Wistaria Solar Energy Facility

Existing

Key Observation Point: **#10**

11/04/2013 • 9:23 AM • LAT: 32.658775° LONG: -115.620820°

Proposed

Photo simulation of the proposed solar facility as seen looking northeast from Rockwood Road

FIGURE 4.1-11
KOP #10 LOOKING NORTHEAST FROM ROCKWOOD ROAD
CPV MODULES ON DUAL-AXIS TRACKERS AT CUP 13-0050

4.1.3 IMPACTS AND MITIGATION MEASURES

A. STANDARDS OF SIGNIFICANCE

The impact analysis provided below is based on the following CEQA Guidelines, as listed in Appendix G. The Project would result in a significant impact to visual resources if it would result in any of the following:

a) Have a substantial adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c) Substantially degrade the existing visual character or quality of the site and its surroundings.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

B. ISSUES SCOPED OUT AS PART OF THE INITIAL STUDY

None of the issues identified in CEQA Appendix G Initial Study Checklist were scoped out as part of the Initial Study (refer to **Appendix A** of this EIR). However, as previously discussed, no local or state scenic highways are in proximity to the Project area and, therefore, no scenic resources within a state scenic highway would have the potential to be damaged as a part of the implementation of the proposed Project. Therefore, significance criteria (b) as related to state scenic highways will not be discussed further in this EIR.

C. METHODOLOGY

Analysis of impacts to visual character is subjective by nature because the qualities that create an aesthetically pleasing setting will vary from person to person. For purposes of this analysis, the Project site and its vicinity have been visited in order to consider the existing community character and to determine the proposed Project's consistency with the surrounding area and with applicable General Plan goals, objectives, policies and programs. Then, the evaluation of impacts were based on professional judgment; the existing aesthetic conditions (including presence of nighttime illumination and glare sources); analysis of the Imperial County General Plan goals and objectives related to visual resources; and the significance criteria established by CEQA. Aesthetic resources are defined as both natural and built features of the landscape that contribute to the public's experience and appreciation of the visual environment. Aesthetic impacts are determined on a qualitative basis through a comparison of the visual environment before and after a project is implemented. This section addresses the visual condition or character of the Project area and its vicinity, and the potential for the proposed Project to adversely affect those conditions. Depending on the extent to which a project's presence would alter the perceived visual character and quality of the environment, aesthetic impacts may occur.

There are approximately 21 residential structures immediately adjacent to the Project area boundary. For purposes of this analysis a worst-case scenario is taken that assumes all residential structures suitable for occupancy are being lived in.

Glare may result if radiation (light) from the sun is reflected from the PV modules or associated infrastructure and directed towards a viewer resulting in an annoyance, distraction, or nuisance. Glare produced by any surface is affected by a number of variables, including time of day, reflectivity of the surface, and the directionality of reflections relative to the position of a potential viewer. Potential viewers may be situated at a variety of viewing locations including stationary or mobile, at ground-level or from the air.

Visual Simulations

Visual simulations were prepared by WW Design & Consulting, Inc. (WWDC) for each KOP. WWDC created three-dimensional scale models of the proposed CUPs based on the information provided for both the PV units with single-axis and CPV units with dual-axis trackers using Autodesk 3ds Max modeling and animation software. An in-software daylight system was created to simulate the sun location and strength at the Project longitude and latitude at the time the photographs were taken. Using the real world KOP/camera locations as a reference, virtual cameras were created in the scale model at the various KOP locations so the subsequent renders of the PV and CPV systems would match exactly the real world photographs. The focal lengths, aperture, exposure time and camera heights of the virtual cameras matched exactly the real world camera settings. Virtual photographs of the KOP locations were then rendered in Autodesk 3ds Max. The rendered KOP photographs were then composited with the corresponding world KOP photograph counterparts in Adobe Photoshop to finish the simulated views of the Project (WWDC 2013).

Existing views are shown in the top image of **Figures 4.1-2a and 4.1-2b** through **4.1-11**. The visual simulation of the same view is depicted in the lower image. **Figure 4.1-12a** is a KOP map showing the northern cluster of CUPs (13-0038 thru 13-0047). **Figure 4.1-12b** shows the KOPs of the central (13-0036 & 13-0037) and southern clusters of CUPs (13-0050 thru 13-0052).

D. Project Impacts and Mitigation Measures

Adverse Effect on Scenic Vista

Impact 4.1.1 The Project area is not considered a scenic vista nor does it contain any outstanding aesthetic features. Therefore, this impact is considered **less than significant**.

FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

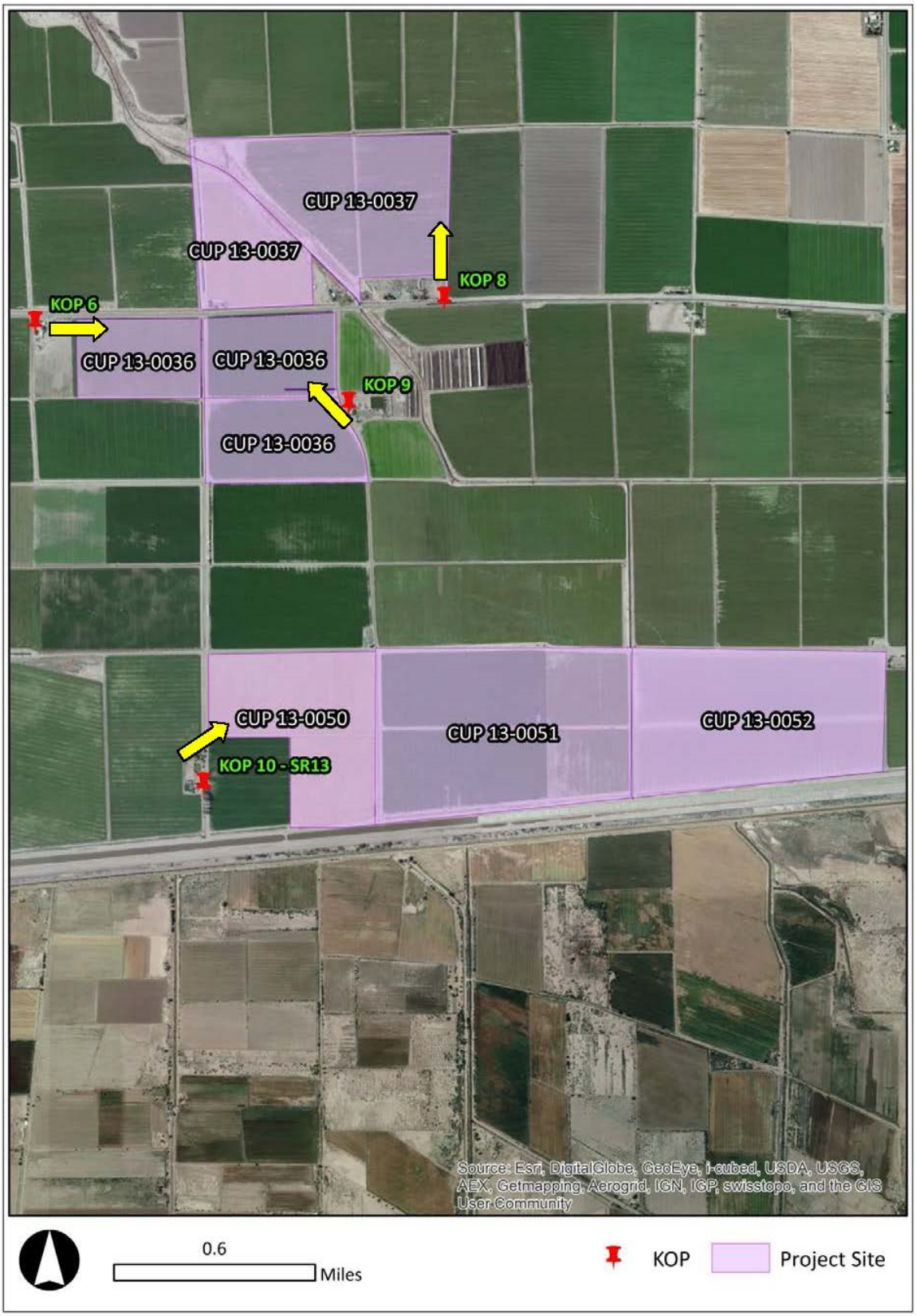
The entire Project area, including all CUPs (13-0036 thru 13-0052), is located in a rural portion of Imperial County with little topographic relief. The Project area is not located in a designated scenic vista, nor has the Imperial County General Plan designated the Project area as an important visual resource (Imperial County 2008c). The northern extent of the Project area is located three miles from I-8 and SR-98 aligns through the central CUP cluster. However, I-8 and SR-98 are not designated as state scenic highways nor are any of the roadways abutting or surrounding the Project area designated or proposed scenic vistas. In addition, none of the KOPs are located in a designated scenic vista. The Juan Bautista de Anza National Historic Trail is located approximately seven to eight miles west of the western boundaries of the proposed CUP clusters; views from this trail have a potential to be identified as a scenic resource. However, the Project site is not readily visible from this trail due to the distance from the Project site. Although gen-tie facilities could be visible along portions of the trail, the proposed transmission towers would be similar in use and scale as the existing structures and power line facilities in the area and therefore would not substantially damage any potential scenic resources from the Juan Bautista de Anza National Historic Trail. Any effect on views from this trail would be minimal. Therefore, Project impacts to a scenic vista are considered **less than significant**.

Construction

Construction of all the CUPs, the associated electric collector lines, and the gen-tie would involve standard construction equipment including, but limited to, trucks, scrapers, cranes, and tractors. The presence of this equipment in each CUP and the gen-tie and Electric Collector Line Corridor during construction would alter views of the area from agricultural uses to a construction site. However, the views of construction activity from each KOP would be temporary and, additionally, none of the KOPs are located in a designated scenic vista. Furthermore, no long term staging areas would be permitted near a residence during construction. In addition, the proposed Project represents an expansion of some

Source: ESRI, DD&E, Imperial County, WWD&C 2013.

FIGURE 4.1-12A
KOP MAP – NORTHERN CLUSTER (CUPS 13-0038 THRU 13-0049)



Source: ESRI, DD&E, Imperial County, WWD&C 2013.

FIGURE 4.1-12B
KOP MAP – CENTRAL CLUSTER (CUPS 13-0036 & 13-0037) AND SOUTHERN CLUSTER (CUPS 13-0050 THRU 13-0052)

Facilities previously constructed and located within the boundaries of neighboring solar projects including co-locating with the existing Mount Signal Solar Farm Project 230-kV structures to connect to the ISECS switchyard. The Project will also construct a new breaker bay within the existing switchyard of the ISECS Project to facilitate the interconnection. From the ISECS switchyard, electricity from the Project will flow along the ISECS interconnection path to the IV Substation. The ISECS interconnection path is already constructed and was analyzed as part of the ISCES EIR (SCH. No. 2010061038). Therefore, impacts to a scenic vista are considered **less than significant** during construction of both the Full Build-out Scenario and the Phased CUP Scenario**.**

Operation

Long-term modification of views in the area would result from the installation of solar modules and supporting infrastructure (e.g. PV or CPV panels, O&M buildings, water tanks, etc.) as well as the associated Electric Collector Line Corridor and new segments of the gen-tie. However, the Project area is not considered a scenic vista nor does it contain any outstanding aesthetic features. As noted throughout this EIR, the proposed Project would co-located Therefore, both the Full Build-out Scenario and the Phased CUP Scenario would result in a **less than significant impact** to a scenic visual resource during Project operation.

Decommissioning

Decommissioning of the both Full Build-out and each individual CUP would involve standard construction equipment including, but limited to, trucks, cranes, and tractors. This equipment would be present throughout each CUP altering views of the Solar Energy Center to appear as a construction area. However, views of the decommissioning activity would be temporary and, additionally, none of the KOPs are located in a designated scenic vista. Therefore, Project impacts to a scenic vista are considered **less than significant** during Project decommissioning**.**

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Degrade Existing Visual Character or Quality of the Site and its Surroundings

Impact 4.1.2 The proposed Project would convert agricultural fields to a solar energy generation facility thereby replacing vegetation with man-made structures. The Project would not significantly alter the overall character of the Project area, which already consists of a pattern of agricultural fields and solar generation fields. There are not a large number of residences in the area and the agricultural land is not considered a significant visual resource. Therefore, impacts associated with changes to the existing visual character or quality of the site are considered **less than significant**.

FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

Both the Full Build-out Scenario and the Phased CUP Scenario would change the existing use of all the solar field site parcels. Currently, each of the 17 CUPs is used for agricultural production (alfalfa, sugar beet, oat, wheat, forage hay, sudangrass, and bermudagrass). As such, there are no outstanding or unique visual resources located on the solar field site parcels. However, the proposed Project would not significantly alter the existing visual character of the area and its surroundings as a result of converting agricultural land to a solar energy generation facility because the area is already a blend of agricultural fields and solar generation fields. A letter to the County dated December 11, 2013 from the Department

of Conservation (DOC) states, "[b]ecause the County has concentrated solar facility development in the area, the proposed project is almost entirely surrounded by solar facilities in various states of completion. The Department believes that based on the County's decision to focus solar development in the area, which the Department recognizes as an industrial use of the land, the proposed project will not result in discontiguous patterns of urban development." The change in use would appear more industrial, but would not displace or damage any outstanding aesthetic feature unique to the area or the County as a whole.

The number of viewers and the duration of views are additional factors to consider in assessing the significance of a visual impact to the character of a site and its surroundings. There are not a large number of private residences in the Project area nor would a large volume of the traveling public have views of the Project. The Project site is in an extremely low density area (i.e. there are only 21 residential structures in the vicinity of the 2793-acre Project site) with very little traffic. Making the conservative assumption that all 21 residences are occupied equates to a very low density of one residence per 133 acres. Courts have confirmed that "obstruction of a few private views in a project's immediate vicinity is not generally regarded as a significant environmental impact." (*Bowman v. City of Berkeley* (2004) 122 Cal.App.4th 572, 586; see also *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego* (2006) 139 Cal.App.4th 249, 279.) "Under CEQA, the question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons." (*Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477, 492. See also *Porterville Citizens for Responsible Hillside Development v. City of Porterville* (2007) 157 Cal.App.4th 885. Furthermore, the solar arrays cover most of the solar fields, with small areas dedicated to the O&M complex, access roads and the Electric Collector Line Corridor. The solar array grids would provide uniform coverage over the site with the access roads forming a rectangular grid layout that would be oriented in a north-south or east-west direction. As such, the configuration of each CUP would blend with and be consistent with the rectangular and row cropping patterns in the existing adjacent agricultural fields. See-through security fencing (i.e. chain link) is proposed so as not to disrupt travelers' views of this compatible uniform pattern.

The Project is required to comply with zone A-2 and A-2-R regulations specifying a 30-foot front yard setback, 5- to 30-foot side yard setback, and 10-foot rear yard setback identified in County Code 90508.06. The Project is also required to comply with the height limits prescribed by County Code 90508.07 (except for the gen-tie tower structures that will comply with the height limits prescribed in the proposed variances.)

In addition, the Project is required to comply with zone A-3 regulations specifying a 30-foot front yard setback, 10-foot side yard setback, and 10-foot rear yard setback identified in County Code 90509.06. The Project is also required to comply with the height limits prescribed by County Code 90509.07 (except for the gen-tie line structures that will comply with the height limits prescribed in the proposed variances.)

The gen-tie component of the Project generally starts to the east of Rockwood Road, north of Anza Road and extends due west to Pulliam Road then aligns south as it connects to the ISECS Project. Specifically, gen-tie corridor would parallel, and be one half-mile north of Anza Road. The gen-tie would extend east-west from Ferrell Road on the east to Pulliam Road on the west, turn south on Pulliam Road and extend one-half mile south then align west to extend just under one-half mile along Anza Road to Mandrapa Road terminating at the ISECS project. The height of the tanget structures and double pole structures could be from 120 up to 140 feet with approval of variances (refer to Figure 2.0-27 in Chapter 2.0, Project Description). These vertical structures are visible from several miles away with the horizontal string of gen-tie extending between poles becoming more visible at a closer range. The structures provide a vertical dimension to the otherwise flat topography of the Project area and are typical of other 230-kV overhead infrastructure scattered throughout the Imperial Valley in association with connecting solar projects to the IV Substation.

The Electric Collector Line Corridor would also include vertical and horizontal features. The Electric Collector Line Corridor would largely align north to south along the boundary of the CUPs with a few exceptions where it would extend through vacant land (i.e between Kubler Road and the Wistaria Drain and Woodbine Lateral 2 and Anza Road). Several sections of the corridor would also align east-west to connect multiple CUPs in the northern CUP cluster and all three CUPs in the southern CUP cluster.

Structures within the Electric Collector Line Corridor will likely be a combination of wood and steel. The tallest structures within the corridor would have to 140 feet in order to clear the IID canals/drains. The Electric Collector Line Corridor is set-back from all private views but would be visible to travelers primarily along Rockwood Road which parallels the corridor. Based on the limited duration of the view and the lack of scenic features, the introduction of the Electric Collector Line Corridor is not anticipated to result in degradation of existing views. In addition, overhead electrical and telephone infrastructure is present through the Imperial Valley and the Project Area. Thus, overall, implementation of the both the Full Build-out Scenario and the Phased CUP Scenario would result in a **less than significant impact** with regard to degrading the existing visual character or quality of the site.

Representative photos of the proposed Electric Collector Line Corridor structures and overhead lines.

Construction

Residents and Travelers

Short-term visual impacts would occur in association with construction activities, including introducing heavy equipment (e.g., cranes), staging and materials storage areas and potential dust and exhaust to the Project area. Residents living adjacent to parcels undergoing construction would be subject to these visual changes throughout the duration of construction. If the Project is built out at one time, construction is expected to take approximately 18 months. If the individual CUPs are constructed over time, each CUP could take approximately seven months with construction of some CUPs overlapping one another. The equipment, materials, and labor involved in building the Project remain similar whether it is constructed as 17 individual CUPs, a combination of several CUPs over a period of ten years, or built-out in its entirety over an 18-month period. However, the Full Build-out Scenario where the Project is constructed over 18-months would result in greater intensity of labor and equipment and present the greatest (i.e. worst-case) visual impact. The Phased CUP Scenario, which would build out over ten years is less intense because no single sensitive receptor (area resident) would be exposed to visual impacts from construction for more than the estimated seven months.

