3.7 Energy

This section includes an overview of the existing energy sources within the project area and identifies applicable local, state, and federal policies related to energy. The impact assessment provides an evaluation of potential adverse effects on energy based on criteria derived from the CEQA Guidelines in conjunction with actions proposed in Chapter 2, Project Description.

3.7.1 Existing Conditions

Energy capacity, or electrical power, is generally measured in watts, while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 Watts (W), the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts, which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Electrical services in the project area are provided by the IID. IID operations are divided between a water division responsible for distribution and collection of water, and a power division responsible for generation and distribution of electrical power. Power is generated from various sources, including fossil fuel, hydroelectric, nuclear, biomass/biowaste, wind, and geothermal plants, and is fed into the electrical grid system serving Imperial County. The majority of the electricity at the project site is generated by the HGEC. Natural gas service in the area is provided by the Southern California Gas Company.

Transportation dominates California's energy consumption profile. Overall, the transportation sector accounts for 34 percent of state end-use energy consumption (United States Energy Information Administration 2023). According to California Air Resources Board's (CARB's) EMFAC2021 Web Database, Imperial County's on-road transportation sources consumed approximately 432 million gallons of gasoline and 163 million gallons of diesel fuel in 2022 (CARB 2023b).

3.7.2 Regulatory Setting

This section identifies and summarizes laws, policies, and regulations that are applicable to the project.

Federal

Energy Policy Act of 2005

The Energy Policy Act (EPAct) of 2005 includes several electricity-related provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas. The Renewable Fuel Standard (RFS) program was created under the EPAct of 2005 and established the first renewable fuel volume mandate in the United States. The program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders. As required under EPAct, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act (EISA) (Public Law 110-140) was signed into law by President George W. Bush on December 19, 2007. The Act's goal is to achieve energy security in the

United States by increasing renewable fuel production, improving energy efficiency and performance, protecting consumers, improving vehicle fuel economy, and promoting research on greenhouse gas (GHG) capture and storage. Under the EISA, the updated RFS program (RFS2) was expanded in several key ways:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel, and set separate volume requirements for each one.
- EISA required the U.S. Environmental Protection Agency (EPA) to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

RFS2 lays the foundation for achieving significant reductions of GHG emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of the nation's renewable fuels sector.

State

Renewable Energy: California Renewables Portfolio Standard Program

Established in 2002 under Senate Bill (SB) 1078, accelerated in 2006 under SB 107, expanded in 2011 under SB 2 and further expanded in 2015 under SB 350, California's Renewables Portfolios Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020. On September 12, 2002, then-Governor Gray Davis signed SB 1078. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

In November 2008, then-Governor Arnold Schwarzenegger signed Executive Order (EO) S-14-08, which expands the state's RPS to 33 percent renewable power by 2020. In September 2009, former Governor Schwarzenegger continued California's commitment to the RPS by signing EO S-21-09, which directs the California Air Resources Board (CARB) under its Assembly Bill (AB) 32 authority to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020.

The 33 percent by 2020 goal was codified in April 2011 with SB X1-2, which was signed by Governor Edmund G. Brown, Jr. This RPS preempts the CARB 33 percent Renewable Electricity Standard and applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. These entities must adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013 and 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.

The Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 does the following: (1) increases the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) requires the State Energy Resources Conservation and Development

Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provides for the evolution of the Independent System Operator into a regional organization; and (4) requires the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation (SB-350 Clean Energy and Pollution Reduction Act 2015).

Title 24 Energy Efficiency Standards

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6 of the California Code of Regulations) ("Title 24 Standards") were established in 1978 in response to a legislative mandate to reduce California's energy consumption to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The standards are updated periodically (typically every three years) to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Standards went into effect on January 1, 2020, and improve upon the 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of new constructed buildings and additions and alterations to existing buildings. The major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2017 national standards. The 2019 Standards also include changes made throughout all of its sections to improve the clarity, consistency, and readability of the regulatory language. Furthermore, the 2019 update requires that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality." The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. As previously mentioned, the 2019 update to the CALGreen Code went into effect on January 1, 2020. The 2019 CALGreen Code improves upon the previously applicable 2016 CALGreen Code by updating standards for bicycle parking, electric vehicle charging, and water efficiency and conservation.

