SECTION 4.14
ENERGY

4.14 ENERGY CONSERVATION

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include: 1) decreasing overall per capita energy consumption; 2) decreasing reliance on non-renewable fossil fuels such as coal, natural gas and oil; and 3) increasing reliance on renewable energy sources. In order to assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code [PRC] section 21100(b)(3)).

The Drew Solar Project (i.e. proposed Project or Project) consists of a proposal to develop a renewable energy generation and storage facility employing photovoltaic (PV) solar technology. The Project proposes development of the facility over five phases that would collectively generate approximately 100 MW of renewable energy. The ultimate energy output is dependent on several variables, including off-take arrangements and the evolving efficiency of PV panels. As a result, the Project could generate more or less than 100 MW of renewable energy.

The Applicant has submitted six CUP applications to the County to allow for the development of the six Project Site parcels (solar field site parcels) as a solar energy facility. Five of the CUP applications are for the development of solar energy generation facilities on agriculturally-zoned land, and the sixth is to also allow for energy storage facilities. Each of the CUP Areas may incorporate some amount of energy storage along with the energy generation panels. Energy stored may be generated on-site or be imported from the electrical grid. In general, energy storage works to resolve grid reliability issues or to shift energy from times of abundance to times of need. Times of abundance generally occur when renewable energy is plentiful and times of need are generally occur either in the early morning hours or late evening hours when there is less renewable energy on the grid.

To accomplish the goal of decreasing reliance on fossil fuels and increasing reliance on renewable energy, on-site energy storage systems are proposed in place of a gas fired peaker to meet consumers demand when renewable energy sources are not available. Current battery energy storage systems have round trip efficiencies of about 85 percent. Therefore, approximately 15 percent of the energy consumed is lost during the consumption and discharge process. These losses were not considered in the calculations below (**Table 6.0-2** through **Table 6.0-5**) because energy storage would not be constructed except to enable a more efficient use of renewable energy.

Implementation of the Project would result in production of renewable solar energy that would help the State of California meet its goals for reducing reliance on fossil fuels and increasing use and production of and reliance on alternative renewable energy sources.

4.14.2 ENERGY BACKGROUND

The study area for energy resources includes the entire State of California. The following sections describe the electricity supply in California and summarize California's status in achieving statewide renewable energy goals.

A. CALIFORNIA'S ENERGY SUPPLY

In 2002, California established its Renewable Portfolio Standard (RPS) program with the goal of increasing the annual percentage of renewable energy in the state's electricity mix by the equivalent of at least one percent of sales, with an aggregate total of 20 percent by 2017. The California Public Utilities Commission (CPUC) subsequently accelerated that goal to 2010 for retail sellers of electricity (Public Utilities Code [PUC] Section 399.15(b)(1)). Governor Schwarzenegger signed EO S-14-08 in 2008, increasing the target to 33 percent renewable energy by 2020. Specifically, California's RPS requires retail sellers [investor-

owned utilities (IOUs), electric service providers (ESPs) and community choice aggregators (CCAs)] regulated by the CPUC to procure 33 percent of annual retail sales from eligible renewable sources by 2020. In 2015, Senate Bill 350 enhanced the requirement, requiring IOUs, publicly owned utilities, ESPs, and CCAs to increase procurement from eligible renewable energy resources to 50 percent of total procurement by 2030. The CPUC and the California Energy Commission (CEC) are jointly responsible for implementing California's 50 percent RPS program. In 2016, California's three large IOUs, Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E), collectively served 34.76 percent of their 2016 retail electricity sales with renewable power (CPUC 2018).

In 2016, Californians consumed 284,060 Gigawatt-hours (GWh) of electricity, and 12,750 million therms of natural gas (CEC 2018a). The IID, the provider of electricity to the County of Imperial, uses a comprehensive energy strategy that relies on expansion of customer energy efficiency and demand-side management programs to meet its customers' future power needs in ways that are consistent with the State's Energy Action Plan. The strategy also includes securing additional renewable power resources before seeking to meet customer energy needs through efficient traditional generation sources.

B. Energy Resources

Issues related to energy use include the levels of consumption of non-renewable and renewable energy sources for the construction, operation, and decommissioning/reclamation of the Full Build-out Scenario and all CUP Areas (CUP#17-0031 thru CUP#17-0035 and CUP#18-0001) which comprise the Phased CUP Scenario.

Transportation energy use is related to the following factors: the efficiency of automobiles, trucks, off-road equipment, and other mobile transportation; the choice of employee travel mode (automobile, carpool, or public transit); and miles traveled for each mode. Energy would also be consumed with construction equipment and routine operation activities, and decommissioning activities associated with both the Full Build-out Scenario and Phased CUP Scenario.

