used during construction activities and the duration the equipment would be used (gross numbers) is as follows:

1. **Site Preparation**
   - 1 Roller (95 hp) operating at a 0.56 load factor for 8 hours per day.
   - 1 Rough Terrain Forklift (93 hp) operating at a 0.60 load factor for 8 hours per day.
   - 2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day.
   - 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day.
   - 4 Water Truck (189 hp) operating at a 0.5 load factor for 8 hours per day.
   - 2 Small 10,000 watt (15 hp) Generators operating at 0.5 percent load for 2 hours per day.

2. **Trenching**
   - 2 Tractor/Loader/Backhoe (108 hp) operating at a 0.55 load factor for 7 hours per day.
   - 2 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day.
   - 4 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day.
   - 2 Small 10,000 watt (15 hp) Generators operating at 0.5 percent load for 2 hours per day.

3. **PV Installation**
   - 8 Pile Drivers (47 hp) operating at a 0.4 load factor for 6 hours per day.
   - 1 Crane (399 hp) operating at a 0.43 load factor for 7 hours per day.
   - 2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day.
1. 1 Tractor/Loader/Backhoe (108 hp) operating at a 0.55 load factor for 7 hours per day.

2. 4 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day.

3. 2 Small 10,000 watt (15 hp) Generators operating at 0.5 percent load for 2 hours per day.

4. Gen-tie, Trails, and Landscaping
   1. 1 Tractor/Loader/Backhoe (108 hp) operating at a 0.55 load factor for 7 hours per day.
   2. 1 Rubber Tired Dozer (357 hp) operating at a 0.59 load factor for 6 hours per day.
   3. 2 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day.
   4. 2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day.

2.3.8 Equipment Installation

Construction activities would include the installation of civil infrastructure (e.g., roads, utilities, fencing, etc.), mechanical infrastructure (e.g., tracking components, PV panels, etc.), and electrical infrastructure, as listed below.

Civil Infrastructure Activities

Survey and project layout, including road, panel, switching station, and support site improvements include:

- Construction of roads.
- Construction of temporary facilities, parking, and staging areas.
- Installation of the chain-link fence and gates.
- Watering for dust control and soil compaction.
- Installation of the switching stations, skids/inverters, and control room pads.

Mechanical & Electrical Infrastructure Activities

Mechanical and electrical infrastructure activities include:

- Installation of I-beam foundations and placement of a racking system on top of I-beam/tubular steel foundations.
- Placement of PV solar modules and AC collection system.
- Installation of a wire harness, fuses, and wire grounding.
- Trenching for wires to be buried underground.
- Installation of buried wiring.
- Installation of the inverter/transformer structures.
- Wiring and interconnection.
- Construction of the AC collection system.
- Construction of the project switching stations.
- Construction of the interconnection transmission/distribution systems.
• Installation of telecommunication equipment.
• Installation of meteorological equipment.

2.4 PROJECT OBJECTIVES AND APPROVALS

2.4.1 Objectives

The goal of the proposed project is to provide renewable solar energy to be sold to a load serving entity through a power agreement. The proposed project would generate electrical power from a renewable source, offsetting the demand from fossil fuel generating sources. The applicant is proposing to construct the proposed project to meet the following objectives, thus supporting the statewide and local objectives for increasing renewable energy production:

• Support the efforts of City of Lancaster and the State of California to reduce greenhouse gas (GHG) emissions consistent with the timeline established by California Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006.
• Assist the State of California in complying with Executive Order (EO) S-21-09 and California utilities in meeting their obligations under California’s Renewables Portfolio Standard (RPS) Program.
• Support the energy goals stated in the City of Lancaster General Plan 2030, as well as other policies in the plan, designed to protect City of Lancaster’s environment and economy.
• Minimize impacts to threatened or endangered species or their habitats, wetlands and waters of the United States and the State of California, cultural resources, and sensitive land uses.
• Provide an investment in California and the City of Lancaster that would create jobs and other economic benefits.
• Develop an economically feasible and commercially financeable project.
• Maximize the use of existing transmission infrastructure while minimizing the network upgrade costs borne by the California ratepayer.
• Ensure that the proposed project can be technologically constructed in a manner that allows electricity to be provided at a competitive price.
• Develop a facility that is situated in a California Renewable Energy Zone close to existing electrical infrastructure or transmission lines.

2.4.2 Approvals

sPower has submitted applications for a GPA, ZC, and CUP to the City of Lancaster Development Services Department for the project. The following permits and approvals are required for the proposed project. Additional permits and approvals may also be required.

• City of Lancaster, Building Permits and Right of Way Encroachment Permit.
• City of Lancaster Landscaping Permit.

• Regional Water Quality Control Board (Water Board), National Pollutant Discharge Elimination System (NPDES) Permit and Report of Waste Discharge.

• AVAQMD, Dust Control Plan.

• CDFW Incidental Take Permit and Streambed Alteration Agreement.

• County of Los Angeles Grading Permit.

• County of Los Angeles Franchise Agreement.

2.5 INTENDED USES OF THIS DRAFT EIR

This Draft EIR has been prepared in accordance with CEQA (PRC, Section 21000 et seq.) and the Guidelines for Implementation of CEQA published by the State of California Resources Agency (Title 14, Cal. Code Regs., 15000 et seq.). Additionally, this Draft EIR has been prepared to comply with the rules, regulations, and procedures for implementing CEQA as adopted by the City of Lancaster. The City would be responsible for project approvals and supervision, therefore, the City of Lancaster serves as the lead agency for the proposed project. Furthermore, this Draft EIR may be used by an outside agency for discretionary approvals and permits, which include, but are not necessarily limited to, those provided in Section 2.4.2, Approvals.