4.14 UTILITIES/SERVICE SYSTEMS

This section includes an evaluation of potential impacts for identified Utilities/Service Systems that could result from implementation of the projects. Utilities/Service Systems include wastewater treatment facilities, storm drainage facilities, water supply and treatment, solid waste disposal, and energy consumption. The impact analysis provides an evaluation of potential impacts to Utilities/Service Systems based on criteria derived from the California Environmental Quality Act (CEQA) Guidelines in conjunction with actions proposed in Chapter 3, Project Description. Development Design & Engineering prepared a Water Supply Assessment (WSA) in July 2014 (updated November 2014) for the projects. The WSA is included as Appendix K of this Environmental Impact Report (EIR).

The Initial Study/Notice of Preparation (IS/NOP) prepared for this EIR determined that impacts with regards to solid waste disposal, storm drainage, and wastewater treatment would be less than significant. Solid waste generation would be minor for the construction and operation of the project. Trash is anticipated to be hauled to the Calexico Solid Waste Facility. This site has ample landfill capacity, and no anticipated closure date. The project does not require expanded or new storm drainage facilities (other than on-site detention areas) because the proposed solar facilities would not generate a significant increase in the amount of impervious surfaces that would increase runoff during storm events. Water from solar panel washing would continue to percolate through the ground, as a majority of the surfaces within the project sites would remain pervious. The project operations and maintenance (O&M) buildings will use septic systems, and would not exceed wastewater treatment requirements of the Regional Water Quality Control Board. Therefore, solid waste disposal, wastewater treatment, and storm drain facilities will not be discussed further. The IS/NOP is included in Appendix A of this EIR.

4.14.1 Environmental Setting

Water

The Imperial Valley area is located within the south-central part of Imperial County and is bound by Mexico on the south, the Algodones Sand Hills on the east, the Salton Sea on the north and San Diego County on the northwest, and the alluvial fans bordering the Coyote Mountains and the Yuha Desert to the southwest. This valley is an irrigated agricultural area. Approximately one-fifth of the nearly three million acres in Imperial County is irrigated for agricultural purposes, of which the majority are located within the Imperial Valley. The Imperial Valley area encompasses a total of 989,450 acres, of which 512,163 acres are irrigated. Imperial County's incorporated cities, unincorporated communities and supporting facilities, comprises approximately one percent of Imperial County's area, and the Salton Sea accounts for approximately 7 percent of Imperial County's surface area.

The source of nearly all surface waters in Imperial County is the Colorado River. The water is diverted from the Colorado River at the Palo Verde Weir north of Blythe by the Palo Verde Irrigation District for use in the Palo Verde Valley of northeast Imperial County and southeast Riverside County; and at the Imperial Dam into the All-American Canal by the Imperial Irrigation District (IID) and the Bard Irrigation District for use in the Imperial, Yuma, Bard, and Coachella Valleys. The 82-mile All-American Canal, the three-mile New Briar Canal, and 52 miles of drains are owned by the Bureau of Reclamation and are operated and maintained by IID. The IID serves irrigation water and electric power to farmers and residents in the lower southeastern portion of California's desert.

Approximately 97 percent of IID's water is used for agricultural purposes. The remaining 3 percent of its water deliveries supply seven municipalities, one private water company, two community water systems, as well as a variety of industrial uses and rural homes or businesses.

The IID has a specific area that it is responsible for supplying water to, which is referred to as the Imperial Unit. In addition to agricultural irrigation, the Imperial Unit includes the seven incorporated cities of Brawley, Calexico, Calipatria, El Centro, Holtville, Imperial and Westmorland. The three unincorporated communities in the Imperial Unit are Heber, Niland and Seeley.

Energy

The IID supplies electricity to Imperial County. IID's 2010 Integrated Resource Plan (IRP) addresses the current challenges to meet retail load requirements, adapt to new renewable energy portfolio standards and reduce greenhouse gas emissions. The IRP includes implementation of energy programs necessary to reduce current energy load by at least 5 percent by 2015, with a 10 percent reduction goal set for 2020. In addition, the Plan calls for generating 20 percent of energy requirements for its service area from renewable sources by 2012, 23 percent by 2014, 26 percent by 2017, and at least 33 percent by 2020; and reducing 2009 greenhouse gas emission levels by at least 35 percent by 2020. The IID is also implementing an energy efficiency program with the goal of reducing peak demand by up to 50 megawatts (MW) within five years (IID 2010).