C. California Building Standards Code (Title 24, California Code Of Regulations)

California Code of Regulations (CCR), Title 24, also known as the California Building Standards Code, is a compilation of three types of building criteria from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions; and
- Building standards, authorized by the California legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

Notwithstanding, the national model code standards adopted into Title 24 apply to all occupancies in California except for modifications adopted by state agencies and local governing bodies. Title 24 applies to all building occupancies, and related features and equipment throughout the state, and contains requirements to the structural, mechanical, electrical, and plumbing systems, and requires measures for energy conservation, green design, construction and maintenance, fire and life safety, and accessibility. California's Building Standards Code and Green Building Standards Code are updated on an approximately

three-year cycle. The 2016 California Building Standards Code and 2016 Green Building Standards Code went into effect on January 1, 2017 and are currently in the process of a 2018 update (CBSC 2018).

Cities and counties are required by state law to enforce CCR Title 24 (reference Health and Safety Code Sections 17958, 17960, 18938(b), & 18948). The proposed O&M building(s) will need to comply with Title 24. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. California's Building Energy Efficiency Standards are also updated on an approximately three-year cycle. The effective date of the 2016 Standards was January 1, 2017 (CEC 2018b).

4.14.3 ENERGY THRESHOLDS AND ENERGY RESOURCE IMPACTS

A. ENERGY THRESHOLDS

To ensure energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential impacts of proposed projects, with particular emphasis on avoiding or reducing wasteful, unnecessary, or inefficient use of energy resources. Accordingly, this section assesses the potential impacts of construction, operation, and decommissioning/reclamation of the Project on energy resources based on Appendix F, Energy Conservation, of the State CEQA Guidelines.

Environmental effects may include the Project's energy requirements and its energy use efficiencies by amount and fuel type during construction, operation and decommissioning; the effects of the Project on local and regional energy supplies; the effects of the Project on peak and base period demands for electricity and other forms of energy; the degree to which the Project complies with existing energy standards; the effects of the Project on energy resources; the Project's projected transportation energy use requirements; and its overall use of efficient transportation alternatives, if applicable. The discussion of energy resources impacts collectively addresses these topics while specifically addressing CEQA Guidelines, Appendix G. The Project would result in a significant impact to energy resources if it would result in any of the following:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

B. ENERGY RESOURCES IMPACTS

Use of Energy Resources During Project Construction and Operation

Impact 4.14.1 Energy requirements for construction, operation, and decommissioning of the Project under the Full Build-out Scenario and all CUP Areas (CUP#17-0031 thru CUP#17-0035 and CUP#18-0001) as proposed under the Phased CUP Scenario would not result in inefficient energy use by amount or fuel type. Therefore, the Project would therefore have a **less than significant impact** on energy use by amount or fuel type.

FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

Construction

Construction energy refers to the energy required to construct the proposed Project. Energy would be required for site preparation activities such as light grading and compaction, as well as for demolition of the landowner irrigation ditches that are located within the boundary of each CUP Area that would conflict with the site's configuration. Other energy consumption also includes changes in energy demand due to transportation of building materials and construction of buildings and infrastructure on the Project site. Indirect energy consumption from the production of fuel as well as transportation/transmission services

for end users is too speculative to consider in this analysis because the data need to quantify this information is neither readily available nor reliable.

Project construction under both the proposed Full Build-out Scenario and Phased Buildout Scenario would result in a new single switchyard common to all CUP Areas. Alternatively, each CUP Area may independently construct a 230-kilovolt (kV) step-up transformer and switchyard. The Project would also include additional auxiliary facilities such as raw water/fire water storage, treated water storage, water filtration buildings and equipment, equipment control buildings, on-site septic system(s) and parking. All of these construction activities would require the use of energy.

Natural-gas fired and electrically-powered equipment or vehicles are not expected to be used during construction of the proposed Project. Thus, there would not be a need for new or substantially altered electrical power or natural gas utility systems during construction. Construction equipment and vehicles would use diesel fuel and gasoline in customary ways during the construction process. **Table 4.14-1** includes a summary of the types and pieces of equipment associated with construction.

TABLE 4.14-1
SUMMARY OF EQUIPMENT BY USE AND NUMBER

Equipment Type	Quantity
Site Preparation	
Graders	1
Scrapers	1
Brush Chippers	1
Rubber Tired Dozers	1
Water Trucks	1
Facility Installation	
Excavator	2
Mast Pile Drivers	10
Rough Terrain Forklifts	10
Trenchers	1
Water Trucks	1

Source: Recon 2018a, p. 36.