Table 4.1-2 summarizes the addresses of residences directly adjacent, or in close proximity, to the project boundaries of the CUPs identified.

TABLE 4.1-2
SUMMARY OF RESIDENCES NEAR CUPS

CUP	Residence Address
CUP 13-0036 – Two Residences **Figures 4.1-7, 4.1-9 and 4.1-10**	1095 U.S. Highway 98, Calexico CA, 92231
	903 U.S. Highway 98, Calexico CA, 92231
CUP 13-0037 – Three Residences **Figure 4.1-12b**	904 West U.S. Highway 98, Calexico CA, 92231
	874 West U.S. Highway 98, Calexico CA, 92231
	876 West U.S. Highway 98, Calexico CA, 92231
CUP 13-0038 – One Residence **Figure 4.1-6**	619 Rockwood Road, Calexico CA, 92231
CUP 13-0039 – Three Residences **Figure 4.1-8**	865 Kubler Road, Calexico CA, 92231-9749
	852 Kubler Road, Calexico CA, 92231-9749
	603 George Road, Calexico CA, 92231-9794
CUP 13-0042 – Eight Residences **Figures 4.1-3, 4.1-4** and **4.1-5**	691 Brockman Road, Calexico CA, 92231-9717
	695 Brockman Road, Calexico CA, 92231-9717
	652 Brockman Road, Calexico CA, 92231-9717
	648a Brockman Road, Calexico CA, 92231-9717
	648b Brockman Road, Calexico CA, 92231-9717
	644 Brockman Road, Calexico CA, 92231-9717
	640 Brockman Road, Calexico CA, 92231-9717
	1160 Kubler Road, Calexico CA, 92231-9749
CUP 13-0049 – Two Residences **Figures 4.1-2a and 4.1-2b**	905 Brockman Road, El Centro, CA 92243
	907 Brockman Road, El Centro, CA 92243
CUP 13-0050 – One Residence **Figure 4.1-11**	105 Rockwood Road, Calexico CA, 92231-9603

Source: EGI 2014.

Construction activities for the CUPs listed in **Table 4.1-2** would be visible from the residences identified. Likewise, travelers along I-8, SR-98, Brockman Road, Rockwood Road and Kubler Road would also experience visual changes associated with the presence of construction activity. However, as various aspects of construction are completed (e.g., grading), the corresponding equipment would be eliminated from view. While construction equipment and activity may present a visual nuisance, it is temporary and does not represent a permanent change in views. Therefore, impacts associated with degrading the existing visual character or quality of the site is considered **less than significant** for both the Full Build-out Scenario and the Phased CUP Scenario during construction.

Operation

Travelers

The major equipment that would be installed within the Project area includes a single switchyard common to all CUPs (13-0036 thru 13-0052). Alternatively, each CUP may independently construct a 230 kilovolt (kV) step-up transformer and switchyard. Each CUP within the Project area would include PV modules mounted on either fixed-tilt frames which have an average height of 7 feet, 6 inches, or single-axis systems which have an average height of approximately 6 feet, 5 inches above the ground surface. If CPV modules are used, dual-axis tracking structures would use single pole/mast-mounted panels that when installed, would have an average height of approximately 27 feet. Although site plan specifications have not been created, typically components would include inverters (generally 12 feet in height), transformers (generally 6 feet in height), Power Conversion System (PCS) enclosures (generally 12 feet in height), an Operations and Maintenance (O&M) building or buildings (generally 18 feet in height). Each CUP may also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, water filtration buildings and equipment, equipment control buildings, septic system(s) and parking. Buildout of the Project area would include electrical lines and vehicular crossings of IID and County facilities.

Individual CUPs and the Full Build-out Scenario would be surrounded with an up to 7-foot chain link fence with 3-strand barb wire placed at the top, extending to a total of up to eight feet. Based on the see-through nature of chain link fencing, most of the proposed equipment on each CUP would be visible from surrounding roadways in order not to obstruct views of the row patterns in the solar fields.

The Mount Signal Solar Farm gen-tie structures are located along the southern boundary of CUP 13-0036 approximately 140 feet in height. Regardless of whether the Project is built out as 17 individual CUPs, a combination of several CUPs or in its entirety, the use of collector lines to convey electricity from the solar array fields to the Project substations would remain similar.

For travelers along SR-98, Brockman Road, Rockwood Road, Kubler Road, and other roadways adjacent to the Project area, the proposed Project and electric collector lines would be noticeable changes which dominate views. Regardless of whether the motorist perceives the solar site as visually interesting or an obstruction, the duration of time the site would be visible would be very short as travelers would travel quickly through areas where the Project would be visible. The overall aesthetic quality of the area is not distinctive being devoted to agriculture and solar development with no unique or outstanding features. The change in use would appear more industrial, but would not displace or damage any outstanding aesthetic feature unique to the area or the County as a whole. In addition, the row-like appearance of the solar fields will be consistent with the row-like patterns of area agricultural fields and solar fields. Thus, the impact of degrading the existing visual character or quality of the site for from the perspective of travelers would be **less than significant** for both the Full Build-out Scenario and the Phased CUP Scenario.

Residents

Because the Project area is already a blend of agricultural fields and solar generation fields, the proposed Project would not significantly alter the existing visual character of the area and its surroundings for residents. A letter dated December 11, 2013 from the DOC to the County states, "[b]ecause the County has concentrated solar facility development in the area, and the proposed Project is almost entirely surrounded by solar facilities in various states of completion. The Department believes that based on the County's decision to focus solar development in the area, which the Department recognizes as an industrial use of the land, the proposed project will not result in discontiguous patterns of urban

development." The change in use would appear more industrial, but would not displace or damage any outstanding aesthetic feature unique to the area or the County as a whole.

