

Border Environment Cooperation Commission SunPeak Solar Park in Niland, California

1. General Criteria

1.a Project Type

Project Name: SunPeak Solar Park in Niland, California, USA.

Project Sector: Clean and efficient energy

1.b Project Category

Category: Private-sector environmental infrastructure project

1.c Project Location and Community Profile

Communities: Imperial County, California

Location: Imperial County, in the far southeast area of the State of California, borders the state of Arizona on the east, San Diego County on the west, Riverside County on the north, and the state of Baja California in Mexico on the south. The county comprises a land area of about 4,481 square miles. The City of El Centro is the county seat. The proposed infrastructure will be located in the northern portion of the county within Niland, CA.

The Imperial Valley is renowned for its sunny, dry and hot climate. It experiences in excess of 350 days of sunshine per year and very little precipitation. It is located in a region with one of the highest levels of insolation in the US continental territory, according to the National Renewable Energy Laboratory (NREL), as described in the following figure.



Figure 1. Annual Direct Normal Solar Radiation

Location within the border:

The project is approximately 40 miles north of the US-Mexico border.

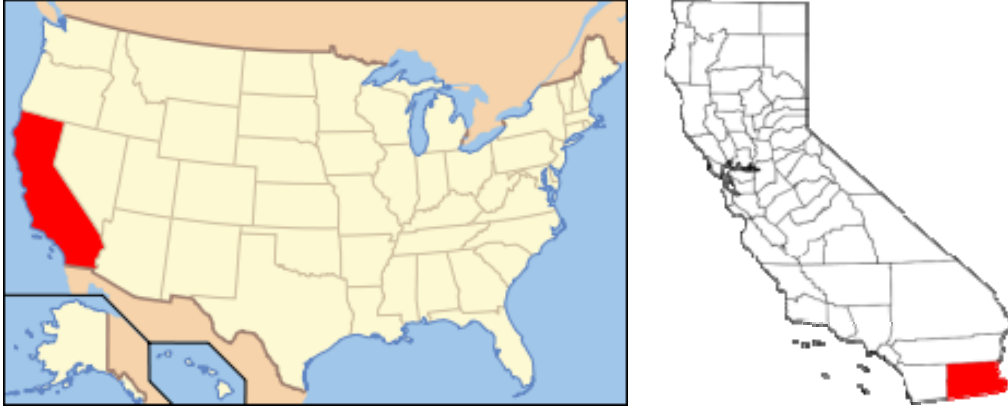


Figure 2. Location of California in the US and Imperial County within the state of California

Demographics:

Current population:	174,528 (2010)
Growth rate:	2.1 to 2.4 % (2008 estimate)
Primary Economic Activities:	Educational services, health care, social assistance, retail trade, public administration, agriculture, forestry, fishing and hunting, and mining.
Labor Force:	62,247 (2005-2009 5 year estimate)
Per capita income:	\$ 16,017 (2009 Inflation-adjusted)
Median Household Income:	\$ 37,595 (2009 Inflation-adjusted)
Occupied Housing Units:	46,405 (2005-2009 5 year estimate)
Total Housing Units:	52,889 (2005-2009 5 year estimate)
Average Household Size:	3.23 persons per household
Reference:	U.S. Census Bureau – 2010; 2005-2009 American Community Survey 5-year Estimates – Imperial County

Energy Generation & Consumption

The following figure shows California’s electrical plants location, renewable energy potential and energy sources.



Figure 3. Location of electrical plants and potential renewable energy sites in the state of California.

The following table shows that the net electricity generation for California produced by the industry.

Net Electricity Generation	California
Total Net Electricity Generation	16,880 thousand MWh
Petroleum-Fired	6 thousand MWh
Natural Gas-Fired	8,537 thousand MWh
Coal-Fired	177 thousand MWh
Nuclear	2,495 thousand MWh
Hydroelectric	3,312 thousand MWh
Other Renewables	2,218 thousand MWh

Table 1. California's Electrical Energy Production

Imperial Irrigation District (IID) serves roughly 146,000 electricity customers in all of Imperial County and parts of Riverside and San Diego Counties, making it the 6th largest electrical utility in California. According to IID's 2008 Climate Action Registry Public Annual Entity Emissions report, the total power provided through generated and

purchased sources totaled nearly 2,788 thousand MWh. Electricity sales accounted for approximately 90% of IID's total revenues in 2009. IID's energy sold was distributed as follows: residential: 47.32%, commercial: 48.03%, industrial: 0.2%, and other: 4.45%.¹ **IID currently generates less than 8% of its power from eligible renewable sources with the largest sources being natural gas (47%) and coal (29.4%).**

1.d Legal Authorities

Project Sponsor:	SunPeak Solar, LLC
Legal representative:	David N. Rennie, C.A.
Legal instrument to demonstrate legal authority:	Incorporated in the State of California as a limited liability company for the purpose of developing utility-scale solar energy projects in the southwestern United States.
Date of instrument:	April 27, 2007
International Treaties and Agreements:	Not in conflict of any international treaties and agreements.