As shown, a variety of equipment would be needed in association with various aspects of Project construction. Worker and construction truck traffic would generate 436 Average Daily Trips (ADT; LOS 2018 p. 15). These trips would be generated along designated Project haul routes during construction. However, use of gasoline and diesel in association with worker trips and equipment operation is not considered a wasteful use of energy resources. This is because the Project will use energy-conserving construction equipment, including standard mitigation measures for construction combustion equipment recommended in the ICAPCD CEQA Air Quality Handbook and discussed in Section 4.4, Air Quality of this EIR. The use of better engine technology, in conjunction, with the ICAPCD's standard mitigation measures will reduce the amount of energy used for the projects. The standard mitigation measures for construction combustion equipment include:

- Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.
- Minimize idling time, either by shutting equipment off when not in use or reducing the time of idling to five minutes at a maximum.

- Replace fossil-fueled equipment with electrically driven equivalents (assuming powered by a portable generator set and are available, cost effective, and capable of performing the task in an effective, timely manner).

Furthermore, vehicle trips would be limited to construction workers and equipment traveling to and from the Project site (i.e. no wasteful trips). As Project construction activities represent a necessary, one-time expenditure of non-renewable energy in order to achieve a new source of renewable solar energy that would generate electricity for approximately 30 years, the associated energy use is not considered wasteful. Thus, construction under both the Full Build-out Scenario and Phased CUP Scenario would create a **less than significant** impact on energy requirements and energy use efficiencies by amount and fuel type.

Operation

During Project operation, energy would be used at O&M buildings, for security lighting, and operational vehicular traffic. The majority of fuel consumption associated with Project operation under the Full Build-out Scenario and Phased CUP Scenario would involve the use of motor vehicles by employees that operate and maintain the solar facilities. The Project will have approximately six full-time personnel and generate up to 20 ADT (conservatively based on ten full-time personnel; LOS 2018), which will not result in the use of significant amounts of fuel, particularly considering the size and scope of the Project.

There would also be an increase in diesel fuel usage associated maintenance equipment during Project operation under both the Full Build-out Scenario and Phased CUP Scenario. The Project does not propose use of natural gas. While diesel fuel is a non-renewable resource, the use of diesel fuel to operate and maintain a solar energy generation facility that enables the County and State to comply with the requirements of the AB 2076 regulation (i.e., CEC and CARB strategy to reduce petroleum dependence) is not considered a wasteful or inefficient use of energy resources. Further, as a renewable energy generation facility, the Project would contribute to California's supply of non-fossil fuel energy resources over the long-term. The Project would also incorporate energy efficient measures in the O&M building(s) (i.e. energy efficient light bulbs).

It should also be noted that the Project will generate its own solar energy to serve much of its operational energy needs. The Project proposes solar facilities that, once operational, would only require energy consumption for the operation of conversion and transmittal facilities, O&M buildings operations, panel washing, and maintenance of Project roadways. During the day much of the on-site power will be provided by the Project itself. In the evening hours, the transmission facilities proposed by the Project to export power would also be used to supply a back-feed of power from IID to the Project Site to operate the O&M building(s) and keep the inverters warm. Through back-feed, on-site power needs are partially satisfied by the renewable energy generated by the Project.

The Project operational energy use for the typical CUP Area (CUP#17-0031 thru CUP#17-0035 and CUP# 18-0001) is estimated at 687 megawatt hours (MWh) per year (see total kw in Table 6.0-4 and 6.0-5: [0.3 kw + 1.584 kw] x 365 = 687 MWh per year) (Drew Solar 2018b). According to the CEC, in 2016 Imperial County used 1,419,155,125 MWh (CEC 2018a). The operational energy consumption for a typical CUP would therefore be approximately 0.000048 percent ([687 MWh per year ÷ 1,419,155,125 MWh] x 100 = 0.000048) of the Imperial County consumption.

The Project's operational energy use under the Full Build-out Scenario is estimated at 1,449.78 MWh per year (see total kw in Table 6.0-2 and 6.0-3: [0.3 kw + 3.672 kw] x 365 = 1,449.78 MWh per year) (Drew Solar 2018b). The operational energy consumption under the Full Build-out Scenario would therefore be 0.00010 percent ([1,449.78 ÷ 1,419,155,125] x 100 = 0.00010) of the 2016 Imperial County consumption. However, the proposed Project is a PV solar energy generation and storage facility, producing renewable

energy. Annual energy production from the completed 100 MW Full Build-out Scenario would likely be approximately 306,000 MWh[1] (Drew Solar 2018b). Therefore, the Full Build-out Scenario would result in an increase to the State's renewable energy supply. The Project's features described above, as well as the Project's contribution towards compliance with the State's RPS policies and implementation programs, taken as a whole, would ensure that the proposed Project is operated in a manner that does not use fuel or energy in a wasteful manner. Additionally, because the proposed Project would result in an increase in renewable energy supply and use of gasoline and diesel during Project operations would be minimal and in support of the creation of renewable energy, impacts related to efficient use of electricity and diesel fuel during Project operations would be **less than significant**.