4.14.1.1 Regulatory Setting

This section identifies and summarizes federal, state, and local laws, policies, and regulations that are applicable to the projects.

State

California Senate Bill 610

California Senate Bill (SB) 610 is an act that amended Section 21151.9 of the Public Resources Code (PRC), and Sections 10631, 10656, 10910, 10911, 10912, and 10915 of the Water Code. SB 610 repealed Section 10913, and added and repealed Section 10657 of the Water Code. SB 610 was approved by the Governor and filed with the Secretary of State on October 9, 2001, and became effective January 1, 2002.

Under SB 610, water supply assessments must be furnished to local governments for inclusion in environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to CEQA. Due to increased population, land use changes and water demands, this water bill seeks to improve the link between information on water availability and certain land use decisions made by cities and counties. As per California Department of Water Resources policy, "Even though a water supplier may not be a 'public water system' or become a 'public water system' as a result of serving the proposed project, it will still be involved, in a consultation role, in the preparation of the assessment." SB 610 takes a significant step toward managing the demand of California's water supply as it provides regulations and incentives to preserve and protect future water needs. The intent of this bill is to coordinate local water supply and land use decisions to help provide California's cities, farms, rural communities and industrial developments with adequate water supplies.

Project Determination According to SB 610

Senate Bill 610 – Water Supply Assessment

With the introduction of SB 610, any project under CEQA shall provide a WSA if:

- The project meets the definition of the Water Code Section 10912:

  For the purposes of this part, the following terms have the following meanings:

  (a) ''Project'' means any of the following:

  (1) A proposed residential development of more than 500 dwelling units.

  (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

  (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then ‘‘project’’ means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system’s existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system’s existing service connections.

After review of Water Code Section 10912, the solar facilities are deemed “projects” because they propose a demand of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project; and/or because they are a proposed industrial use occupying more than 40 acres of land.

It should be noted that California enacted SB 267, amending the California Water Code’s Section 10912 definition of a "project" that would trigger a WSA. The amended definition excludes low-water demand photovoltaic projects. Specifically, SB 267 states, "A proposed photovoltaic or wind energy generation facility approved on or after the effective date of the amendments made to this section at the 2011-12 Regular Session is not a project if the facility would demand no more than 75 acre-feet of water annually." (California Water Code §10912 (a)(5)(B). However, collectively, the proposed projects would create an annual water demand greater than 75 acre-feet; therefore, a WSA has been prepared for the projects. The WSA includes a collective assessment for the (FSF, RSF, ISF, and LSF.

California Water Code

California Water Code (Water Code) Sections 10656 and 10657 restrict state funding for agencies that fail to submit their urban water management plan to the Department of Water Resources. In addition, Water Code Section 10910 describes the WSA that must be undertaken for projects referred under PRC Section 21151.9, including an analysis of groundwater supplies. Water agencies are given 90 days from the start of consultation in which to provide a WSA to the CEQA lead agency. Water Code Section 10910 also specifies the circumstances under which a project for which a WSA was once prepared would be required to obtain another assessment. Water Code Section 10631, directs that contents of the urban water management plans include further information on future water supply projects and programs and groundwater supplies.

Urban Water Management Planning Act – Assembly Bill 797

The Urban Water Management Planning Act was established by Assembly Bill 797 (AB 797) on September 21, 1983. Passage of this law was recognition by state legislators that water is a limited resource and a declaration that efficient water use and conservation would be actively pursued throughout the state. The law requires water suppliers in California, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet per year (AFY) of water, to prepare and adopt a specific plan every five years which defines their current and future water use, sources of supply and its reliability, and existing conservation measures.

4.14.1.2 Existing Conditions

The project sites are currently undeveloped agricultural land. Existing agricultural water service at the project sites is currently provided via numerous IID canals. Estimated agricultural water consumption for the project sites based on 10 consecutive years of delivery records from IID is illustrated in Table 4.14-1.

TABLE 4.14-1. HISTORICAL ANNUAL WATER DELIVERY AVERAGE FOR PROJECT SITES (2001-2010)

Project Component	Annual Average (AFY)	10-Year Total (AFY)
FSF	1,931.7	19,317
RSF	1,899.4	18,994
ISF	2,506.8	25,068
LSF	532.3	5,323
Total	**6,870.2**	**68,702**

Source: Development, Design & Engineering 2014.