1. e. Project Summary

Project Description and Scope:	The project is expected to reduce the demands on traditional fossil-fuel based energy production through the installation of a solar photovoltaic system (PV) capable of providing cleaner energy generation, contributing to the displacement of harmful emissions. The project includes the development of a 23 MW _{AC} fixed-tilt, polycrystalline silicon photovoltaic solar project located in Niland, California with its entire generation capacity interconnected to one substation, located adjacent to the solar park site. The electricity generated will be consumed by IID through a non-appealable PPA for a period of 30 years.
Population Benefited:	174,528 persons (Imperial County)
Project Map:	The following figure shows the location of the SunPeak Solar Park project:

¹ Source: IID 2009 Annual Report.

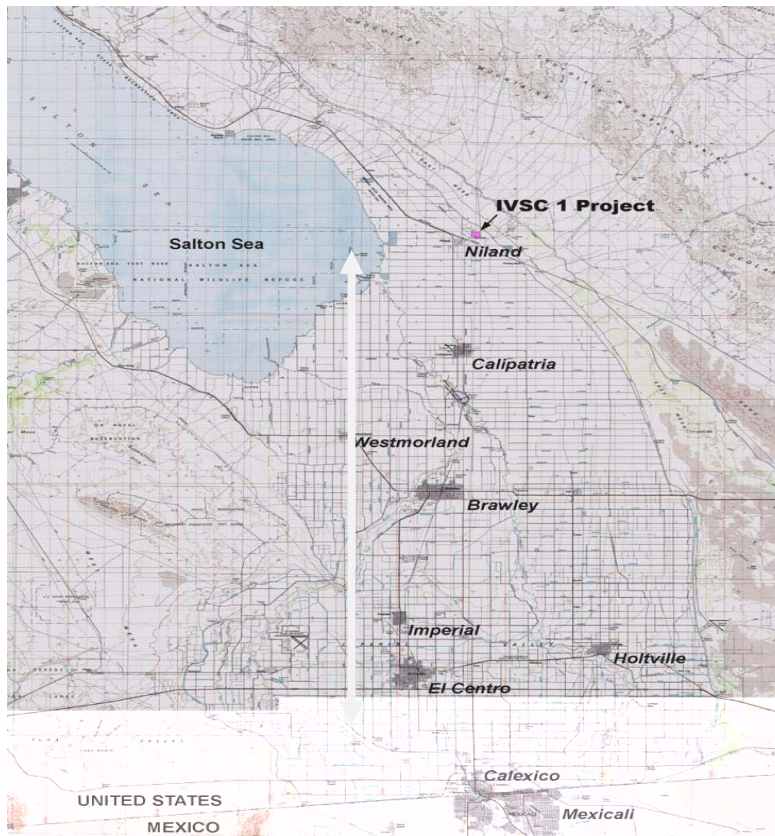


Figure 4. Location of the SunPeak Solar Park Project within the BECC mandated region.

Project Justification:

There is a need for affordable and environmentally beneficial alternatives to conventional fossil fuel derived energy sources. The limited affordable financing mechanisms for funding clean energy projects reduce the options that utilities have in regards to developing clean energy projects for their renewable energy portfolio requirements. Additionally, renewable energy projects create an opportunity to generate electricity without the same atmospheric emissions generated by fossil fuel fired plants or the use of scarce water resources for electricity production. These emissions will continue to jeopardize the health of the population as they continue to be exposed to vastly higher levels of greenhouse gas emissions than they would be if their energy needs were serviced by clean energy alternatives.

The SunPeak Solar Project provides an opportunity to displace greenhouse gases and other pollutants produced by traditional fossil-fuel based energy generation, while providing the citizens of Imperial County with a safe, reliable energy alternative. Estimated emission improvements include the displacement of over 28,000 metric tons of carbon dioxide (CO₂) in the first year of production as well as support a decrease in other pollutants such as sulfur dioxide (SO₂), with an estimated displacement of 160 metric tons in year one, and nitrogen oxide (NO_x), at just

**Project Need or
Consequences of No Action
or Alternative:**

over 100 metric tons estimated to be displaced in the first year. The aggregated environmental impact for the expected life of the project over the next 40 years is estimated to be a total CO₂ reduction of nearly 1 million metric tons.

California’s Renewable Portfolio Standard (RPS) requires that electric service providers regulated by the California Public Utilities commission procure an additional 1 percent of retail sales per year from eligible renewable resources until 33% is reached by 2020. This project is part of IID’s plan to comply with these regulations.

Under the “No Action Alternative,” IID may not meet the State RPS requirements and lose an opportunity to mitigate GHG emissions and other pollutants.

Pending Issues:

None.

Criterion Summary:

The project meets all the general requirements of the criterion.

