3.11 Energy

This section describes the potential energy impacts of the Venice Auxiliary Pumping Plant (VAPP; Proposed Project). It includes a discussion of existing regulatory requirements, energy setting within the project area, and construction and operational energy requirements and associated impacts that would result from implementation of the Proposed Project. As noted in the analysis in this section, impacts during construction and operation would be less than significant and no mitigation measures are required.

3.11.1 Regulatory Setting

A review of the various federal, state, regional, and local government regulatory requirements was conducted to identify those related to energy. This section summarizes the various regulatory requirements that are relevant and applicable to the Proposed Project.

3.11.1.1 Federal Regulations

There are federal no laws or regulations related to energy applicable to the Proposed Project.

3.11.1.2 State Regulations

California Energy Commission

Created by the legislature in 1974, the California Energy Commission (CEC) is the state's primary energy policy and planning agency and is responsible for, among other things, forecasting future energy needs for the state. Senate Bill 1389 (Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial Integrated Energy Policy Report. This report contains an integrated assessment of major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors, and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Commission adopted the 2015 Integrated Energy Policy Report on February 10, 2016.

3.11.1.3 Local Regulations

City of Los Angeles

Los Angeles Department of Water and Power: Power Integrated Resource Plan

Released to the public in December 2014, the Power Integrated Resource Plan identifies a portfolio of power generation resources and power system assets that would meet the City of Los Angeles' future energy needs, with the lowest cost and risk possible, consistent with the Los Angeles Department of Water and Power's (LADWP's) environmental priorities and reliability standards. Updates in the 2014 Power Integrated Resource Plan include new energy efficiency programs to achieve 15 percent energy efficiency savings by 2020, a Demand Response Implementation Plan with a goal to achieve 506 megawatts (MW) of demand response by 2026, and an energy storage procurement target of 178 MW by 2021 to support increased levels of renewable energy.

Building Construction Standards

Title 24 of the California Code of Regulations establishes energy conservation standards for new construction within the state of California. These standards are related to insulation requirements, glazing, lighting, shading, and water and space heating systems. The Los Angeles Municipal Code incorporates these state requirements (Section 91.1300).

The Los Angeles Green Building Code is based on the 2013 California Green Building Standards Code, commonly known as "CALGreen," which was developed and mandated by the state to attain consistency among the various jurisdictions within the state and reduce energy and water use, waste, and the overall carbon footprint in buildings. As of January 2011, all new buildings, additions, and building alterations for buildings valued at more than $200,000 are subject to the Green Building Code.

3.11.2 Environmental Setting

This section describes the environmental setting related to energy. It is intended to assist in the evaluation of impacts provided below and the formation of required mitigation measures, if necessary.

LADWP provides electricity in the project area, as well as to approximately 1.4 million residential and business consumers in its service area. LADWP's service area includes a 465-square-mile swath in Los Angeles and the Owens Valley in the eastern Sierra Nevada region. Current electricity use is approximately 23,600 gigawatt-hours (GWh) annually. LADWP forecasts providing 24,000 GWh to customers in 2020 (LADWP 2014: p. 115).

The Project Site is currently vacant, and as such, no public utilities serve the site. The adjacent Venice Pumping Plant (VPP) has 5 pumps (two duty and three backup), each of which has an 18-million-gallons-per-day (mgd) design capacity, which consumes approximately 6.5 million kWh per year based on an annualized 36-mgd flow (Arcadis 2016). The LADWP provides electrical service to the VPP, while natural gas service is provided by The Gas Company. In addition, VPP is served by a 1500-kW diesel generator and two parallel 750-kW diesel generators, which provide standby power in the event of loss of LADWP power or for maintenance purposes. The pumps and generators are the primary components of the VPP responsible for energy consumption, and the other equipment is responsible for minor amounts of energy use.

3.11.3 Environmental Impact Analysis

3.11.3.1 Methodology

Construction

The estimate of construction-related energy use was calculated by applying the U.S. Environmental Protection Agency– (EPA-) derived carbon dioxide equivalent (CO_2e) emissions per gallon of fuel to the total CO_2e emissions projected by the California Emissions Estimator Model (CalEEMod) in the air quality and GHG emissions analysis prepared for the Proposed Project. These calculations are included in Appendix B [Air Quality Emissions and Greenhouse Gas Calculations] of this EIR. Section 3.2, Air Quality, includes details on construction equipment and activity assumptions that were used to estimate CO_2e emissions. Emissions were then converted to million British thermal units (MMBTU) using energy unit conversion factors. Consistent with the GHG analysis methodology (see Section 3.6, Greenhouse Gases of this EIR), the construction-period energy use was amortized over the expected 30-year life of the Proposed Project.