Decommissioning/Reclamation

Similar to Project construction, decommissioning/reclamation under the Full Build-out Scenario and Phased CUP Scenario would require energy in the form of gasoline and diesel fuel for worker vehicles, equipment and water for controlling dust. These activities would be carried out as efficiently as possible by minimizing idling time, either by shutting equipment off when not in use or reducing the time of idling to five minutes at a maximum. Where possible, replacement of fossil-fueled equipment with electrically driven equivalents (assuming powered by a portable generator set and are available, cost effective, and capable of performing the task in an effective, timely manner) would also be used to reduce the use of diesel and gasoline. The use of diesel fuel and gasoline as part of Project decommissioning is not considered a wasteful use of energy resources because these activities represent an efficient and necessary use of energy.

Decommissioning/reclamation under the Full Build-out Scenario and by CUP Area (CUP 17-0031 thru CUP 17-0035 and CUP 18-0001) as proposed under the Phased CUP Scenario would be a necessary, one-time expenditure of non-renewable energy in order to implement the Reclamation Plan and restore the solar field site parcels to a condition suitable for future agricultural uses. Thus, decommissioning under both the Full Build-out Scenario and Phased CUP Scenario would create a **less than significant** impact on energy requirements and energy efficiency by use and fuel type.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Consumption of Energy - Effects on Local and Regional Energy Supplies

Impact 4.14.2 The proposed Project, whether implemented under the Full Build-out Scenario or the Phased CUP Scenario, would not use substantial amounts of local and regional energy supplies or create requirements for additional capacity. Therefore, the Project's impact on local and regional energy supplies would be **less than significant**.

Construction

As described under Impact 4.14.1, construction of the proposed Project would require a one-time expenditure of non-renewable fossil fuels (diesel and gasoline). Based on the size of the Project (855 gross acres), the limited duration of construction (18 months under the Full Build-out Scenario or phased over 10 years, with each of the six individual CUP Areas taking approximately seven months under the Phased CUP Scenario), and the availability of diesel fuel and gasoline, the Project would not have a significant

[1] Calculated by Drew Solar engineers using a program called "PV Syst" based on numerous variables.

impact on local and regional energy supplies. Moreover, the Project, whether constructed under the Full Build-out Scenario or the Phased CUP Scenario, would implement energy efficiency measures during construction including use of alternative fueled or catalyst equipped diesel construction equipment, minimizing idling time, etc.

All of these measures would serve to reduce fossil-fuel use and minimize the waste of energy. Thus, construction under both the Full Build-out Scenario and Phased CUP Scenario would create a **less than significant** impact on local and regional energy supplies or create or contribute to the need for additional capacity.

Operation

The Project will ultimately generate more or less than 100 MW of renewable energy. Implementation of the Project would result in production of renewable solar energy that would help the State of California meet its goals for reducing reliance on fossil fuels and increasing reliance upon and use and production of renewable energy sources. The Project proposes solar facilities that, once operational, would only require energy consumption for the operation of conversion and transmittal facilities, O&M buildings operations, panel washing, and maintenance of Project roadways. During the day, the on-site power would be provided by the Project itself. In the evening hours, the transmission facilities proposed by the Project to export power would be used to supply a back-feed of power to the Project Site from IID to operate the O&M building(s) and keep the inverters warm. Through back-feed, on-site power needs would be partially satisfied by the renewable energy generated by the Project. Therefore, the Project will have a **less than significant impact** on local and regional energy supplies and the need for additional capacity during operation.

Decommissioning/Reclamation

Similar to Project construction, decommissioning/reclamation under both the Full Build-out Scenario and Phased CUP Scenario would require energy in the form of gasoline and diesel fuel for worker vehicles, equipment and water for controlling dust. Likewise, as with construction, decommissioning/reclamation would occur for a limited duration over a limited area and is not anticipated to have a significant impact on local and regional energy supplies based on the availability of diesel fuel and gasoline.