2. Human Health and Environment

2.a Compliance with Applicable Environmental and Cultural Resource Laws and Regulations

Environmental and Public Health needs addressed by the proposed project:

Historically the United States has depended to a great extent on fossil fuels for the generation of energy. This conventional electrical energy development can affect the natural environment due to the harmful emissions related to the generation process, including the release of greenhouse gases (GHG) as well as other pollutants such as sulfur dioxide (SO₂) and nitrogen oxides (NO_x). **In particular, the state of California's Electric Power industry is responsible for the emission of approximately 62.5 million metric tons of CO₂.** Table 2 below shows the estimated annual emissions for the year 2010 for stationary sources in the state of California and Imperial County. As shown in the table, fuel combustion, statewide, is the main source of CO and NO_x emissions and a major source of SO_x²; additionally, fuel combustion is the only significant source of these pollutants in Imperial County.

2010 Estimated Annual Average Emissions						
Stationary Sources						
Emissions are represented in metric tons/year	Statewide			Imperial County		
	CO	NO _x	SO _x	CO	NO _x	SO _x
FUEL COMBUSTION	83,021	89,325	13,638	365	2,655	33
WASTE DISPOSAL	1,560	1,195	398	-	-	-
CLEANING AND SURFACE COATINGS	66	66	-	-	-	-
PETROLEUM PRODUCTION AND MARKETING	3,915	2,820	13,671	-	0	-
INDUSTRIAL PROCESSES	19,279	31,290	10,253	33	0	0
* TOTAL STATIONARY SOURCES	107,841	124,697	37,960	398	2,655	33

Table 2. 2010 Statewide and County Estimated Annual Average Emissions- Stationary Sources

Table 3 shows the statewide and county emissions related to fuel combustion only.

Table 3. 2010 Statewide and County Estimated Annual Average Emissions- Fuel Combustion

² NO_x is a term used to treat NO and NO₂ together as one problem or as a quasi species. Most regulations for NO_x emissions are expressed as a numerical value for NO₂, assuming that all the available NO will react with oxygen (O₂) in the atmosphere and will be converted to NO₂. SO_x is a mixture of SO₂ and SO₃; usually SO₃ is negligible and streams are treated as if only SO₂ is present.

Current generation of electricity for the residents of Imperial County relies on **a mix of energy production technologies with the largest sources being natural gas (47%) and coal (29.4%)**. Although natural gas power generation produces fewer emissions of pollutants such as SO₂ and NO_x than coal-based production, both natural gas and coal-based energy produce significant CO₂ emissions and use scarce water resources as part of the generation process. One way to protect the natural environment and mitigate climate change is to promote the use of energy from renewable resources.

According to IID's 2008 Climate Action Registry Public Annual Entity Emissions report, the total power provided by the utility was nearly 2,788 thousand MWh of electricity. The CO₂ emissions reported as a result of the non-renewable generated and purchased power sources meeting that demand was more than 2.1 million metric tons. Emissions data for SO₂ and NO_x were not reported.

The SunPeak Solar Park project will help reduce the demand on fossil fuel fired electrical power plants, thus displacing the related harmful emissions. Because **solar energy requires minimal water for energy production**, water resources will also be saved. The production of 23 MW of zero-carbon generation as proposed by this project will displace, on average over the next 40 years, the annual emission of over 20,000 metric tons of carbon, more than 100 tons/year of SO₂ and more than 85 metric tons/year of NO_x, into the atmosphere as compared to traditional fossil fuel-based electrical generation. **The anticipated displacement of emissions and reduced water use can be expected to benefit the project area directly.**

Public Health

The project will positively impact the Imperial Valley regional airshed quality by reducing pollutants which may help contain the severity of respiratory and other diseases aggravated or caused by air pollution. In addition, the reduction of GHG emissions is expected to mitigate climate effects that create more vulnerable conditions for human health.

The project meets the following applicable environmental laws and regulations:

The project will not require any mandatory air quality permits from the State of California or Federal government other than the necessary land use and development approvals from the County. Furthermore, **the project completed the California Environment Quality Act (CEQA) review process during the third quarter of 2010 with the issuance of a mitigated negative declaration by the lead agency, the County of**

Imperial. Additionally the County issued a Conditional Use Permit on October 27, 2010 where all adopted CEQA mitigation measures are required to be implemented prior to project construction. The County of Imperial Public Works Division has approved the Project Grading Plan to commence land stripping and earthmoving activities. The grading plan includes the Storm Water Pollution Prevention Plan (SWPPP) in general compliance with National Pollutant Discharge Elimination System (NPDES), and the Dust Mitigation and Control Plan.

2.b Human Health and Environmental Impacts

Health statistics:

Epidemiological research has shown that both, chronic and acute exposure to harmful emissions associated with fossil-fuel based energy production, can lead to serious respiratory problems. It is estimated that, at the very least, prolonged exposure to excessive levels of pollutants can deteriorate the respiratory capacity of humans and greatly contribute to the increase incidence of cardiopulmonary diseases such as asthma, heart ailments, and lung cancer. The following table lists some of the human health and environmental impacts associated with pollutant emissions.






Emission	Problems	Impacts
SO ₂ , NO _x		- regional haze - lung and heart disease
NO _x , VOCs		- respiratory disease, permanent lung damage
CO ₂		- increases in global temperature - extreme weather
Mercury, Selenium		- damage to central nervous system - contaminated lakes
SO ₂ , NO _x		- degradation of soil, foliage and water bodies
Nuclear waste		- health risks - dangerous to store, transport

Table 4. Health and environmental impacts associated with pollutants.