The number of viewers and the duration of their views are additional factors to consider in assessing the significance of a visual impact to the character of a site and its surroundings. In some cases, large numbers of residents can be considered to be a highly sensitive viewer group because of the long periods of time spent in personal residences, and the strong feelings residents attach to their homes. However, in the case of the proposed Project, there is not a large number of private residents in the vicinity of the Project with views of the Project. The Project site is in an extremely low density area with very little traffic. As previously noted, there are only 21 residential structures[1] in the vicinity of the 2,793 acre Project site. This conservatively equates to a very low density of one residence per 133 acres (2,793 acres ÷ 21 residents = 133). As previously noted, courts have confirmed that obstructing private views is not generally regarded as a significant environmental impact. Furthermore, the solar arrays cover most of the solar fields, with small areas dedicated to the O&M complex, access roads and the Electric Collector Line Corridor. The solar array grids would provide uniform coverage over the site with the access roads forming a rectangular grid layout that would be oriented in a north-south or east-west direction. As such, the configuration of each CUP would blend with and be consistent with the rectangular and row cropping patterns in the existing adjacent agricultural fields. See-through security fencing (i.e. chain link) is proposed so as not to disrupt travelers' views of this compatible uniform pattern.

The Project is required to comply with zone A-2 and A-2-R regulations specifying a 30-foot front yard setback, 5- to 30-foot side yard setback, and 10-foot rear yard setback identified in County Code 90508.06. The Project is also required to comply with the height limits prescribed by County Code 90508.07 (except for the gen-tie tower structures that will comply with the height limits prescribed in the proposed variances.)

In addition, the Project is required to comply with zone A-3 regulations specifying a 30-foot front yard setback, 10-foot side yard setback, and 10-foot rear yard setback identified in County Code 90509.06. The Project is also required to comply with the height limits prescribed by County Code 90509.07 (except for the gen-tie line structures that will comply with the height limits prescribed in the proposed variances.)

Thus, overall, implementation of the both the Full Build-out Scenario and the Phased CUP Scenario would result in a **less than significant impact** with regard to degrading the existing visual character or quality of the site.

[1] The ten KOPs selected are primarily located along public roads in front of some of the 21 private residences. As such, the KOPs do not represent private views from those residences. Instead, the KOPs represent the public view of a motorist traveling along the road and looking toward the Project site or a specific CUP. As described in the private view analysis in Appendix K, the private views from the homes near the KOP are mostly obstructed by other features such as sheds, trees, trash or other debris. Where the view is less obstructed by these features, the Applicant has chosen to implement a landscape screening plan (described in the as part of the Applicant proposed Measures/Project Design Features in Table 2.0-9 of Chapter 2.0, Project Description) in an effort to work with the neighbors near and adjacent to the Project site. This effort is made even though CEQA does not require mitigation where, as here, small numbers of private views are impacted. The Landscape Screening Plan includes planting Indian Rosewood, Italian Cyprus, an ornamental hedge or similar landscaping along the boundary of a portion of the CUP where it abuts certain private viewsheds. While enforceable as a project design feature, the County does not rely on the Landscape Screening Plan as part of its impact analysis because the County does not assess impacts to private views where, as here, the number of potential private view impacts is small.

Private View Impact Analysis

As previously discussed, the ten KOPs included in this analysis were from public roads near area residences and represented the view of travelers from these roads looking toward the site. The following demonstrates that the private view impacts were considered for information purposes and to inform the Applicant's decisions on where to focus the landscape screening plan included as a project design feature. The inclusion of a private view impact analysis also informs the County as to whether the total number of residences affected is large enough to trigger a significant impact for CEQA purposes.

CUP 13-0049: KOP #1

The view of CUP 13-0049 from the public road near the residence located at 905 and 907 Brockman Road, El Centro, CA 92243 is represented by KOP #1 (**Figure 4.1-2a and 4.1-2b**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcels where CUP 13-0049 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, while the view of the solar field site parcels where CUP 13-0049 is proposed would undergo a substantial visual change, the views of the solar panels would be similar to the view of the cattle feed lot based on the similarity of materials. The cattle feed lot has a significant amount of metal and shade structures which resemble the materials used in construction of a solar energy generation facility. Thus, the change in view associated with construction, operation and decommissioning of CUP 13-0049 will not impact the cattle feed lot. Accordingly, the Applicant proposed Measures/Project Design Features do no propose inclusion of this property in the landscape screening program.

CUP 13-0042: KOP #2

Views of CUP 13-0042 looking east from the public road near the two residences located at 691 and 695 Brockman Road, Calexico CA, 92231-9717 are represented by KOP #2 (**Figure 4.1-3**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcels where CUP 13-0042 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, while the view of the solar field site parcels where CUP 13-0042 is proposed would undergo a substantial visual change, the views of the solar panels would largely be screened by existing trees at the residence and/or is currently blocked by a trailer on the residential property. Thus, the change in view associated with construction, operation and decommissioning of CUP 13-00429 will not impact the residents' private views. Accordingly, the Applicant proposed Measures/Project Design Features do not propose inclusion of this property in the landscape screening program.

CUP 13-0042: KOP #3

Views of CUP 13-0042 looking northeast from the public road near the five residences (located at 652, 648a, 648b, 644, and 640 Brockman Road, Calexico CA, 92231-9717) along Brockman Road west of the northern CUP cluster are represented by KOP #3 (**Figure 4.1-4**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcels where CUP 13-0042 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, while the view of the solar field site parcels where CUP 13-0042 is proposed would undergo a substantial visual change, the private viewshed is currently blocked by old cars, trash, trailers, equipment and the Greeson Drain. Thus, the change in view will not impact the residents' private views. Accordingly, the Applicant proposed Measures/Project Design Features do not propose inclusion of this property in the landscape screening program.

CUP 13-0042: KOP #4

Views looking northeast towards CUP 13-0042 from the public road near the residence at 1160 Kubler Road, Calexico CA, 92231-9749 is represented by KOP #4 (**Figure 4.1-5**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcels where CUP 13-0042 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, while the view of the solar field site parcels where CUP 13-0042 is proposed would undergo a substantial visual change, the private viewshed is currently blocked by sheds, warehouses, and agricultural equipment. Thus, the change in view will not impact the residents' private views. Accordingly, the Applicant proposed Measures/Project Design Features do not propose inclusion of this property in the landscape screening program.