IID's Equitable Distribution Plan (revised October 28, 2013) apportions water to its municipal, commercial and industrial users prior to calculating the agricultural apportionment. The agricultural apportionment ranges from 2.86 AF/AC to 7.86 AF/AC for calendar year 2014. As demonstrated below, the historic annual average agricultural water usage is consistent with the range of these allocations:

Annual Water Usage for FSF

- 1,931.7 AFY ÷ 367.1 = **5.26 AFY**

Annual Water Usage for RSF

- 1,899.4 AFY ÷ 396.2 = **4.79 AFY**

Annual Water Usage for ISF

- 2,506.8 AFY ÷ 520.8 = **4.81 AFY**

Annual Water Usage for LSF

- 532.3 AFY ÷ 138.4 = **3.85 AFY**

Total Annual Water Usage for the Project Sites

- 6,870.2 AFY ÷ 1,422.4 = **4.83 AFY**

As previously discussed in Chapter 3.0, Project Description, up to four O&M buildings are contemplated for the project sites and would be located at each of the four solar facilities. Each O&M building would include its own emergency power, fire suppression, potable water system and septic system. Water would be used at FSF, RSF, ISF, and LSF to irrigate crop cover (used as a dust control measure), panel washing, domestic use, landscape irrigation, and fire suppression (for the O&M buildings).

The water for the projects will be supplied by IID. The IID's 2009 Interim Water Supply Policy (IWSP) allocates 25,000 AFY for non-agricultural projects, and is incorporated by reference into the Final Imperial Integrated Regional Water Management Plan (IRWMP). Of the IWSP's 25,000 AFY, IID has approved two water supply agreements totaling 1,809 AFY. IID recognizes having a remaining balance of IWSP water in the amount of 23,191 AFY.

Energy

The project sites are primarily undeveloped and utilized for agricultural production. There are a few residences and a farm shop located within the project area. Therefore, the site's current energy demand is minimal. The IID would provide electricity service to the project sites (i.e., during non-generating hours for the facility). IID meets its annual resource requirements through a mix of the IID-owned generation and a number of purchase power contracts that can take the form of must-take contracts and call options. The IID's generation resources range from hydroelectric resources on the All-American Canal System to San Juan Unit 3, a coal plant in New Mexico to the Palo Verdes Nuclear Generation Station near Phoenix. The IID also owns thermal generation facilities within its service territory, fueled by natural gas or diesel.

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal includes: decreasing overall per capita energy consumption; decreasing reliance on fossil fuels such as coal, natural gas, and oil; and increasing reliance on renewable energy sources.

4.14.2 Impacts and Mitigation Measures

This section presents the significance criteria used for considering project impacts related to utilities/service systems, the methodology employed for the evaluation, an impact evaluation, and mitigation requirements, if necessary.

4.14.2.1 Thresholds of Significance

Based on CEQA Guidelines Appendix G, project impacts related to utilities/service systems are considered significant if any of the following occur:

Water Supply

- Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

Energy

- Result in the need for new systems or supplies, or a substantial expansion or alteration to electricity, natural gas, or telephone that results in a physical impact on the environment.
- Result in inefficient energy uses of fuel type for each stage of the project including construction, operation, maintenance, and/or removal.
- Result in negative effects on local and regional energy supplies and require additional capacity.
- Result in increased effects to peak and base period demands for electricity and other forms of energy.
- Result in noncompliance with existing energy standards.
- Result in negative effects on energy resources.

As stated previously, it was determined through the preparation of the IS/NOP that impacts with regards to solid waste disposal and policies and wastewater treatment would be less than significant. Therefore, these issue areas will not be discussed further. Impacts associated with water quality are discussed in Section 4.9, Hydrology/Water Quality of this EIR.

4.14.2.2 Methodology

Project-specific data was used to calculate the projects water consumption during construction and at build-out collectively ("operational"). Imperial Unit water availability has been assessed for a 42-year projection (2015-2057), which is concurrent with the proposed construction and operational life of the projects. This EIR incorporates by reference previously prepared environmental documentation for other solar projects in the project vicinity including the Imperial Solar Energy Center South Environmental Impact Report (EIR)/Environmental Assessment (EA), and the Mount Signal and Calexico Solar Farm Projects Final EIR.

4.14.2.3 Impact Analysis

Water Supply

IMPACT 4.14-1 *Construction of New or Expansion of Existing Water Facilities.*

The projects would utilize water supply from an on-site water systems and small water treatment plant.