Operation

Based on information provided by the project design team (Arcadis), the proposed pumps at VAPP would be more efficient than the existing pumps at VPP. Because the Proposed Project would create redundancy to help ensure system reliability, the additional pumping capacity would not be needed except during wet-weather events. Assuming an annualized 36-mgd flow for the combined VPP and VAPP facility, there would be little change in overall energy consumption related to pumping. However, there would be an increase in energy consumption related to the operational control room, which would consume 570,000 kWh per year. Additional electricity consumption was assumed based on CalEEMod defaults, bringing the total electricity consumption to approximately 630,000 kWh annually (see Appendix B of this EIR) (Arcadis 2016). This figure was converted to MMBTU using energy unit conversion factors to allow for comparison with the energy use during the construction period. In addition to the electricity use from the Proposed Project, energy use from mobile, waste, and water sources would occur, which was calculated using the GHG output from CalEEMod (see Appendix B of this EIR). As was done for the construction period, CO_2e emissions were converted to gallons of fuel and MMBTU.

The discussion below identifies potential impacts from the Proposed Project and the measures that would be required to mitigate impacts that are found to be potentially significant.

3.11.3.2 Screening Analysis

As noted in Section Chapter 1.0, Introduction, the analysis and conclusions contained in the Initial Study (see Appendix A [Notice of Preparation/Initial Study] of this EIR) prepared for the Proposed Project considered and then eliminated a number of impacts from further analysis, including those contained in CEQA Appendix G and the *L.A. CEQA Thresholds Guide* (2006). Therefore, only those impacts and corresponding thresholds of significance noted below were determined to require further analysis and are addressed in this EIR.

3.11.3.3 Thresholds of Significance

According to the *L.A. CEQA Thresholds Guide*, the determination of significance with respect to energy impacts shall be made on a case-by-case basis, considering the following factors:

ENERGY-1. The extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure, or capacity enhancing alterations to existing facilities;

ENERGY-2. Whether and when the needed infrastructure was anticipated by adopted plans; and

ENERGY-3. The degree to which the project design and/or operations incorporate energy conservation measures, particularly those that go beyond City requirements.

3.11.3.4 Construction Impacts

The analysis below describes the temporary and permanent impacts related to energy anticipated as a result of the Proposed Project during construction.

ENERGY-1. The extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure, or capacity enhancing alterations to existing facilities

During the construction period, equipment and vehicles would be primarily powered by diesel fuel and would likely require minimal electricity. Table 3.11-1 shows the construction-period fuel use and equivalents in MMBTU, which would be 9,500 MMBTU over the entire period, or approximately 300 MMBTU when amortized over the anticipated 30-year life of the project.[1] Construction-period energy use includes energy that would be used in worker commute trips as well as haul trips and equipment use, which would result in the consumption of an estimated 66,000 gallons of fuel.

Although fuel would be consumed by construction vehicles and equipment, the fuel consumption would be temporary in nature and would represent a negligible increase in regional demand, and an insignificant amount relative to the more than 18 billion gallons of on-road fuels used in the state in 2013, an increase of approximately 0.000004 percent (California Energy Commission 2014). Given the extensive network of fueling stations throughout the project vicinity and the fact that the 2-year construction period would be short-term, no new or expanded sources of energy or infrastructure would be required to meet the energy demand associated with project construction. As such, construction impacts related to the extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure, or capacity enhancing alterations to existing facilities would be **less than significant**, and no mitigation measures are required.

Table 3.11-1. Construction-Period Energy Use Estimate

	Diesel Fuel Use (gallons)	MMBTU
Overall Construction Energy Use	68,600	9,500
Amortized Construction Energy Use [a]	2,300	300

All figures have been rounded to the nearest 100.
[a] Construction energy use was amortized over the assumed 30-year life of the Proposed Project, consistent with the GHG analysis methodology
Source: CalEEMod modeling and conversion calculations by ICF 2016 (see Appendix B of this EIR).