CUP 13-0038: KOP #5

Views of CUP 13-0038 from the public road near the residence at 619 Rockwood Road, Calexico CA, 92231 is represented by KOP #5 (**Figure 4.1-6**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcel where CUP 13-0038 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, while the view of the solar field site parcel where CUP 13-0038 is proposed would undergo a substantial visual change, the private viewshed is currently blocked by animal pens, trailers, and agricultural equipment. Thus, the change in view will not impact the residents' private views. Accordingly, the Applicant proposed Measures/Project Design Features do not propose inclusion of this property in the landscape screening program.

CUP 13-0036: KOP #6

Views of CUP 13-0036 from the public road near the residence at 1095 U.S. Highway 98, Calexico CA, 92231-9640 and for travelers along SR-98 looking to the east is represented by KOP #6 (**Figure 4.1-7**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcels where CUP 13-0036 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, while the view would undergo a substantial visual change, the private viewshed is already blocked by trailers, agricultural equipment, and debris. Thus, the change in view will not impact the residents' private views. Accordingly, the Applicant proposed Measures/Project Design Features do not propose inclusion of this property in the landscape screening program.

CUP 13-0039: KOP #7

Views of CUP 13-039 from the public road near the residence at 603 George Road, Calexico CA, 92231-9794 is represented by KOP #7 (**Figure 4.1-8**). Additionally, two residences (865 and 852 Kubler Road,

Calexico CA, 92231-9749) located approximately 1,000 feet to the west of the property represented in KOP #7 would experience similar changes to views. The residences located on the north side of Kubler Road along the southern boundary of CUP 13-0039 would abut the CUP boundary along the western, northern, and eastern property lines. The third residence located on the south side of Kubler Road would experience substantial changes to views to the north. For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcels where CUP 13-0039 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, the view would undergo a substantial visual change and the private viewshed is not currently blocked by obstacles or screened by trees. Thus, the change in view may impact the residents' private views. Therefore, the Applicant proposed Measures/Project Design Features propose inclusion of these properties in the landscape screening program.

CUP 13-0037: KOP #8

Views of CUP 13-0037 looking from the public road near three residences at 904, 874, and 876 West U.S. Highway 98, Calexico CA, 92231 are represented by KOP #8 (**Figure 4.1-9**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcels where CUP 13-0037 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, while the view would undergo a substantial visual change, the private viewshed is currently screened by trees or the residence is abandoned. Thus, the change in view will not impact the residents' private views. Accordingly, the Applicant proposed Measures/Project Design Features do not propose inclusion of this property in the landscape screening program.

CUP 13-0036: KOP #9

Views of CUP 13-0036 looking from the public access road adjacent to the Woodbine Canal and the residence located at 903 U.S. Highway 98, Calexico CA, 92231 is represented by KOP #9 (**Figure 4.1-10**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcels where CUP 13-0036 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, the view would undergo a substantial visual change and the private viewshed is not already blocked by obstacles or screened by trees and the change in view may impact the residents' private views. Therefore, the Applicant proposed Measures/Project Design Features propose inclusion of this property in the landscape screening program.

CUP 13-0050: KOP #10

Views of CUP 13-0050 looking from the public road near the residence at 105 Rockwood Road, Calexico CA, 92231-9603 is represented by KOP #10 (**Figure 4.1-11**). For the reasons discussed above regarding private views from private residences, the impact of degrading the existing visual character or quality of the solar field site parcel where CUP 13-0050 is proposed is considered a **less than significant impact** to travelers and residents during Project construction, operation, and decommissioning for both the Full Build-out and the Phased CUP Scenario.

As discussed in the private view analysis in **Appendix K** of this EIR, while the view would undergo a substantial visual change, the private viewshed is currently screened by a line of trees along the western side of Rockwood Road. Thus, the change in view will not impact the residents' private views. Accordingly, the Applicant proposed Measures/Project Design Features do not propose inclusion of this property in the landscape screening program.

Decommissioning

Residents and Travelers

Short-term visual impacts would occur in association with decommissioning activities, including introducing heavy equipment (e.g., cranes), staging and materials storage areas and potential dust and exhaust to the Project area. Residents living adjacent to CUPs undergoing decommissioning would be subject to these visual changes throughout the duration of decommissioning activities. The equipment, materials, and labor involved in Project decommissioning remain similar whether it is decommissioned as 17 individual CUPs, a combination of several CUPs over a long period, or decommissioned in its entirety (i.e. the Full Build-out Scenario). However, if the Full Build-out Scenario were decommissioned at one time, the decommissioning activities would result in greater (i.e. worst-case) intensity of labor and equipment and present the greatest visual impact to residents and travelers.

Portions, if not all, of the decommissioning would be visible to the residences located adjacent to CUPs. Likewise, travelers along I 8, SR-98, Brockman Road, Rockwood Road, Kubler Road, and other roadways adjacent to the Project area would also experience visual changes associated with decommissioning activities. However, as various aspects of decommissioning are completed (e.g., PV or CPV panels, electrical lines), the corresponding equipment (e.g. cranes) would be eliminated from view. While decommissioning equipment and activity may present a visual nuisance, it is temporary and does not represent a permanent change in views. Thus, the impact of degrading the existing visual character or quality of the site for the Full Build-out Scenario and the Phased CUP Scenario is considered a **less than significant impact** during decommissioning.

Mitigation Measures

None Required

Significance After Mitigation

Not Applicable

New Source of Substantial Light or Glare

Impact 4.1.3 The proposed Project includes non-reflective PV and/or CPV panels which are not anticipated to create glare. Likewise, the proposed lighting system would be designed to provide minimum illumination. Therefore, impacts associated with creation of substantial light and glare are considered **less than significant**.

FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

Construction

Light and Glare

Short-term sources of lighting would be introduced to the Project area during construction as part of site security, materials storage and staging areas. The Applicant proposes the implementation of the following Applicant proposed Measures/Project Design Features to reduce construction night lighting impacts:

- All lighting at construction and storage yards and staging areas on all CUPs (13-0036 thru 13-0052) shall be designed and installed such that light bulbs and reflectors would not be visible from public viewing areas, and would not cause reflected glare.