In summary, by substituting the demands on electrical power generation from conventional fossil fuel sources with renewable resources, the project could help improve air quality and the general environmental conditions affecting the health of residents, not just in the specific project location, but within the region and beyond.

Environmental Impacts

Direct and Indirect Benefits:

The project will provide a clean energy alternative to the area by constructing a solar energy generation site, displacing emissions associated with conventional electricity generation. Minor environmental impacts are anticipated from the development of the different project phases, which have been documented in the project's environmental summary. The electricity provider for the region and project offtaker, Imperial Irrigation District (IID), is working toward increasing the share of energy they derive from renewable sources; **the energy added by the project would further reduce the carbon intensity of the fuel mix, increase the diversity of renewable sources, and lessen strain on production and transmission as demand grows during peak hours.**

Environmental Impacts:

In the United States, greenhouse gas emissions come primarily from the combustion of fossil fuels in energy use. Energy-related carbon dioxide (CO₂) emissions, resulting from the combustion of petroleum, coal, and natural gas, for 2008 were measured at a total of 5,735.5 million metric tons of CO₂eq emissions, this represented close to 82 percent of the total U.S. anthropogenic (human-caused) GHG emissions in 2008.

Fossil fuels supply 85 percent of the primary energy consumed in the United States and are responsible for 98 percent of emissions of carbon dioxide.

Climate Change

When power plants burn fossil fuels to generate energy, emitted CO₂ accumulates in the atmosphere, trapping increasing amounts of heat on the Earth. Consequently contributing to potential climate warming conditions. In computer-based models, rising concentrations of GHGs produce an increase in the average surface temperature of the Earth over time. Rising temperatures may, in turn, produce changes in precipitation patterns, storm severity, and sea level commonly referred to as "climate change."

Given IID's electric power energy mix, the avoided energy used could save between 20,000 and 30,000 metric tons of CO₂ annually over the next 40 years. The actual reduction in GHG emissions could be greater than the calculated average since solar production generally displaces peak energy, which is generally more GHG intensive than the average mix. The proposed project will decrease the amount of CO₂ and combat the rising global warming trends caused by CO₂ emissions produced during energy generation.

Acid Rain

Acid deposition, or acid rain, results from emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x), primarily from power plants, vehicles and industry. Further, acid rain created by increased levels of SO₂ and NO_x in atmospheric precipitation can have harmful effects on crops and livestock, further endangering human populations.

Water Use

Water conservation will also be a benefit of the project, as the water used in large quantities for conventional energy production is not necessary for solar derived energy. It is estimated that power plants in the U.S. account for approximately 47% of all the water usage each year. In the U.S. conventional energy plants use close to 600 gallons per day to generate the electricity needs for an average household.

The solar PV facility will use a limited amount of water during the construction period of the project, and will be limited to dust suppression and soil conditioning. **The operation of the plant will require less than 2 acre-feet per year of water.** This water use will be for PV module washing and domestic (potable) water uses.

An environmental summary for the project was prepared to address the following issues:

- Noise Impacts
- Odor Impacts
- Vibration Impacts
- Visual Impacts
- Airport Impacts
- Dust Impacts, pre-construction and post construction
- Required Environmental Permits in addition to this land use application
- Water Quality and Quantity Impacts
- Wastewater Impacts, and
- Other environmental impacts

This review found that no negative impacts were expected from the implementation of this project.

Mitigation Measures:

The intent of the sponsor is to construct and operate the plant in compliance with all applicable environmental standards by applying mitigation measures aimed at preventing the creation of significant adverse impacts. A Stormwater Pollution Prevention Plan (SWPPP), a Spill Prevention Control Plan, and

a Fugitive Dust Activity Control Plan were developed in accordance with local regulations. The site has been designed with and will be constructed to include stormwater detention basins to control on-site and off-site erosion and flooding. The project sponsors will supervise the construction and maintenance of the necessary roads, buildings, fences, structural members, flood control installation of the photovoltaic modules and racking systems and will manage the proper discarding of materials or components that have completed their useful life.

Impacts:

The environmental impact resulting from the project will be positive overall; since the project will aid in the reduction of harmful atmospheric emissions generated by fossil fuel fired electrical plants. Some temporary impacts will be produced during the construction and operation of the plant. Some of these impacts include elevated noise levels, vibration, visual intrusion, and dust. The impacts would be managed accordingly. **Since Solar Photovoltaic (PV) energy power produces negligible carbon dioxide emissions, when compared to conventional fossil fuel derived methods, and since solar generated electricity is accomplished without the effects of emissions of NOx, and SOx during its production, the project can help decrease the associated harmful effects of these emissions by providing clean solar electrical power.** In fact, most of the GHG emissions associated with a PV system lifespan are concentrated with the construction and installation phase of the components. Generally speaking, it will also conserve water resources as solar energy production does not require the use of water. In summary, solar power is one of the cleanest forms of energy and the implementation of the project in Imperial County will benefit the region for years to come.