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Line

As discussed in Chapter 3.0 Project Description, O&M buildings are proposed for each of the projects. Each of the proposed O& M buildings would be a maximum of 5,000 square feet. . Above-ground water storage tank(s) with total capacity of up to approximately 80,000 gallons may be placed within the project area near the O&M buildings. The storage tank(s) near the O&M buildings will have the appropriate fire department connections in order to be used for fire suppression purposes. 10,000 gallons of water at each O&M site will be exclusively dedicated for O&M firefighting purposes, i.e., to protect the O&M building only. A small Point of Entry (POE) Water Treatment System may be required to reduce sediment levels prior to panel cleaning use and, if required, would be placed at the O&M building(s). The point of entry system requires filtration and disinfection treatment or an alternative treatment technology such as reverse osmosis. The proposed facilities would not require large parcels of land therefore, the water treatment facilities and storage tanks located within the project sites would not result in significant environmental impacts. Therefore, a **less than significant** impact is identified.

Mitigation Measure(s)

No mitigation measures are required.

IMPACT 4.14-2 *Increase in Water Demand.*

The projects would utilize water supply from an on-site water system with water supplies delivered from the Imperial Irrigation District (IID).

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Line

According to the WSA prepared by Development, Design & Engineering in July 2014, construction of the projects over a 2-year duration would require approximately 1,000 AFY of water (3.3 million gallons)[1] and operation of the projects would require approximately 520 AFY of water (1.7 million gallons) (see Tables 4.14-4, 4.14-6, 4.14-8 and 4.14-10). The WSA factored the construction water usage into the annual usage numbers provided in the discussion below. The WSA determined that construction (and operation) of the FSF, RSF, ISF, and LSF would not result in impacts to water supply. The WSA concluded that there is sufficient water to construct and operate the facilities because IID has a remaining balance in the amount of 23,191 AFY. Water would also be required during decommissioning of the projects and site restoration at the end of the project's 40-year life. However, it is anticipated that this water need would be

[1] * one acre-foot is 325,851 gallons

less than what is required for construction and operation of the projects. A **less than significant** impact is identified.

Table 4.14-2 provides a summary of the annual water use for the project study areas as a whole.

TABLE 4.14-2. SUMMARY OF ANNUAL WATER USE (PROJECT SITES)

Project Years	Total Annual Use
2015	1,000 AFY
2016	1,000 AFY
2017 - 2057 (Operation)	520 AFY

Source: Development, Design & Engineering 2014.

Operational Water Usage

As shown in Table 4.14-2, collectively, the projects are expected to use approximately 520 AFY of water for operational use. See Tables 4.14-4, 4.14-6, 4.14-8, and 4.14-10 for operational water use for each project site, respectively. Table 4.14-3 provides a comparison of the agricultural and operational water usage for the combined project sites. As shown in Table 4.14-3, the result is a decrease in usage at build-out during operation of 92.43% (+/-) when compared to the historical annual delivery average for the project sites under current agricultural production.

TABLE 4.14-3. AGRICULTURAL AND OPERATIONAL WATER USAGE COMPARISON FOR THE PROJECT SITES

		Proposed Projects			
		Construction (2 yrs)		Operation (2017 – 2057)	
	Agriculture	Use	Decrease (%)	Use	Decrease (%)
Annual Use	6,870 AFY	1,000 AFY	85.44%	520 AFY	92.43%

Source: Development, Design & Engineering 2014.

The WSA prepared by Development, Design & Engineering concluded that the IID's water supply in association with the IWSP is sufficient to meet the projects needs. Imperial Unit water availability has been assessed for a 42-year projection (2017-2057), which is concurrent with the proposed construction and operational life of the projects. Since industrial water users in the Imperial Unit have the second highest apportionment priority for water supply available for equitable distribution during years of supply-demand-imbalance, the projects' water supply from IID is considered to be reliable.

As mentioned previously, the IWSP allocates 25,000 AFY for non-agricultural projects, and these allocations are incorporated into the Final IRWMP. The WSA determined that IID has adequate polices, programs and projects in place to provide water to agricultural, commercial, industrial and municipal users in the Imperial Unit. Adequate supply is currently available, as well as during normal water years. IID's Equitable Distribution Plan (EDP) (October 2013) is considered to be sufficient to manage water supply during multiple dry water years. Conservation plans and measures are available to reduce the probability of supply demand imbalance from occurring.