Again, as with construction, mitigation measures would be implemented during decommissioning, to reduce wasteful or inefficient use of energy (e.g. shutting equipment off when not in use, reducing the time of idling to five minutes at a maximum, etc.). Therefore, decommissioning under both the Full Build-out Scenario and Phased CUP Scenario would create a **less than significant** impact related to local and regional energy supplies and the need for additional capacity.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Consumption of Energy - Effects on Peak and Base Period Demands

Impact 4.14.3 The proposed Project would not impose additional demands on peak and base period demands for electricity and other forms of energy. To the contrary, under both the Full Buildout Scenario and the Phased CUP Scenario, the Project would contribute electricity during peak and base period demands. Therefore, the Project's impact on peak and base period demands for electricity and other forms of energy would be **less than significant**.

Construction

IID typically determines its ability to provide temporary electricity for construction shortly before start of construction. In the event that IID is not able to provide temporary electricity during construction, the Project will utilize generators (Ferrara, pers. comm., 2018). Use of diesel fueled generators would occur for a limited duration during Project construction. As no electric infrastructure is in place to accommodate construction activities, the proposed Project would not impose demands on peak and base period demands for electricity. Diesel fuel is a readily available fuel source and as discussed above, will be used in an efficient and non-wasteful manner. Therefore, the proposed Project, whether implemented under the Full Build-out Scenario or the Phased CUP Scenario, would result in a **less than significant impact** on peak and base period demands for electricity and other forms of energy during construction.

Operation

As discussed above under Impact 4.14.1, operational energy use for the typical CUP (CUP#17-0031 thru CUP#17-0035 and CUP# 18-0001) is expected to be at 687 megawatt hours per year (MWh/year) and 1,449.78 MWh/year under the Full Build-out Scenario. Energy use by a typical CUP Area would represent approximately 0.000048 percent of Imperial County's 2016 1,419,155,125 MWh use; energy use under the Full Build-out Scenario would represent approximately 0.0001 percent of Imperial County's 2016 1,419,155,125 MWh use.

Tables 4.14-2 and 4.14-**3** provide the energy usage during generating and non-generating hours for the Full Build-Out Scenario; **Tables 4.14-4** and **4.14-5** provide the energy usage during generating and non-generating hours for the Phased CUP Scenario. As shown, each unit would result in similar generating and non-generating hours.

TABLE 4.14-2
ENERGY CONSUMPTION - GENERATING HOURS - FULL BUILD-OUT SCENARIO

Unit Description	Number of Units	Power Requirements Per Unit (W)	Total Power Consumption (kw)
Solar Arrays	100	0	0
Substation	1	0	0
O&M Building	1	20,000	20
Miscellaneous	1	5,000	5
Total Power Consumption (kw)			25
Total Electric Consumption over 12 Hours (MWh)			0.3

Source: (Drew Solar 2018b)

TABLE 4.14-3
ENERGY CONSUMPTION - NON-GENERATING HOURS - FULL BUILD-OUT SCENARIO

Unit Description	Number of Units	Power Requirements Per Unit (W)	Total Power Consumption (kw)
Solar Arrays	100	0	235
Substation	1	0	46

TABLE 4.14-3
ENERGY CONSUMPTION - NON-GENERATING HOURS - FULL BUILD-OUT SCENARIO

Unit Description	Number of Units	Power Requirements Per Unit (W)	Total Power Consumption (kw)
O&M Building	1	20,000	20
Miscellaneous	1	5,000	5
Total Power Consumption (kw)			306
Total Electric Consumption over 12 Hours (MWh)			3.672

Source: Drew Solar 2018b.

The Full Build-out Scenario would use 0.3 MWh during generating and 3.67 MWh during non-generating hours (Drew Solar 2018b), which is substantially less than the County's overall 2016 energy usage 1,419,155,125 MWh (CEC 2018a).

TABLE 4.14-4
ENERGY CONSUMPTION - GENERATING HOURS – PHASED CUP SCENARIO

Unit Description	Number of Units	Power Requirements Per Unit (W)	Total Power Consumption (kw)
Solar Arrays	100	0	0
Substation	1	0	0
O&M Building	1	20,000	20
Miscellaneous	1	5,000	5
Total Power Consumption (kw)			25
Total Electric Consumption over 12 Hours (MWh)			0.3

Source: Drew Solar 2018b.

TABLE 4.14-5
ENERGY CONSUMPTION - NON-GENERATING HOURS – PHASED CUP SCENARIO

Unit Description	Number of Units	Power Requirements Per Unit (W)	Total Power Consumption (kw)
Solar Arrays	100	2,350	47
Substation	1	115,000	60
O&M Building	1	20,000	20
Miscellaneous	1	5,000	5
Total Power Consumption (kw)			132
Total Electric Consumption over 12 Hours (MWh)			1.584

Source: Drew Solar 2018b.