Transboundary Impacts:

No negative transboundary impacts are anticipated as a result of the development of the solar energy project, on the contrary, a beneficial effect is anticipated on the air quality due to the decreased demand on fossil fuel fired electrical plants. The project could benefit the communities contiguous to the project area, as the potential reduction in pollutants made possible by the project helps to improve air quality across the airshed. Furthermore, the project will aid in addressing and solving the larger environmental concerns about greenhouse gases and global warming targeted by international agendas.

Formal Environmental Authorization:

An Environmental Site Assessment was performed for the project site in compliance with CEQA requirements. The assessment objective was to recognize and identify adverse environmental impacts within the site. The study found two conditions requiring mitigation measures:

- Six burrowing owls were found to be residents of the site and upon completion of the biological survey were relocated in accordance with CEQA procedures by a licensed biologist.
- The cultural study identified a prehistoric campsite, 10,000 square feet in size, in the middle of the project site. In accordance with the mitigation requirements posed through the environmental clearance process, the campsite was fenced to avoid any potential impacts and disturbances. The site will remain sheltered through the construction and operation of the project.

Finally, other than that previously mentioned, the study found no other evidence of project related significant environmental consequences associated to the site; therefore no additional assessments are warranted and a formal finding was issued by the lead agency, the County of Imperial.

In summary, the project does not require any additional environmental permits or clearances from state and federal authorities, other than those already completed.

Assessment of Project Benefits: Project Results Matrix. Factor 3

Measurement of Project Results:

1. Reduce demands on traditional fossil-fuel based energy generation	Objectives and Indicators
	Capacity RE produced (Target = 23 MW)
2. Reduce harmful emissions	Displacement of CO ₂ (Target 20,000 metric tons/year) (Baseline ³ : 2.14 million metric tons)
	Displacement of SO ₂ (Target 100 metric tons/year) (Baseline: 10,140 metric tons)
	Displacement of NO _x (Target 85 metric tons/year) (Baseline: 6,330 metric tons)

³ Baseline reflects the emissions related to the total power portfolio (generated and purchased) of IID in 2008 as reported to the California Climate Action Registry. The report provides the emission quantities for CO₂; SO₂ and NO_x have been calculated using reference factors from the National Renewable Energy Laboratory.

Pending Issues:

None

Criterion Summary:

The project addresses a major human health and environmental issue.

3. Technical Feasibility

3.a Technical Aspects

Project Development Criteria

Design Criteria:

The SunPeak Solar Park project will be located one-half mile east-northeast of the townsite of Niland, CA, approximately 40 miles north of the Mexican border, in a 123 acre property in Imperial County California. The project will employ polycrystalline silicon photovoltaic modules for an installed capacity of 27.8 Megawatts under standard conditions which will convey approximately 23 MW_{AC} at the point of delivery. The photovoltaic (PV) solar modules will be mounted on a fixed axis structure. The electricity produced by the system will be fed into the Imperial Irrigation District (IID) distribution grid. The PV module arrays were designed following engineering and design standards normally practiced by the PV industry. The project design, including the plant hardware, was done using the appropriate standards for projects of this type and size, as well as by current industry design practices for engineering and construction of similar renewable energy infrastructure projects.

The general design criteria establishes a gross capacity of 23 MW Alternating Current (AC) / 27.8 MW Direct Current (DC), be designed for fully automatic unmanned operation during operating hours, and able to accommodate the requirements for interconnection and transmission with Imperial Irrigation District (IID).

Project Components:

PV System Components

The project will employ polycrystalline silicon photovoltaic modules as the basic building blocks of the solar plant. This technology has a long documented history of providing reliable electrical generation. The plant will consist of 46 individual systems with a rated capacity of 500 KW_{AC}. Each system will be divided into 15 arrays of 12 strings.

The inverters will be placed in enclosures. Every enclosure will have integrated transformers to step up the voltage exiting the inverters to 13.2 kV. The modular nature of the plant offers a large number of individual units, and since each of the systems operates independently the plant will avoid full shut down due to maintenance or repairs. Additionally, the project has been optimized to produce maximum annual electrical generation given the size and shape of the site. The following figure presents the general layout of the solar park:

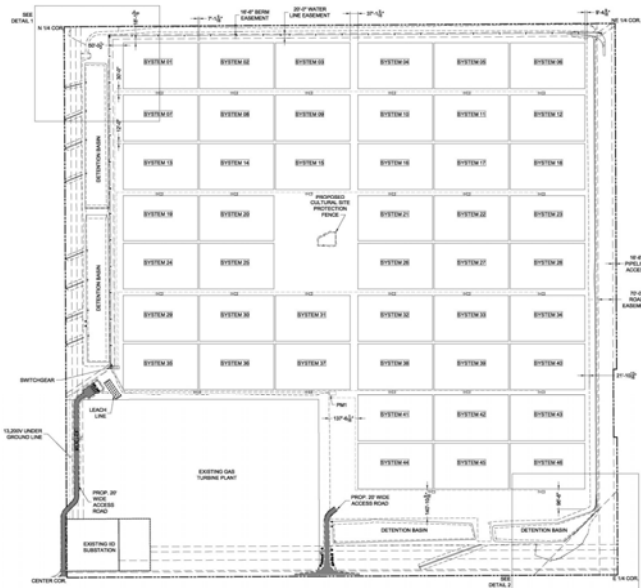


Figure 5. General system design layout.