The area that would be taken out of agricultural production as a result of the projects is estimated to use 6,870 AFY as farmland based on the calculations presented above, which uses a consumption rate ranging from 2.86 AF/AC to 7.86 AF/AC. Based on the history of water delivered to the same area by the IID from 2003-2013, on average the project sites have received 68,702 AFY. The project applicant proposes to use 520 AFY for operation of the projects. When compared to agricultural water usage for the project sites, the result is a decrease in usage at build-out during operation of approximately 92 percent (Table 4.14-3) when compared to existing conditions. Therefore, the impact is **less than significant.**

FSF

Table 4.14-4 summarizes the annual project construction and operational water use based on the information in the Chapter 3.0, Project Description and the WSA for the FSF facility. The facility is projected to have a 40-year life.

TABLE 4.14-4. ANNUAL PROJECT CONSTRUCTION AND OPERATIONAL WATER USE FOR FSF

Project Component	Project Years	Construction* (AFY)	Operational Use (AFY)	Total (AFY)
FSF	2015	500	68**	**568**
	2016-2056	N/A	136	**136**

Source: Development, Design & Engineering. 2014.
Notes: *Assumes 6-month construction window (Jan – June).
** Projected to use half of estimated annual usage due to 6 months of operation first year.

Table 4.14-5 provides a comparison of the agricultural water usage and operational water usage for FSF project site. As shown in Table 4.14-5, throughout operation, the FSF facility would use approximately 93 percent less water than the current agricultural production. Therefore, the impact is **less than significant**.

TABLE 4.14-5. AGRICULTURAL AND OPERATIONAL WATER USAGE COMPARISON FOR FSF

		Proposed Project - FSF			
		Construction (6 mos.)		Operation (2016 – 2056)	
	Agriculture	Use	Decrease (%)	Use	Decrease (%)
Annual Use	1,931.7 AFY	500 AFY	74.12%	136 AFY	92.96%

RSF

Table 4.14-6 summarizes the annual project construction and operational water use based on the information in the Chapter 3.0, Project Description and the WSA for the RSF facility. The facility is projected to have a 40-year life.

TABLE 4.14-6. ANNUAL PROJECT CONSTRUCTION AND OPERATIONAL WATER USE FOR RSF

Project Component	Project Years	Construction* (AFY)	Operational Use (AFY)	Total (AFY)
RSF	2015	500	74**	**574**
	2016-2056	N/A	147	**147**

Source: Development, Design & Engineering. 2014.
Notes: *Assumes 6-month construction window (Jan – June).
** Projected to use half of estimated annual usage due to 6 months of operation first year.

Table 4.14-7 provides a comparison of the agricultural water usage and operational water usage for RSF project site. As shown in Table 4.14-7, throughout operation, the RSF facility would use approximately 91 –percent less water than the current agricultural production. Therefore, the impact is **less than significant**.

TABLE 4.14-7. AGRICULTURAL AND OPERATIONAL WATER USAGE COMPARISON FOR RSF

		Proposed Project - RSF			
		Construction (6 mos.)		Operation (2016 – 2056)	
	Agriculture	Use	Decrease (%)	Use	Decrease (%)
Annual Use	1899.4 AFY	500 AFY	73.68%	174 AFY	90.84%

ISF

Table 4.14-8 summarizes the annual project construction and operational water use based on the information in the Chapter 3.0, Project Description and the WSA for the ISF facility. The facility is projected to have a 40-year life.

TABLE 4.14-8. ANNUAL PROJECT CONSTRUCTION AND OPERATIONAL WATER USE FOR ISF

Project Component	Project Years	Construction* (AFY)	Operational Use (AFY)	Total (AFY)
ISF	2016	500	97**	**597**
	2017-2057	N/A	193	**193**

Source: Development, Design & Engineering. 2014.
Notes: *Assumes 6-month construction window (Jan – June).
** Projected to use half of estimated annual usage due to 6 months of operation first year.

Table 4.14-9 provides a comparison of the agricultural water usage and operational water usage for ISF project site. As shown in Table 4.14-9, throughout operation, the ISF facility would use approximately 92 percent less water than the current agricultural production. Therefore, the impact is **less than significant**.

TABLE 4.14-9. AGRICULTURAL AND OPERATIONAL WATER USAGE COMPARISON FOR ISF

		Proposed Project - ISF			
		Construction (6 mos.)		Operation (2017 – 2057)	
	Agriculture	Use	Decrease (%)	Use	Decrease (%)
Annual Use	2506.8 AFY	500 AFY	80.05%	193 AFY	92.30%

LSF

Table 4.14-10 summarizes the annual project construction and operational water use based on the information in the Chapter 3.0, Project Description and the WSA for the LSF facility. The facility is projected to have a 40-year life.