As shown in **Tables 4.14-4** and **4.14-5**, the Phased CUP Scenario would use 0.3 MWh during generating hours and 8.73 MWh during non-generating hours, which is substantially less than the County's 2016

overall energy usage of 1,419,155,125 MWh. Thus, Project implementation under both the Full Build-out Scenario and the Phased CUP Scenario would generate far more energy than the amount consumed in association with operation.

During operation, the proposed Project will generate its own power supply during the day. The Full Build-out Scenario would contribute approximately 100 MW, or approximately 20 MW per each of the six CUP Areas under the Phased CUP Scenario. This creation of renewable energy will contribute to the availability of energy during peak and base period demands providing a positive input to the existing system. Annual energy production from the completed 100 MW Full Build-out Scenario would likely be approximately 306,000 MWh[1] (Drew Solar 2018b). Therefore, the Full Build-out Scenario would result in an increase to the State's renewable energy supply.

In addition, the transmission facilities proposed by the Project to export power would be used to supply a back-feed of power to the Project Site from IID in the evening hours to operate the O&M building(s) and keep the inverters warm. The amount of electricity required under both the Full Build-out Scenario and Phased CUP Scenario would be more than off-set by the 100 MW the Project would generate. The O&M building(s) would be designed to meet the requirements of the California Building Code, which encompasses the California Energy Code. The Applicant would use energy efficient light bulbs, and energy efficient windows, insulation, etc. as required by the California Energy Code to minimize peak hour demands. Based on the Project's contribution of renewable energy supplies for use during peak and base periods of demand, the relatively small increases in electricity consumption during operation of the Project would have a **less than significant impact** on local or regional energy supplies and would not create a significant effect on either peak and base period demands for electricity and other forms of energy.

Decommissioning/Reclamation

As with construction, the Project would likely use diesel generator power for temporary portable construction trailer(s), and construction and decommissioning work where on-site electrical lines are not available. Use of either propane or diesel fuel would occur for a limited duration during Project decommissioning/reclamation and would be used in an efficient and non-wasteful manner. As no electric infrastructure is expected to be in place to accommodate decommissioning/reclamation activities, the proposed Project would not impose demands on peak and base period demands for electricity. Diesel is a readily available fuel source. Therefore, the proposed Project, whether decommissioned/reclaimed at one time under the Full Build-out Scenario or by each CUP Area under the Phased Build-out, Scenario would result in a **less than significant impact** on peak and base period demands for electricity and other forms of energy.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Conflict with or Obstruct State or Local Plan - Compliance with Existing Energy Standards

Impact 4.14.4 Implementation of the Full Build-out Scenario or the Phased CUP Scenario would comply with existing energy standards. The Project would result in production of renewable solar energy that would help the State of California meet its goals for use and production of alternative renewable energy sources. Therefore, the Project's impact on compliance with existing energy standards would be **less than significant**.

FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

The proposed Project is not subject to any adopted energy conservation plans, and thus would not conflict with existing energy standards. Any new electrical equipment installed for the proposed Project would be required to comply with established energy standards.

Compliance with State RPS Requirements

As discussed above, California's RPS, requires independently operated utilities and certain other electricity service providers to increase the percentage of renewable energy to 33 percent by 2020 and to 50 percent by 2030. Eligibility for the California RPS is primarily contingent on a facility's fuel source and its location. Renewable facilities that are located in California or have first point of interconnection to the electrical transmission system within the state are considered RPS eligible as long as the facility meets the fuel and technology-related requirements. The proposed Project is a solar energy generation and storage facility which would be eligible to be considered as an RPS source.

Energy would be consumed throughout the construction and operation of the proposed Project. Implementation of the proposed Project would result in a contribution of approximately 100 MW of renewable energy to California's energy supply, which would be a beneficial contribution toward meeting the RPS goals. Therefore, impacts related to compliance with existing energy standards, including California's RPS, would be **less than significant**.

General Plan Consistency

The Imperial County General Plan Overview states "The general plan seeks to direct growth, particularly urban development, to areas where public infrastructure exists or can be provided, where public health and safety hazards are limited, and where impacts to the County's abundant natural, cultural, and economic resources can be avoided. This directive nature of the general plan is needed in order to provide for the preservation and conservation of adequate scenic, recreational, and wildlife habitat open space, agricultural areas, mineral resources, and the air and water quality of the County" (Imperial County, 1997, p. 1).

The County's General Plan includes goals and objectives that are focused on improving the sustainability of the community, including those contained in the Renewable Energy and Transmission Element. These goals and objectives encourage development of renewable and alternative energy sources to support the County's economy and energy needs.