The particular PV modules for the project will be polycrystalline modules. The PV modules panels are manufactured of tempered glass and corrosion resistant aluminum frames, with high efficiency polycrystalline solar cells rated at 14.4%. The modules are highly efficient at low light environments such as in mornings, evenings, and cloudy days and are manufactured to withstand wind loads of 2,400 Pascal. The project sponsor is considering a mix of suppliers with interchangeable characteristics to avoid a lack of spare parts availability for the modules.

The modules will be supported on a fixed tilt, stacked portrait configuration, racking system mounted on aluminium or corrosion resistance substructure frames supported on 4-inch galvanized steel members set in 6-foot concrete footings. The racking is engineered to meet all structural code requirements such as wind and snow loads, as well as seismic design requirements. Engineered drawings were submitted to Imperial County in December 2010 and, subsequent to engineering review, a building permit was issued.

The electricity generated by the PV modules will be collected by a 1000-volt (DC) collection system mounted to the racks. The collection wires are to be routed to an array combiner panel located at the mid-point of each row of PV modules and subsequently routed underground in conduit to pad-mounted inverters.

all the equipment and installation must comply with existing IEEE design standards and testing procedures, including UL performance testing requirements. Imperial County requires compliance with applicable fire code requirements and issuance of a building permit prior to construction of the plant.

Appropriate Technology

Assessment of Alternatives:

As part of the project review and development, several technology and technology manufacturer alternatives were analyzed for the modules, inverters, transformers, and tracker system. More particularly, the review of the PV modules focused on the type of module most appropriate for the power generation expectations in consideration of climate and solar resource conditions at the site. The evaluation concerned thin film polycrystalline and crystalline technologies.

Due to the nature of the project the plant site location was also evaluated. The evaluation factors included environmental impacts, transmission needs, interconnection ease, land availability, land use, location and flood risks.

Finally, the “no action alternative” results in continued consumption of electricity produced by conventional non-renewable resources which are responsible for GHG and other criteria pollutant emissions. According to the EPA, the average household CO₂ emissions from electricity are approximately 7.21 metric tons per year (about 15,895 lbs).

Solar Resource Assessment:

A detailed off-site solar energy assessment was prepared for the project. Data was collected from multiple meteorological stations administered by independent third-parties including Meteonorm, NASA and the California Irrigation Management Information System (‘CIMIS’). The data allowed for the preparation of energy generation estimates based primarily on a Meteonorm-administered meteorological station located at El Centro, CA, approximately 32.5 miles from the project site. Although sufficient insolation appears to exist to support energy generation as demonstrated by the available data, actual solar insolation at the site is anticipated to be greater and it is expected that the preliminary analysis is understated. Therefore, to quantify a true insolation condition at the site, an on-site monitoring campaign has been initiated to reduce uncertainty in the available data.

Property and Right-of-Way Requirements

Requirements:

The project will be installed in approximately 123 acres of unimproved land located in northern Imperial County. More particularly the site is located on a parcel of land situated in the northeast quarter of section 3, Township 11 South, Range 14 East, San Bernardino Base and Meridian, northwest of the intersection

of Beal and Cuff Road. IID owns the project site and will lease it to the sponsor for the life of the project; the land between the project site and the point of delivery, IID's substation, is also the property of IID and as such there is no need to procure additional easements. Furthermore, although most of the site is zoned M1U, on which solar energy production is specifically permitted use, the sponsor, requested a Conditional Use Permit (CUP) for the rest of the parcel originally zoned as A2U, agricultural use zone. The CUP approval was granted by the County on October 27, 2010.

Access to the plant will be through Beal Road using two new private driveway entrances. An emergency access driveway will also be constructed at the northeast corner of the site with access from Cuff Road. All easements related to access and right-of-way for IID transmission lines and the substation site are already in place. The following figure depicts the location of the site, interconnection utility easements, and distribution line.



Figure 6. Project location overlay view.

Project Tasks and Timelines
Project Timeline:

Initial earth movement activity began at the site in the fourth quarter of 2010 and the first racking posts were installed in April 2011. The project's target date for commercial operation is March 2012. The table below shows the major milestones for the project completion.

Date	Milestone
2010 4 th Qtr	Initiate earth movement
Feb – April 2011	Commence racking installation Site preparation complete – grading/fencing
June 3, 2011	Financial Closing and Equipment Orders
July 2011	Racking installation complete
August 2011	Electrical underground work begins
Sept 2011	Modules installation begins Underground electrical work complete
Oct 2011	Inverter/transformer installation begins Aboveground electrical work begins
March 2012	Commercial Operation Date

Table 5. Milestone Timeline

3.b Management and Operations

Project Management

Resources:

IVSC1 is a California Limited Liability company formed for the sole purpose of owning the project and is a whole subsidiary of SunPeak, which has extensive experience, a well established technical plan, and proven financial capacity in the development of utility scale solar energy projects. Furthermore, the management, administration and the operation of the project will be the responsibility of Imperial Projects LLC (IPLCC), also a whole subsidiary of SunPeak, which has the necessary resources and staff available for these purposes.