TABLE 4.14-10. ANNUAL PROJECT CONSTRUCTION AND OPERATIONAL WATER USE FOR FSF

Project Component	Project Years	Construction* (AFY)	Operational Use (AFY)	Total (AFY)
LSF	2016	500	26**	**526**
	2017-2057	N/A	51	**51**

Source: Development, Design & Engineering. 2011.
Notes: *Assumes 6-month construction window (Jane – June).
** Projected to use half of estimated annual usage due to 6 months of operation first year.

Table 4.14-11 provides a comparison of the agricultural water usage and operational water usage for LSF project site. As shown in Table 4.14-11, throughout operation, the LSF facility would use approximately 93 percent less water than the current agricultural production. Therefore, the impact is **less than significant**.

TABLE 4.14-11. AGRICULTURAL AND OPERATIONAL WATER USAGE COMPARISON FOR LSF

		Proposed Project - LSF			
		Construction (6 mos.)		Operation (2017 – 2057)	
	Agriculture	Use	Decrease (%)	Use	Decrease (%)
Annual Use	532.3 AFY	500 AFY	6.07%	51 AFY	90.42%

Mitigation Measure(s)

No mitigation measures are required.

Energy Consumption

IMPACT 4.14-3 *Result in the Need for New Systems or Supplies, or a Substantial Expansion or Alteration to Electricity, Natural Gas, or Telephone.*

The projects include the construction of a large utility scale renewable energy facility and would not require a substantial expansion of new utility service.

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Line

As currently proposed, the power generated by the projects will be delivered to customers in San Diego Gas and Electric's (SDG&E) service territory. The projects would assist SDG&E in meeting California's mandate to procure 20 percent of its power from renewable resources. SDG&E has voluntarily committed to achieving 33 percent of its power from renewable resources by 2020. SDG&E's long-term plan includes a portfolio of renewable energy sources including biogas and biomass, geothermal, hydroelectric, wind, solar and fuel cells.

The electricity generation process associated with the projects would utilize solar technology to convert sunlight directly into electricity. Solar PV or CPV technology is consistent with the definition of an "eligible renewable energy resource" in Section 399.12 of the California Public Utilities Code and the definition of "in-state renewable electricity generation facility" in Section 25741 of the California Public Resources Code. The projects would generate and transmit renewable energy resources and is considered a beneficial effect rather than an impact. The use of energy associated with the projects includes both construction and operational activities. Construction activities typically include site grading, clearing, transmission line construction, and transmission tower placement. Operational activities would include energy consumption associated with vehicular use, and the O&M facility during generating and non-generating hours for the projects.

The projects would not use natural gas during the construction or operation of the projects. The O&M buildings would include telephone service; however, the usage would be minimal, limited to normal business hours and emergencies. The projects would not result in the need for additional natural gas or telephone facilities. Therefore, a **less than significant** impact is identified for this issue area.

Mitigation Measure(s)

No mitigation measures are required.

IMPACT 4.14-4 *Result in Inefficient Energy Uses of Fuel Type.*

The projects will require the consumption of fossil fuels during construction activities.

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Lines

Construction-Related Energy Consumption

Construction activities consume energy through the use of heavy construction equipment and truck and worker traffic. Table 4.14-12 provides a summary of the typical heavy equipment used during construction (see Section 3.4 of this EIR).

TABLE 4.14-12. CONSTRUCTION EQUIPMENT

Construction Phase	Equipment	Number
Grading/Clearing/Hauling	Front-end Loader	1
	Grader	1
	Water Truck	2
	Dump/Haul Trucks	4
	Scraper	1
Underground Utility Construction	Track-mounted excavators	1
	Loader/Drill	1
	Backhoe	2
	Water Truck	2
	Boring machine/drill rig	?
	Concrete Truck	8
	Compactor	1
	Dump/Haul Trucks	2
	Flat-bed delivery trucks	?
	Helicopters (transmission line stringing)	1
	Compressors/jack hammers	?
Solar System Installation	Hydraulic Crane	2
	Dump/Haul Trucks	4
	Paver and roller	1
	Flat-bed delivery truck	1
	Forklift	

The projects will use energy-conserving construction equipment, including standard mitigation measures for construction combustion equipment recommended in the Imperial County Air Pollution Control District CEQA Air Quality Handbook as discussed in Section 4.3, 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:

- Using alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel powered equipment.
- Minimizing idling time either by shutting equipment off when not in use or reducing the time of idling to five minutes as a maximum.
- Limiting the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replacing fossil fueled equipment with electrically driven equivalents (provided they are not run on a portable generator set).
- Construction equipment operating on-site should be equipped with two to four degree engine timing retard or precombustion chamber engines.
- Construction equipment used for the projects should utilize EPA Tier 2 or better engine technology.
- Keeping vehicles well maintained to prevent leaks and minimize emissions, and encourage employees to do the same.