California Assembly Bill No. 1493 (AB 1493, Pavley)

The transportation sector accounts for more than half of California's carbon dioxide (CO_2) emissions in California. AB 1493 (commonly referred to as Pavley regulations), enacted on July 22, 2002, required CARB to set GHG emission standards for new passenger vehicles, light-duty trucks, and other vehicles whose primary use is noncommercial personal transportation manufactured in and after 2009.

CARB's Climate Change Scoping Plan

CARB's Climate Change Scoping Plan, which functions as a roadmap to achieve the California GHG reductions required by AB 32 and SB 32 through subsequently enacted regulations, is discussed in detail in Section 3.9, Greenhouse Gas Emissions. In December 2022, CARB approved the final version of California's 2022 Climate Change Scoping Plan (2022 Scoping Plan Update), which outlines the proposed framework of action for achieving California's new AB 1279 2045 GHG target: a 85 percent reduction in GHG emissions by 2045 relative to 1990 levels. The 2022 Scoping Plan Update focuses on strategies for reducing California's dependency on petroleum to provide customers with clean energy options that address climate change and support clean sector jobs. SB 350 and other regulations are expected to decarbonize the electricity sector over time.

CARB Heavy-Duty On-Road and Off-Road Vehicle Regulations

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling in order to reduce public exposure to diesel particulate matter (DPM) emissions (Title 13 CCR Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

In addition to limiting exhaust from idling trucks, CARB also promulgated emissions standards for off-road diesel construction equipment greater than 25 horsepower (hp) such as loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-road Diesel-Fueled Fleets regulation adopted by CARB on July 26, 2007, encourages the retirement, replacement, or repower of older engines with newer emissions-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

Local

Imperial County General Plan, Renewable Energy and Transmission Element

The Renewable Energy and Transmission Element of the Imperial County General Plan (2015) contains the latest knowledge about local geothermal resources, current development technology, and County, State, and Federal policy regarding the exploration, development, and transmission of geothermal energy. The guidelines included in the Element address aspects of the Renewable Energy Program related to the state's Renewables Portfolio Standard (RPS).

3.7.3 Impacts and Mitigation Measures

Thresholds of Significance

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

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

Methodology

Impact Analysis

Impact 3.7-1 Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction of operation?

Construction

Construction of the project would require the use of fuels (primarily gasoline and diesel) for the operation of construction equipment and vehicles to perform a variety of activities, including excavation, hauling, well installation, and vehicle travel (including on-site and commuter trips). In addition to direct construction-related energy consumption, indirect energy use would be required to make the materials and components used for project construction. This includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing. Table 3.7-1 provides an estimate of construction fuel consumption for the project based on information provided by the CalEEMod air quality computer model (Appendix D of this EIR).

Table 3.7-1. Estimated Construction Fuel Consumption

Construction Phase	Equipment	Qty	Engine Hp	No. Days Used	No. Hours Operated Per Day	Total Hours	Total Fuel Consumption (gallons)
Site Preparation (Plant Site and Solar Fields) (2 Months)	Heavy Duty Trucks	3	402	30	5	150	2,750
	Excavator	1	97	30	8	240	354
	Roller	2	200	30	8	240	1,459
	Light-Duty Truck	8	350	30	4	120	5,107
Project Construction (16 Months)	Aerial Man Lifts	8	63	160	6	960	6,000
	Excavator	1	97	40	8	320	472
	Crane	2	231	160	6	960	5,145
	Forklift	1	89	40	8	320	228
	Forklift	6	89	245	8	1,960	8,373