Operation and Maintenance

Organization:

IPLCC will be responsible for the day-to-day management, operation, service and maintenance for the project. The operations will employ approximately four people based near the project site.

Operation Plan:

The system design incorporates an Operation and Maintenance plans and specifications provided by the equipment manufacturers that include the primary tasks needed to ensure a proper operation of the system and to prevent breakdowns of the system. Operations and maintenance activities include monitoring systems availability, ensuring optimal production, security, and module cleaning protocols. IPLCC has developed a monitoring and cleaning protocol to ensure optimal projection including to the greatest extent possible, to perform repairs and maintenance activities during nighttime hours so as to limit impacts to production.

Permits, licenses, and other regulatory requirements:

California’s Renewable Portfolio Standard (RPS), one of the most ambitious energy standards in the United States, was established in 2002 under Senate Bill 1078 and modified in 2006

under Senate Bill 107, and it requires that electric service providers regulated by the California Public Utilities Commission to procure an additional 1 percent of retail sales per year from eligible renewable resources until 20% is reached, no later than 2010. Recently California's Governor Jerry Brown signed a law that increases the state's renewable portfolio standard (RPS) target from the established 20% in 2012 to 33% by 2020, currently the most aggressive goal in the nation. Although the RPS program is not the only means by which new renewable generation is installed, it's the main method for new utility-scale renewable energy development in California. As such IID is supportive of the established renewable energy standards and recognizes the need to meet the states requirements. The sponsor, IVSC1, has agreed to sell the totality of the plant's electricity production to IID under a 30 year sculpted price power purchase agreement. IID in turn will report the energy purchased under the requirements to meet its Renewable Energy Portfolio Standards.

Furthermore, electricity production from a renewable facility can't be counted towards fulfillment of a utility's RPS unless the facility has been certified as RPS-eligible by the California Energy Commission. The project will complete an RPS precertification prior to May 2011, and complete full RPS certification prior to commercial operations. Also the project is required to register with the Western Renewable Energy Generation Information System (WREGIS) where all the energy generated by the project will be tracked. The project is also required to register with the California climate Action Registry by commercial operations date as established in the power purchase agreement. Additionally the project sponsor is required to comply with all rulemakings by Federal Energy Regulatory Commission (FERC), North American Electric Reliability Corporation (NERC) and the Western Electricity Coordinating Council (WECC) throughout the project's operational life.

Due to the lack of criteria pollutant emissions the sponsor will not require an air emissions permit. A conditional use permit approval for an extended 30 year term was issued by the county on October 27, 2010. The permit includes all the mitigation measures as adopted in the California Environmental Quality Act (CEQA) Mitigated Negative Declaration.

Reviewing Agencies:

Formal review requirements for the construction of solar energy generation plants in Imperial County are minimal. The following is a list of the reviewing agencies:

- Imperial County Planning and Development Services Department; Air Pollution Control District; Public Works Department; Sheriff; and Fire Protection/Office of Emergency Services

- Niland Sanitation District
- Niland Volunteer Fire Department
- Golden State Water Company
- Imperial Irrigation District
- BECC / NADB

Pending Issues:

None.

Criterion Summary:

The project design and equipment complies with all applicable regulations and meets the technical requirements of the certification criteria.

4. Financial Feasibility

4.a Proof of Financial Feasibility

Financial Conditions

Information submitted: IID Financial Statements, and Imperial Valley Solar Company 1, LLC (IVSC1) financial projections.

Financial Analysis Results: The Project's expected revenue from the sale of electricity, based on the credit risk analysis performed by NADB, will be sufficient to cover: a) scheduled O&M expenses, b) funding of any Debt Service Reserve Account, c) payment of debt service and, d) retain cash for Debt Service Coverage Ratio covenant requirements if necessary. Therefore the project is deemed financially feasible.

Project Scope

Item: The scope of the Project is to design and build a 23 MW solar photovoltaic energy generation plant. The electricity generated will be bought by Imperial Irrigation District (IID) through a Power Purchase Agreement with IVSC1.

NADB Loan Amount: Up to US \$77.4 million.

Dedicated Revenue Source

Source of Income: Revenues from the sale of electricity to Imperial Irrigation District, through the Power Purchase Agreement.

4.b Legal Considerations

Project Management: IVSC1 will be the Borrower for the Project. IVSC1 has the legal authority to contract loan obligations. The project will be managed by the already created IVSC1.

Pending Issues:

None.

Criterion Summary:

The project meets all applicable financial feasibility criteria.

5. Public Participation

5.a Private-sector Environmental Infrastructure Project

Project Classification

The project is classified as a private sector environmental infrastructure project with exclusive impact. This category includes projects that intend to provide an environmental service. The impact of these projects is generally exclusive to the facilities, processes or services of the sponsor, although an indirect benefit for the community may exist. These projects are not expected to require increased revenue generation to be supported by the community-at-large for project implementation or operation and maintenance.