Consistent with the intent of AB 32, the projects would demonstrate that there are policies in place that would assist in providing a statewide reduction in CO_2. The following greenhouse gas offset measures have been shown to be effective by CARB and would be implemented wherever possible.

Diesel Equipment (Compression Ignition) Offset Strategies (40% to 60% Reduction)

1. Use electricity from power poles rather than temporary diesel power generators.
2. Construction equipment operating on-site should be equipped with two to four degree engine timing retard or precombustion chamber engines.
3. Construction equipment used for the projects should utilize EPA Tier 2 or better engine technology.

Vehicular Trip (Spark Ignition) Offset Strategies (30% to 70% Reduction)

4. Encourage commute alternatives by informing construction employees and customers about transportation options for reaching your location (i.e. post transit schedules/routes).
5. Help construction employees rideshare by posting commuter ride sign-up sheets, employee home zip code map, etc.
6. When possible, arrange for a single construction vendor who makes deliveries for several items.
7. Plan construction delivery routes to eliminate unnecessary trips.
8. Keep construction vehicles well maintained to prevent leaks and minimize emissions, and encourage employees to do the same.

Implementation of ICAPCD's standard mitigation measures and the greenhouse gas offset measures listed above will ensure that the projects' energy consumption during construction is **less than significant**.

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Line

Operational-Related Energy Consumption

The U.S. Energy Information Administration reports the net energy generation for the state from all sources is approximately 199,518,567 megawatt-hours (MW-h). Tables 4.14-13 and 4.14-14 provide a typical scenario for energy usage during generating and non-generating hours for the proposed projects. Each component would result in similar generating and non-generating hours. These energy usage amounts would be the same for FSF, RSF, ISF, and LSF. The projects are expected to use approximately 3.99 MW-h during generating hours and 5.82 MW-h during the non-generating hours, which is substantially less than the overall state energy usage level. With the use of energy-saving light bulbs and other energy conservation measures, this minimal usage of energy would not result in a significant impact. Furthermore, the electricity generation process associated with the projects would use solar PV (or CPV) technology to convert sunlight directly into electricity. Solar PV (or CPV) technology is consistent with the definition of an "eligible renewable energy resource" in Section 399.12 of the California Public Utilities Code and the definition of "in-state renewable electricity generation facility" in Section 25741 of the California Public Resources Code. The projects would generate renewable energy resources and is considered a beneficial effect rather than an impact. The transmission lines would not result in operational energy consumption. Therefore, a **less than significant** impact is identified for operational-related energy consumption.

Mitigation Measure(s)

No mitigation measures are required.

TABLE 4.14-13. GENERATING HOURS (PEAK ELECTRICITY CONSUMPTION)

	No. of Units	Power Requirements per Unit (W)	Total Power Consumption (kW)
Inverters Tare Losses	200	140	28
Inverter HVAC	200	1,400	280
O&M Building	1	50,000	50
SCADA System	1	5,000	5
Total Power Consumption by Plant (kW):			363.0
Total Electrical Consumption over 11 Hours (MW-h):			3.99

Source: ISE 2000. Imperial Solar Energy Center South Final EIR/EA, Chapter 7, page 7-8.
Assumptions:
Maximum 200 MW_{AC} power production from facility.
Maximum 1000 kW_{AC} voltage inverter size.
HVAC systems required for cooling of inverter assemblies.
Daily total of 11 hours of generation, 13 hours of non-generation.

TABLE 4.14-14. NON-GENERATING HOURS (PEAK ELECTRICITY CONSUMPTION)

	No. of Units	Power Requirements per Unit (W)	Total Power Consumption (kW)
Inverters Tare Losses	200	140	28
Inverter HVAC	200	1,400	280
O&M Building	1	50,000	50
SCADA System	1	5,000	5
House Lighting	485	175	84.9
Total Power Consumption by Plant (kW):			447.9
Total Electrical Consumption over 13 Hours (MW-h):			5.82

Source: ISE 2000. Imperial Solar Energy Center South Final EIR/EA, Chapter 7, page 7-8.
Assumptions:
Maximum 200 MW_{AC} power production from facility.
Maximum 1000 kW_{AC} voltage inverter size.
HVAC systems required for cooling of inverter assemblies.
Daily total of 11 hours of generation, 13 hours of non-generation.