Construction Phase	Equipment	Qty	Engine Hp	No. Days Used	No. Hours Operated Per Day	Total Hours	Total Fuel Consumption (gallons)
	Generator Set	1	84	320	8	2,560	6,365
	Grader	1	187	30	8	240	736
	Heavy Duty Trucks	2	402	90	8	720	8,799
	Rubber Tired Loader	1	203	30	8	240	702
	Backhoe	1	97	30	8	240	345
	Welders	15	46	245	6	1,470	18,257
	Light Duty Truck	1	350	40	4	160	851
	Light Duty Truck	15	350	245	4	980	78,204
Well Drilling and Pipe Interconnection (12 Months)	Light tower	2	27	90	12	1,080	1,726
	Drill Rig	1	500	180	24	4,320	43,200
	Rig Mud Pump	1	500	180	24	4,320	63,936
	Rig Generator	1	415	180	24	4,320	53,067
	Heavy Duty Trucks (Mob/Demob)	8	450	24	8	192	10,506
	Crane	2	231	24	5	120	643
	Backhoe	1	97	24	6	144	207
	Forklift	1	89	24	6	144	103
	Vacuum Truck	1	385	24	10	240	1,404
	Concrete Truck	1	428	3	4	12	78
	Concrete Pumper	1	100	3	4	12	36
	Light Duty Truck	4	350	24	4	96	2,043
Substation Development and Interconnection (4 Months)	Crane	1	231	80	8	640	1,715
	Drill/Bore Rig	1	221	80	8	640	4,187
	Aerial Lift	2	63	80	8	640	1,000
	Heavy Duty Trucks (Delivery)	2	402	20	4	80	978
	Backhoe	1	97	14	8	112	161
	Forklift	1	89	80	8	640	456

Construction Phase	Equipment	Qty	Engine Hp	No. Days Used	No. Hours Operated Per Day	Total Hours	Total Fuel Consumption (gallons)
	Ditch Digger	1	13	20	8	160	42
	Generator Set	2	84	80	8	640	3,183
	Light Duty Truck	5	350	80	4	320	8,512
Testing (1 Month)	Generator	1	671	30	24	720	14,300
	Light Tower (27 hp)	2	27	30	12	360	575
	Light Tower (9 hp)	2	9	30	12	360	192
	Pump (115 hp)	1	115	30	24	720	2,451
	Pump (415 hp)	1	415	30	24	720	8,844
	Light Duty Truck	1	350	30	4	120	638
Total:							**368,328**

Source: Appendix D of this EIR

Project construction would occur over five phases, with the drilling phase utilizing the most construction equipment. As shown in Table 3.7-1, the construction of the project would result in total consumption of approximately 368,328 gallons of fuel. In addition to direct construction energy consumption, indirect energy use would be required to make the materials and components used in construction. This includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing.

The total diesel and gasoline fuel sales in Imperial County was estimated by the California Energy Commission to be 27 million gallons in 2021 (California Energy Commission 2022). Accordingly, the estimated 368,328 gallons of diesel fuel required for project activities would represent approximately 1.4 percent of total diesel and gasoline fuel sales in Imperial County. Fuel energy consumed during Project construction would be temporary and would not represent a substantial demand on energy resources. In addition, energy conservation would occur during Project construction through compliance with the CARB anti-idling and emissions regulations, which require that equipment not used for more than five minutes be turned off. Compliance with these regulations would result in less fuel combustion and energy consumption and thus minimize the Project's construction-related energy use. Project construction equipment would also be required to comply with EPA and CARB engine emission standards. These emission standards require highly efficient combustion systems to maximize fuel efficiency and reduce unnecessary fuel consumption.