Goal 1 of the General Plan Conservation and Open Space Element (Imperial County 2016a), regarding conservation of environmental resources for future generations, directs that environmental resources shall be conserved for future generations by minimizing environmental impacts in all land use decisions. As a solar energy generation and storage facility, the proposed Project would protect environmental resources through the generation of approximately 100 MW of renewable energy that would otherwise be generated by non-renewable fossil fuels. Further, the Project site is located on active agricultural land, and would be required to reclaim the acreage for future agricultural use at the end of each CUP or 30 years, whichever is later. Therefore, the proposed Project is consistent with this goal.

Conservation and Open Space Element Objective 1.4 further expands upon Goal 1 ensuring the conservation, development and utilization of the County's natural resources. The Project is proposed to be developed on the disturbed soils of agricultural lands and therefore will not impact fragile desert habitats. In addition, the Project's configuration would be consistent with applicable regulations, Applicant-Proposed Measures (refer to Table 2.0-6 in Chapter 2.0, Project Description), and Project-specific mitigation measures designed to protect biological resources and water quality. The proposed

Project would provide a beneficial use of the land by creating local jobs during construction and to a lesser degree during operation. The proposed Project would also result in only a temporary conversion of agricultural lands with the required restoration of the solar field site parcels back to agricultural uses at the end of the Project's operational life thus assuring the conservation of valuable agricultural soils. During the life of the Project, the County's immense solar resource would be used for generation of clean electrical energy thus conserving air quality resources that would otherwise be polluted from fossil fuel emissions necessary to develop 100 MW of power. Therefore, the proposed Project is consistent with this objective.

Conservation and Open Space Element Objective 8.2 encourages focusing all new renewable energy development within adopted Renewable Energy Overlay Zones. Consistent with this objective, the Applicant has submitted an application for Amendment (GPA#17-0006) to the Imperial County General Plan for amendment of the Renewable Energy & Transmission Element to create an Island Overlay for the Project Site as well as a Zone Change (ZC#17-0007) to add the RE Overlay Zone to the Project Site. With approval of the GPA and ZC, the proposed Project will be consistent with this objective.

The Project site was chosen based on proximity to existing IID transmission lines and similar previously-approved solar projects. The Project proposes limiting Vehicle Miles Traveled (VMT) related to the construction, operation, and decommissioning of Gen-Tie lines by co-locating its Gen-Tie line with the nearby Centinela Solar Project.

Based upon these considerations, the Project, under both the Full Build-out Scenario and Phased CUP Scenario will have a **less than significant** impact on compliance with existing energy standards.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Energy Consumption - Effects on Energy Sources

Impact 4.14.5 Project implementation under the Full Build-out Scenario or the Phased CUP Scenario would not have an adverse effect on energy resources. The Project would create a new source of renewable energy resources. Therefore, the Project's effect on energy resources would be **less than significant**.

FULL BUILD-OUT SCENARIO/PHASED CUP SCENARIO

Construction

As described under Impact 4.14.1 and Impact 4.14.2, construction of the proposed Project would require a one-time expenditure of non-renewable fossil fuels (diesel and gasoline). However, the Project will have a less than significant effect on energy resources based its size (762.8 net acres), the limited duration of construction (18 months under the Full Build-out Scenario or at approximately seven months per CUP Area over 10 years under the Phased CUP Scenario), and the availability of diesel fuel and gasoline. Moreover, the Project, whether constructed under the Full Build-out Scenario or the Phased CUP Scenario, would implement energy efficiency measures during construction including use of alternative fueled or catalyst equipped diesel construction equipment, minimizing idling time, etc. All of these measures would serve to reduce energy use, whether fossil-fuel use or otherwise. Thus, construction under both the Full Build-out Scenario and Phased Buildout Scenario would have a **less than significant** impact energy resources.

Operation

As previously discussed under Impact 4.14.1, operational energy use for each typical CUP Area was estimated at 687 MWh/year and at 1449.78 MWh/year under the Full Build-out Scenario. The Project will generate its own power supply during the day and require minimal energy in the evening hours and at night. Annual energy production from the completed 100 MW Full Build-out Scenario would likely be approximately 306,000 MWh[1]. In contrast, upon build-out of the entire Project Site (Full Build-out Scenario), this represents approximately 0.5 percent ([1449.78 MWh ÷ 306,000 MWh[1]] x 100 = 0.5) of the Full Build-out Scenario's MWh. Further, energy use by a typical CUP Area represents approximately 0.000048 percent ([687 ÷ 1,419,155,125] x 100 = 0.000048) of Imperial County's 2016 energy use (1,419,155,125 MWh); the Full Build-out Scenario represents 0.00010 percent. Based on this information, both the Full Build-out Scenario and the Phased CUP Scenario would result in an overall increase to the State's renewable energy supply and beneficially contribute to IID local energy supplies. Therefore, impacts to energy resources are considered **less than significant** during operation of both the Full Buildout Scenario and the Phased CUP Scenario.