IMPACT 4.14-5 *Result in Negative Effects on Local and Regional Energy Supplies Requiring Additional Capacity.*

The projects are the construction of a large utility scale renewable energy facility and would therefore provide additional capacity to the regional supply.

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Line

The projects would assist SDG&E in meeting California's mandate to procure 20 percent of its power from renewable resources. SDG&E has voluntarily committed to achieving 33 percent of its power from renewable resources by 2020. SDG&E's long-term plan includes a portfolio of renewable energy sources including biogas and biomass, geothermal, hydroelectric, wind, solar and fuel cells. Please see analysis discussion under Impact 4.14-1 above. The projects would not result in negative effects on local and regional energy supplies requiring additional capacity. Therefore, a **less than significant** impact is identified.

Mitigation Measure(s)

No mitigation measures are required.

IMPACT 4.14-6 *Result in Increased Effects to Peak and Base Period Demands for Electricity and Other Forms of Energy.*

The projects would not result in increased effects to peak and base period demands for electricity and other forms of energy.

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Lines

Tables 4.14-13 and 4.14-14 above provide the expected energy usage during generating and non-generating hours for the proposed projects. Each component would result in similar generating and non-generating hours. These energy usage amounts would be the same for FSF, RSF, ISF, and the LSF. The projects would use 3.99 MW-h during generating hours and 5.82 MW-h during the non-generating hours, which is substantially less than the overall state energy usage level. With the use of energy-saving light bulbs and other energy conservation measures, this minimal usage of energy would not result in a significant impact. Furthermore, the electricity generation process associated with the projects would use solar PV (or CPV) technology to convert sunlight directly into electricity. Solar PV (or CPV) technology is consistent with the definition of an "eligible renewable energy resource" in Section 399.12 of the California Public Utilities Code and the definition of "in-state renewable electricity generation facility" in Section 25741 of the California Public Resources Code. The projects would generate renewable energy resources and therefore, this is considered a beneficial effect rather than an impact. The transmission lines would not have operational energy consumption.

Additionally, implementation of ICAPCD's standard mitigation measures and the greenhouse gas offset measures listed above will ensure that the projects energy consumption during construction is **less than significant**.

Mitigation Measure(s)

No mitigation measures are required.

IMPACT 4.14-7 *Result in Noncompliance with Existing Energy Standards.*

The projects would assist SDG&E in meeting California's mandate to procure 20 percent of its power from renewable resources.

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Line

The electricity generation process associated with the projects would utilize solar technology to convert sunlight directly into electricity. Solar PV (or CPV) technology is consistent with the definition of an "eligible renewable energy resource" in Section 399.12 of the California Public Utilities Code and the definition of "in-state renewable electricity generation facility" in Section 25741 of the California Public Resources Code.

The use of energy associated with the projects includes both construction and operational activities. Implementation of ICAPCD's standard mitigation measures and the greenhouse gas offset measures listed above will ensure that the projects energy consumption during construction is reduced to a level below significance. The projects would not result in noncompliance with existing energy standards. The projects would generate renewable energy resources, resulting in beneficial effects. Therefore, impacts would be **less than significant**.

Mitigation Measure(s)

No mitigation measures are required.

IMPACT 4.14-7 *Result in negative effects on energy resources.*

The projects would assist SDG&E in meeting California's mandate to procure 20 percent of its power from renewable resources.

Iris Cluster (FSF, RSF, ISF, and LSF) and Transmission Lines

The projects would not result in negative effects on energy resources. The projects would assist SDG&E in meeting California's mandate to procure 20 percent of its power from renewable resources, which is considered a beneficial impact. Therefore, impacts would be **less than significant**.

Mitigation Measure(s)

No mitigation measures are required.

4.14.3 Decommissioning/Restoration and Residual Impacts

Decommissioning/Restoration

It is anticipated that a small quantity of water would be required during decommissioning of the projects and site restoration at the end of the projects' 40-year life. However, it is anticipated that this water need would be less than what is required for construction and operation of the projects, and the amount of water usage would be similar to existing agricultural operations when crops are reintroduced at the project study areas. Therefore, a **less than significant** impact is identified and no mitigation is required. Decommissioning and restoration activities would not require energy so no impact is identified and no mitigation is required.

Residual

The projects will not result in significant impacts to the water supply or energy resources of Imperial County; therefore, no mitigation is required. The projects will not result in residual impacts.

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