ENERGY-2. Whether and when the needed infrastructure was anticipated by adopted plans

As discussed above, diesel fuel would be the primary energy source used during the construction period. Although there are no adopted local or regional plans regulating the supply and demand related fuels, given the extensive network of fueling stations throughout the project vicinity, the existing fuel infrastructure is expected to accommodate the increased construction-period demand for fuel introduced by the Proposed Project. Therefore, **no impact** would occur related to whether and when the needed infrastructure was anticipated by adopted plans, and no mitigation measures are required.

[1] Consistent with the methodology for GHG emissions, construction-period energy consumption is divided over the anticipated 30-year life of the proposed Project. Although construction would occur over a 2-year period, this method is intended to apportion the upfront energy consumption over the life of the proposed Project.

ENERGY-3. The degree to which the project design and/or operations incorporate energy conservation measures, particularly those that go beyond City requirements

There are no specific energy conservation measures proposed as part of construction activities. All equipment would be used in compliance with the manufacturer's specifications. As such, construction of the Proposed Project is not expected to result in the wasteful or inefficient use of energy. Therefore, no impacts related to energy would result and the degree to which project design and/or operation incorporates energy conservation measures, particularly those that go beyond City requirements. No mitigation measures are required.

3.11.3.5 Operational Impacts

ENERGY-1. The extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure, or capacity enhancing alterations to existing facilities

Project operation would involve the use of electricity to power pumps and equipment (such as computers, servers, and mechanical systems), as well as to provide lighting. Energy would also be used in the transport of potable water and solid waste associated with the electrical building and as fuel in 3 employee vehicles commuting to and from the Project Site on a daily basis. Table 3.11-2 shows the energy requirements of the Proposed Project and the equivalents in MMBTU, which would be 3,100 MMBTU annually. Diesel use by the backup generator and by maintenance vehicles at the site was not quantified, as it would be an infrequent occurrence of limited duration. However, this energy consumption would be a nominal addition to the regular energy use identified in Table 3.11-2.

Table 3.11-2. Operational Energy Use Estimate

	Annual Energy	Annual MMBTU
Existing Energy Use		
Electricity (VPP only)	6.5 Million kWh	22,100
Proposed Project Energy Use		
Electricity (VAPP only)	632,400 kWh[a]	2,200
Natural Gas		200
Mobile	1,200 gallons fuel	300
Waste	12.4 tons[b]	100
Water	2.3 million gallons[b]	300
	Total Proposed Increase	*3,100*

All MMBTU figures have been rounded to the nearest 100.
[a] Based on the sum of the 570,000 kWh estimate provided by Arcadis and CalEEMod defaults for miscellaneous electricity requirements (lighting, heating and cooling, etc.)
[b] CalEEMod output provided based on default square footage building type.
Source: CalEEMod modeling and conversion calculations by ICF 2016 (see Appendix B of this EIR).

As discussed in Chapter 2, Project Description, new tie-ins to LADWP electricity sources would be required for project operation. The electricity required annually for operation of the pumps and electrical building would constitute a new energy demand and would increase the consumption of electricity in the LADWP service area relative to existing conditions. However, this project-related increase of approximately 630,000 kWh (2,200 MMBTU) represents a very small portion

(approximately 0.00003 percent) of the 24,000 GWh (82 million MMBTU) of electricity that LADWP forecasts providing to customers in 2020 (LADWP 2014: p. 115). It is anticipated that LADWP would be capable of meeting the electricity demands of the Proposed Project and that the Project would not require new electricity infrastructure beyond that which is existing or has been previously planned. Similarly, the Proposed Project's demand for natural gas (approximately 200 MMBTU, according to estimate calculated in Appendix B of this EIR) would be able to be met by existing supplies provided by The Gas Company. The Proposed Project is consistent with City and countywide efforts to maintain and improve the wastewater collection system. Therefore, impacts related to the extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure, or capacity enhancing alterations to existing facilities would be **less than significant**, and no mitigation measures are required**.**

ENERGY-2. Whether and when the needed infrastructure was anticipated by adopted plans

As discussed in Section 3.2, Air Quality, the Proposed Project is consistent with the wastewater provisions contained within the Framework Element of the City of Los Angeles General Plan. In addition, The Bureau of Engineering has programmed the Proposed Project as part of its Wastewater – Collection System Program (City of Los Angeles 2016). LADWP has adopted the Power Integrated Resource Plan to manage the electricity needs of the City's inhabitants, which includes energy used for wastewater pumping.