Public access to Project Information:

For this project category, the *General Public Comment Period* shall apply as a minimum requirement to satisfy this criterion. BECC will release the Project Certification Document (PCD) for a 30-day public comment period beginning May 2, 2011.

The project's information has been made available to the public for review and comment, throughout the Conditional Use Permit (CUP) approval process.

Additional Outreach Activities:

Although a broad public participation effort was not required for the project, various opportunities to provide formal public access to project information occurred during the development of the project including the following:

Ground Lease executed with IID (Board Approval received)	August 24, 2010
Imperial County Environmental Evaluation Committee hearing	September 9, 2010
Imperial County Planning Commission hearing - Approval of CUP (6-0 vote in favor)	October 27, 2010

The project also received attention in local newspaper publications and in the IID web page, including:

- Imperial Valley Press, August 15, 2010
Niland could run entirely on solar power during sunny days
http://articles.ivpressonline.com/2010-08-15/solar-project_24807209

- Imperial Irrigation District, August 24, 2010
IID Approves Development of California's Largest Solar PV Project
<http://www.iid.com/index.aspx?page=30&recordid=52>

Pending Issues:

None.

Criterion Summary:

The project meets the Public Participation requirements for certification of a private sector environmental infrastructure project with exclusive impact.

6. Sustainable Development

6.a Human and Institutional Capacity Building

Project Operation and Maintenance:

The project's technical requirements, including design, appropriate operation and maintenance of the program systems will be overseen by Imperial Projects LLC (IPLCC), a whole subsidiary of SunPeak established for the purpose of construction and operation management of the project. The project will generate power for Imperial Irrigation District (IID) under a 30-year, Power Purchase Agreement (PPA).

Human and Institutional Capacity Building :

The team of SunPeak, IVSC1, and IPLCC brings vast experience, a fully developed project, and proven human, institutional and financial capacity to the project. Major system components will be supplied by industry leaders and will be accompanied by robust warranties. Actions within the scope of the project that contribute to institutional and human capacity building include:

- Local labor will be employed to perform routine maintenance and site security.
- Technical training will be provided as required.
- As-needed, external specialized contractors will be employed for expert services.

6.b Conformance to applicable Local, State, and Regional Regulations and Conservation and Development Plans

Local and Regional Plans addressed by the project:

The project meets the requirements and expectations of Imperial County's General Plan. The comprehensive plan was developed to provide a balance of land use policies and programs to maintain the quality of life in the region. The project also matches the established goals of IID's Integrated Resource Plan; IID's Strategic Plan; and IID's Budget Plan. In general the goals of these plans aim to maintain stable energy prices by optimizing the system's resources, acquiring new cost-effective energy sources, and meet cost and operation goals. Furthermore, the IID plans to meet or exceed all state and federal planning criteria for renewable resources with the goal of generating 20 percent of energy requirements from renewable sources by 2012, and at least 33 percent by 2020; additionally it seeks to reduce greenhouse gas emissions by at least 35 percent by 2020.

Laws and Regulations addressed by the project:

The project will not require any discretionary permits from the State of California or Federal government. The project required a Grading Activity Permit for land stripping and/or earthmoving activities for construction activities from the

Imperial County Planning Department and a Storm Water Pollution Prevention Plan approval from Imperial County Public Works. Additionally the Project has complied with the necessary land use and development approvals from Imperial County, including the issuance of a mitigated negative declaration in accordance with the CEQA review process.

Additional Plans or Programs:

Just recently the state of California approved a law (SBX1-2) that will increase the state's renewable portfolio standard (RPS) target from 20% in 2012 to 33% by 2020. The previous 20% by 2020 applies only to investor-owned utilities, but this new law applies to publicly owned utilities such as IID. The new law will require that utilities reach 33% in three compliance periods. The first period ends in December 2013 and will require that renewable energy production be 20% of the utility's retail sales. As such the project will contribute to the IID's fulfillment of its RPS.

Impacts to neighboring communities in the U.S. and/or Mexico:

The SunPeak Solar Park in Niland will benefit neighboring communities in the U.S. and Mexico by improving regional air quality and avoiding GHG emissions which cause broader effects to the region and beyond.

6.c Natural Resource Conservation

The project will reduce the problem of atmospheric emissions generated by fossil fuel fired electrical plants since solar generated electricity is accomplished without the release of harmful emissions. It will also minimize the use of water resources as solar energy does not use water for its operation.

6.d Community Development

The completion of this project will help in the development of the community. The project will influence new beneficial use of a previously undeveloped property which was a common location for trash accumulation and other blight conditions. The project will also provide social and economic benefits to the county residents through investment, job creation and environmental improvement. The project will create jobs during the installation, operation and maintenance of the systems, through the project lifetime. In an area with an unemployment rate above 30%, the 125 construction-related jobs and 5 permanent positions anticipated to be influenced by the project will provide significant benefits to local community development.

Pending Issues:

None.

Criterion Summary:

The project meets sustainable development principles for certification.