Implementation of this project design feature would minimize illumination construction and storage yards and staging areas during construction of both the Full Build-out Scenario and the Phased CUP Scenario. Project construction activities will not result in major sources of glare. Thus, impacts associated with a substantial increase in new sources of light and glare are considered **less than significant** during Project construction.

Operation

Light

The solar field site parcels and surrounding area are currently used for agricultural production and as such is not a source of light or glare. A lighting system is proposed as part of the Project which includes outdoor lighting in the common services areas secured to structures, equipment, walls and poles to provide illumination for maintenance vehicles and security. However, the lighting system would be designed to provide nighttime lighting levels consistent with applicable Imperial County lighting standards. Switched lighting would be provided at the substation and inverters. In the solar fields, lighting would be provided at the gates and other locations where necessary for security or safety.

The Applicant has identified a BMP regarding nighttime lighting during operation and maintenance of the Project.

- All lighting at operational facilities and structures areas on all CUPs (13-0036 thru 13-0052) shall be designed and installed such that light bulbs and reflectors would not be visible from public viewing areas, security lighting would be used at a minimum, lighting would be designed to eliminate spillover to outside areas, and would not cause reflected glare.

As previously noted, the proposed Project may be built out at one time, as multiple CUPs, or as 17 individual CUPs. If built separately, each CUP or group of CUPs may have its own O&M building. However, the lighting system would be designed to provide nighttime lighting levels consistent with applicable Imperial County lighting standards. Thus, impacts associated with a substantial increase in new sources of light are considered **less than significant** for both the Full Build-out Scenario and the Phased CUP Scenario during Project operation.

Glare

PV or CPV modules are designed to absorb as much light as possible to maximize efficiency. In addition, PV and CPV modules use anti-reflective coatings to decrease reflection and increase conversion efficiency. The time and duration of any potential reflections from the panels are determined by the orientation of the panels and the position of the observer in relation to the panels. All PV and CPV solar projects (regardless of the type of mounting structure) orient the panels perpendicular to the sun or as close to perpendicular as possible to maximize solar absorption and energy output. This results in the panels being oriented towards the sun as much as possible throughout the day and the course of the year as the position of the sun changes.

The amount of light reflected upwards would not be expected to potentially affect the Naval Air Facility at El Centro's training flights or other air traffic in the area, including crop dusters. Only 2 to 10 percent of ambient light is reflected by PV and CPV solar panels since generally the index of refraction for the glass is approximately the same as the windshield of a car (EGI 2012). Therefore, the intensity of the reflected light would be low. Also, light intensity decreases with distance from the source (according to the inverse square law of light intensity where intensity is equal to the inverse square of the distance or $I = 1/d^2$). For example, each time distance is doubled from the source, the light intensity is decreased to one-quarter of its original value ($1/2^2$). Therefore, the intensity of light reflected from the PV or CPV solar panels at locations any distance from the source would be a small fraction of the original intensity at the point of reflection (EGI 2012). Thus, any reflected light from the PV or CPV panels would be very low. Any viewers

who could see the low intensity reflected light would also be exposed to significantly brighter ambient light.

As such, the PV or CPV solar modules from the individual CUPs, or the Full Build-out Scenario, would not create a significant source of glare during sunlight hours. Also, the Project would not use other reflective materials such as fiberglass, vinyl/plastic siding, brightly painted steel roofs, or reflective forms of aluminum and galvanized products that have the potential to create on- and off-site glare. Therefore, both the Full Build-out Scenario and the Phased CUP Scenario are not anticipated to create a new source of glare that would adversely affect day or nighttime views in the area. Thus, impacts associated with a substantial increase in glare are considered **less than significant**.

Decommissioning

Light and Glare

Short-term sources of lighting would be introduced to the Project area during decommissioning as part of site security, storage and staging areas. The Applicant proposes the implementation of the following Applicant proposed Measures/Project Design Features to reduce decommissioning night lighting impacts:

- All lighting at decommissioning and storage yards and staging areas on all CUPs (13-0036 thru 13-0052) shall be designed and installed such that light bulbs and reflectors would not be visible from public viewing areas, and would not cause reflected glare.

Implementation of this project design feature would minimize illumination of storage yards and staging areas on all CUPs (13-0036 thru 13-0052) during Project decommissioning. Furthermore, decommissioning activities will not result in major sources of glare. Thus, impacts associated with a substantial increase in new sources of light and glare associated are considered **less than significant** for both the Full Build-out Scenario and the Phased CUP Scenario during Project decommissioning.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

4.1.4 CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

A. CUMULATIVE SETTING

The geographic scope for the cumulative setting for aesthetics, light, and glare encompasses lands within a 5-mile radius of the proposed Project area. In a larger context, the cumulative setting also includes proposed, approved and reasonably foreseeable Projects identified in Table 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used.

B. CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Visual and Light and Glare Impacts

Impact 4.1.4 The incremental effect of implementation of the proposed Project in conjunction with proposed, approved and reasonably foreseeable Projects in the vicinity of the Project area would not significantly alter the overall character of the Project area, which already consists of a pattern of agricultural fields and solar generation fields. There are not a large number of residents in the area and the agricultural land is not considered a significant visual resource nor are there any scenic resources or substantial sources of light and glare

in the Project area. Therefore, cumulative impacts to visual resources, light and glare are considered **less than cumulatively considerable**.

FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

Within the geographic scope, several other solar projects are either under construction or are proposed to be built in the general area or immediately adjacent to the proposed Project area. These solar projects include Imperial Solar Energy Center West, Campo Verde Solar Energy, Centinela Solar Energy, ISECS, Rockwood Solar, Lyons Solar, Ferrell Solar, Iris Solar, and the Calexico and Mount Signal Solar Farms (refer to Figure 3.0-1 in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used). All of the cumulative solar projects considered would be located in the area to the southwest of the New River and immediately to the west, south, and east of the proposed Project, which the exception of Imperial Solar 1, located approximately 3 miles to the west of the proposed Project. All these projects are located in an area with extremely low density of housing. Thus, although views from the proposed solar field site parcels would be changed from agricultural land to solar energy facilities, a large number of viewers would not be affected. Furthermore, the solar panels grid and row-like structure is consistent with the existing configuration of row crops and agricultural fields in the area. Moreover, neither the combined effect of the solar development projects and the reasonably foreseeable projects nor the incremental effect of the proposed Project would result in the loss of scenic views, cause damage to a scenic resource, or compromise the aesthetic of an otherwise outstanding landscapes or features of high aesthetic value. Because there are only distant views of mountains from the Project area and surrounding area, the contribution of the proposed Project to changes in the visual character of the area would be **less than cumulatively considerable**.

Construction

Scenic Vistas and Visual Character

The proposed Project area is surrounded by mostly agricultural land with no scenic vistas or outstanding aesthetic features. The proposed Project may be developed as 17 individual CUPs or the Full Build-out Scenario may be built at one time. Either method would result in short-term changes to the visual character of the solar field site parcels associated with the presence of equipment, site clearance, and solar facility installation. However, the exposure to visual changes for a KOP proximate to construction would be limited to either 18 months (for full build-out) or as few as seven months (individual CUP). Based on the limited duration and lack of scenic vistas, changes to visual character would be **less than cumulatively considerable** for both the Full-Build-out Scenario and the Phased CUP Scenario. Similarly, if other cumulative projects in the vicinity of the proposed Project are also under construction at the same time, the proposed Project's construction activities would result in a **less than cumulatively considerable contribution** to cumulative visual character impacts.

Light and Glare

As described under impact 4.1.3, short-term sources of lighting would be introduced to the Project area during construction in association with site security, materials storage and staging areas. However, the Applicant proposes that at all lighting at construction and storage yards and staging areas on all CUPs (13-0036 thru 13-0052) shall be designed and installed such that light bulbs and reflectors would not be visible from public viewing areas, and would not cause reflected glare. Impacts associated with light and glare are mitigated on a project-by-project basis. Therefore, impacts associated with a substantial increase in new sources of light and glare are considered **less than cumulatively considerable** during Project construction for both the Full-Build-out Scenario and the Phased CUP Scenario. Likewise, if other cumulative projects in the vicinity of the proposed Project are also under construction at the same time,

light and glare generated by the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative light and glare impacts.

Operation

Scenic Vistas and Visual Character

Operation of the proposed Project, in conjunction with existing, approved, proposed, and reasonably foreseeable Projects (identified in **Table 3.0-1** in Chapter 3.0, Introduction to the Environmental Analysis and Assumptions Used), would contribute to some changes to the character of the cumulative visual setting. However, each proposed, approved and reasonably foreseeable project is designed in grids of rows of solar panels that complement the row-like patterns of agricultural field crops in the area Additionally, the County of Imperial allows for development of parcels zoned for agriculture with issuance of a Conditional Use Permit, giving the County the authority to impose mitigation measures to reduce potentially significant impacts from any project on a project-by-project basis through such measures as screening and use of earth tone colors. Furthermore, each project has and is required to comply with setback requirements applicable to the agricultural zone. Finally, the projects in the vicinity have all been located in an area with extremely low density so the number of viewers impacted is very low. Accordingly, for all these reasons, the contribution of the proposed Project to changes in the visual character of the area would be **less than cumulatively considerable** for both the Full-Build-out Scenario and the Phased CUP Scenario. Similarly, if the operational life other cumulative projects in the vicinity of the proposed Project occur simultaneous with the proposed Project, operational activities would result in a **less than cumulatively considerable contribution** to cumulative visual character impacts because visual impacts are mitigated on a project-by-project basis.

Light and Glare

Light and glare impacts are typically addressed through the use of non-reflective building materials, installing light fixtures that point downward or shielding light sources. No substantial increase in light or glare would occur in association with the proposed Project.

The PV or CPV panels would cover the majority of the solar field site parcels. The PV or CPV panels are non-reflective and none of the materials proposed are anticipated to generate light and glare. Similar conditions are anticipated for other solar projects within the geographic scope and as identified in **Table 3.0-1**. All projects are required to comply with the County's lighting ordinance to avoid excessive illumination and light spillage on adjacent properties. The portion of the County where the Project is proposed is largely undeveloped and unlit. Lighting proposed for the Project will be pointed downward and shielded to focus illumination only on the desired areas. Therefore, impacts associated with a substantial increase in new sources of light and glare are considered **less than cumulatively considerable** during Project operation for both the Full-Build-out Scenario and the Phased CUP Scenario. Likewise, if other cumulative projects in the vicinity of the proposed Project are also operational simultaneous with the proposed Project, light and glare generated by the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative light and glare impacts.

Decommissioning

Scenic Vistas and Visual Character

Decommissioning of the proposed Project would be implemented as 17 individual CUPs or the Full Build-out Scenario. Either method would result in short-term changes to the visual character of the Project area associated with the presence of equipment and decommissioning activities. As with construction, , changes to visual character would be **less than cumulatively considerable** based on the limited duration of these activities. Similarly, if other cumulative projects in the vicinity of the proposed Project are also

undergoing decommissioning at the same time, the proposed Project's decommissioning activities would result in a **less than cumulatively considerable contribution** to cumulative visual character impacts.

Light and Glare

As with construction, short-term sources of lighting would be present in the Project area during decommissioning activities in association with site security, materials storage and staging areas. However, the Applicant proposes that at all lighting on all CUPs shall be designed and installed such that light bulbs and reflectors would not be visible from public viewing areas, and would not cause reflected glare. Impacts associated with light and glare are mitigated on a project-by-project basis. Therefore, impacts associated with a substantial increase in new sources of light and glare are considered **less than cumulatively considerable** during Project decommissioning for both the Full-Build-out Scenario and the Phased CUP Scenario. Likewise, if other cumulative projects in the vicinity of the proposed Project are also undergoing decommissioning activities at the same time, light and glare generated by the proposed Project would result in a **less than cumulatively considerable contribution** to cumulative light and glare impacts.

Mitigation Measures

None required

Significance After Mitigation

Not Applicable