Decommissioning/Reclamation

As with construction, the Project would require temporary non-electrical use of energy including diesel, and gasoline. Use of these fuels would occur for a limited duration during Project decommissioning/reclamation. Propane, diesel and gasoline are readily available fuel sources that would be necessary in order to decommission and restore the solar field site parcels to pre-Project conditions. Therefore, the proposed Project, whether decommissioned/reclaimed under the Full Build-out Scenario or the Phased CUP Scenario, would result in a **less than significant impact** on energy resources.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.

Energy Consumption - Transportation Energy Use

Impact 4.14.6 Implementation of the Full Build-out Scenario or Phased CUP Scenario will generate minimal traffic during the operational phase. The Applicant will implement strategies to minimize transportation energy use and ensure overall use of efficient transportation alternatives, as appropriate. Therefore, the Project's impact on transportation energy would be **less than significant**.

Construction

Transportation energy use is related to the following factors: the efficiency of automobiles, trucks, off-road equipment, and other mobile transportation; the choice of employee travel mode (automobile, carpool, or public transit); and miles traveled for each mode. Energy would also be consumed by construction equipment used under both the Full Build-out Scenario and the Phased CUP Scenario.

As described under Impact 4.14.1, above, Project construction activities represent a necessary, one-time expenditure of non-renewable energy in order to achieve a new source of renewable solar energy that would generate electricity for approximately 30 years, the associated energy use is not considered wasteful. Construction energy expenditures would occur for a limited duration (e.g. 18-months for the Full Build-out Scenario) and would be minimized through implementation of standard mitigation measures identified to reduce amount of energy used for the projects (i.e. use of alternative fueled or catalyst equipped diesel construction equipment; minimize idling time; replace fossil-fueled equipment

with electrically driven equivalents). Energy can be saved through worker carpooling. The Applicant has indicated that worker carpooling will be encouraged during construction by hanging posters and having voluntary sign-up sheets available at the Project site and discussing carpooling at morning tailgate meetings and other team gatherings. Therefore, construction transportation and equipment energy impacts would be **less than significant** under both the Full Build-out Scenario and by each CUP Area as proposed under the Phased CUP Scenario.

Operation

Transportation energy would be consumed in association with routine operation activities required under both the Full Build-out Scenario and Phased CUP Scenario. Based on the small number of employees (six full-time) needed to operate the facility, transportation energy use would not be substantial and the implementation of transportation alternatives would not be practical or impactful on the environment. In addition, standard mitigations including use of alternative fueled or catalyst equipped diesel construction equipment; minimizing idling time; and replacing fossil-fueled equipment with electrically driven equivalents would also be applicable during Project operation and maintenance. For these reasons, operational transportation energy impacts would be **less than significant** under both the Full Build-out Scenario and Phased CUP Scenario.

Decommissioning/Reclamation

As with construction, transportation energy would be expended in association with worker and equipment trips as well as equipment use. Decommissioning/reclamation under both the Full Build-out Scenario and Phased CUP Scenario would require energy in the form of gasoline and diesel fuel for worker vehicles, equipment and water for controlling dust. These activities would be carried out as efficiently as possible by minimizing idling time, either by shutting equipment off when not in use or reducing the time of idling to five minutes at a maximum. Where possible, replacement of fossil-fueled equipment with electrically driven equivalents (assuming powered by a portable generator set and are available, cost effective, and capable of performing the task in an effective, timely manner) would also be used to reduce the use of diesel and gasoline. The Applicant has indicated worker carpooling will also be encouraged during decommissioning/reclamation activities.

The use of these diesel fuel and gasoline as part of Project decommissioning/reclamation is not considered a wasteful use of energy resources because these activities represent an efficient and necessary use of energy. Decommissioning/reclamation under the Full Build-out Scenario or Phased CUP Scenario would be a necessary, one-time expenditure of non-renewable energy in order to implement the Reclamation Plan and restore the solar field site parcels to pre-project soil conditions. Therefore, decommissioning transportation energy impacts would be **less than significant** under both the Full Build-out Scenario and the Phased Buildout Scenario.

Mitigation Measures

None required.

Significance After Mitigation

Not applicable.