Thus, the improvements proposed by the Project have been identified as needed infrastructure in adopted plans. Therefore, impacts related to whether and when the needed infrastructure was anticipated by adopted plans would be **less than significant** and no mitigation measures are required.

ENERGY-3. The degree to which the project design and/or operations incorporate energy conservation measures, particularly those that go beyond City requirements

The objective of the Proposed Project is to provide redundancy for increased system reliability and pumping capacity to the reduce risk of sewage overflows during extreme wet weather events. There are several energy conservation measures proposed as part of the Project design.

1. Energy-efficient LED-type light fixtures, with dimming for the control room and multi-level switching in the larger rooms.
2. Department of Energy–certified high-efficiency dry-type transformer.
3. Solatubes – We are adding two solatubes on the roof, which will bring in natural daylight to the second floor. During the day, the Smart LED system lights interiors using no-cost, natural light. As the sun starts to set and light levels fall, energy-efficient LEDs activate automatically to provide illumination for early-morning and evening use. The result is a commercial daylighting solution that significantly cuts electricity use and delivers up to 94% in light energy savings. Unlike traditional light sources, LEDs expend significantly less energy to produce light. For this reason, they can last up to three times longer than compact fluorescent lamps, eight times longer than halogen lamps, and a whopping 25 times longer than incandescent lamps. The LED bulbs in the Smart LED system are designed to last up to 20 years, making maintenance easier because re-lamping will be unnecessary for decades.
4. Light Fixtures – The interior light fixtures will be LED fixtures, which are much more energy efficient that conventional CFL fixtures.

5. Exterior Wall insulation – The perimeter walls will have insulation with an R-13 value.
6. Exterior Window – The only exterior window will have a SHGC of 0.45 in a 1-inch insulating glass unit and a visible light transmittance (VLT) of 40%.
7. Roofing System – The Sika Sarnafil G410 roofing system will have a solar reflectance value of 0.83 and a thermal emittance of 0.90, both of which meet or exceed minimum requirements. The rigid insulation beneath the roofing membrane will comprise polyisincurate insulation, which provides an R-value of up to R30 for the roofing envelope.

Despite the purpose of the Proposed Project, which is to provide redundancy and increase pumping capacity, the Proposed Project would be designed to be as efficient as possible. Energy conservation has been incorporated into the project design through use of variable frequency drives (VFD) for the pumps. VFD will adjust motor speed to vary discharge flows, allowing for the most efficient pump operation.

The Proposed Project will be built in compliance with all applicable provisions of the City of Los Angeles Building Code, which includes the mandatory provisions of the Green Building Code. Therefore, there would be **no impact** related to energy use and the degree to which project design and/or operation incorporates energy conservation measures, particularly those that go beyond City requirements. No mitigation measures are required.

3.11.4 Mitigation Measures

No mitigation measures are required.

3.11.5 Significant Unavoidable Adverse Impacts

There would be no significant unavoidable impacts related to energy either during construction or operation of the Proposed Project.

3.11.6 Cumulative Impacts

As discussed above, the energy use that would result from implementation of the Proposed Project would be negligible relative to the regional market. However, the increased electricity consumption associated with the Proposed Project in combination with future projects within LADWP's service area may require new electricity transmission infrastructure or the rehabilitation of existing electricity infrastructure to meet that increased demand and maintain adequate levels of service, notwithstanding future savings resulting from increased energy efficiency. Although LADWP has planned for long-term increases in demand, new supply and delivery infrastructure facilities could be required to meet increased regional demands. Where LADWP has identified specific individual projects that are required to meet future projected regional cumulative demands and determined that construction or operation of those projects would result in significant impacts to the environment, then the cumulative impact of the Proposed Project and other projects in the LADWP service area would be considered significant. However, for the purposes of this EIR, it is concluded that the Proposed Project would not result in a cumulatively considerable contribution to a potentially significant cumulative energy impact.