In addition, the project includes several energy- and fuel-efficient design features that would help minimize inefficient or wasteful use of energy and increase conservation during construction. For example, the project grading plan is designed to balance all earthwork on site, which would avoid truck trips that would have been required to haul-in fill materials to the site and haul-off of materials to be exported off-site. Most construction equipment needed for the project is already onsite, further avoiding truck trips associated with mobilization and demobilization. This would reduce fuel use, while also reducing temporary increases in noise and exhaust emissions. The project grading plan and on-site construction equipment would also minimize impacts to the surrounding transportation network that

would result from truck traffic associated with soil import/export and mobilization/demobilization. Implementation of the energy conservation control measures in Mitigation Measure ENG-1 would further reduce fuel consumption and energy use and ensure remain less than significant.

Operation

Electricity required during operations would be greatly offset by the electricity produced by the geothermal and solar facilities. Specifically, operation of renewable energy facilities would offset greenhouse gas emissions by replacing energy generated by fossil fuel power plants. The project would generate up to 47 MW of renewable energy, of which 25 MW net of energy would be added to the power grid, and 22 MW would be in the form of parasitic renewable energy for the plant operations. This renewable energy would be used in place of electricity generated by fossil fuel sources. Based on these considerations, the project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and impacts would be less than significant.

Mitigation Measure(s)

ENG-1 **Energy Conservation Control Measures.** The project applicant shall implement all the following applicable energy conservation control measures during construction of the project:

- Idling times on all diesel-fueled commercial vehicles over 10,000 pounds shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure 13 CCR §2485). Clear signage to this effect shall be provided for construction workers at all access points.
- Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by 13 CCR §2449 (“CARB Off-Road Diesel Regulations”).
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available, and it is not feasible to use propane or natural gas.

Impact 3.7-2 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Construction

Construction equipment would comply with federal, state, and regional requirements where applicable. With respect to truck fleet operations the USEPA and the National Highway Traffic Safety Administration (NHTSA) have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to vehicles from model years 2014 through 2018 and will result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending

on the vehicle type. The USEPA and NHTSA also adopted the Phase 2 heavy-duty truck standards, which covered model years 2021 through 2027 and required the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type. The energy modeling for trucks does not take into account specific fuel reduction from these regulations, since they would apply to fleets as they incorporate newer trucks meeting the regulatory standard; However, these regulations would have an overall beneficial effect on reducing fuel consumption from trucks overtime as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with CARB's regulations regarding heavy duty truck idling limits of five minutes at a location and the phase in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption for more fuel-efficient engines. While these regulations are intended to reduce criteria pollutant emissions, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency during construction. Short-term impacts would be less than significant.

Operation

The Climate Change Scoping Plan outlined the main strategies California will implement to achieve California's new AB 1279 2045 GHG target: an 85 percent reduction in GHG emissions by 2045 relative to 1990 levels. One such strategy is to reduce GHG emissions produced during electricity generation. Overall, because the main objectives of the project are to assist the state in meeting its obligations under California's RPS Program and assist California in meeting the GHG emissions reduction goal 85 percent below 1990 levels in 2045, the project would be consistent with the applicable recommended actions of CARB's 22022 Climate Change Scoping Plan, as well as applicable federal, state and local policies. Specifically, the project would assist the State and regulated utility providers to generate a greater portion of energy from renewable sources consistent with the RPS. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency during operations and long-term impacts would be less than significant.

Mitigation Measure(s)

No mitigation measures are required.

3.7.4 Decommissioning/Restoration and Residual Impacts

Decommissioning/Restoration

At the end of the project's useful life, all equipment and facilities will be properly abandoned and dismantled. Similar to construction activities, decommissioning and restoration would result in short-term energy consumption. Decommissioning and restoration activities would be temporary and would not represent a substantial demand on energy resources. Similar to construction, energy conservation during decommissioning activities would occur through compliance with CARB anti-idling and emissions regulations, which require that equipment not used for more than five minutes be turned off. Compliance with these regulations would result in less fuel combustion and energy consumption and thus minimize energy use. Impacts would be less than significant.

Residual

The construction and operation of the proposed project would result in a less than significant impact related to energy. No mitigation is required and no residual unmitigated impacts would occur with implementation of the project.