

5. Environmental Analysis

5.4 ENERGY

This section evaluates the potential for energy-related impacts associated with the project and ways in which the project would reduce unnecessary energy consumption, consistent with the suggestions in Appendix F of the CEQA Guidelines. Energy service providers to the site include San Diego Gas and Electric (SDGE) for electrical service and Southern California Gas Company (SoCalGas) for natural gas. Modeling of electricity and natural gas usage of the project is included in Appendix C of this DEIR. Vehicle and equipment energy calculations are also included in Appendix C.

5.4.1 Environmental Setting

Section 21100(b)(3) of CEQA requires that an EIR include a detailed statement setting forth mitigation measures proposed to minimize significant effects on the environment, including but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy. Appendix F of the State CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the project description, environmental setting, and impact analysis portions of technical sections, as well as through mitigation measures and alternatives.

In accordance with Appendices F and G of the State CEQA Guidelines, this EIR includes relevant information and analyses that address the energy implications of the Proposed Project. This section represents a summary of the Creekside Specific Plan's (Proposed Project) anticipated energy needs, impacts, and conservation measures. Information found herein, as well as other aspects of the Proposed Project's energy implications, are discussed in greater detail elsewhere in this EIR, including Chapter 3, *Project Description*, and Sections 5.2, *Air Quality*, 5.6, *Greenhouse Gas Emissions*, and 5.13, *Transportation*.

5.4.1.1 REGULATORY BACKGROUND

Federal Regulations

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (Public Law 110-140) seeks to provide the nation with greater energy independence and security by increasing the production of clean renewable fuels; improving vehicle fuel economy; and increasing the efficiency of products, buildings, and vehicles. It also seeks to improve the energy performance of the federal government. The Act sets increased Corporate Average Fuel Economy Standards; the Renewable Fuel Standard; appliance energy efficiency standards; building energy efficiency standards; and accelerated research and development tasks on renewable energy sources (e.g., solar energy, geothermal energy, and marine and hydrokinetic renewable energy technologies), carbon capture, and sequestration (USEPA 2019).

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State Regulations

Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) was established in 2002 under SB 1078 and was amended in 2006, 2011 and 2018. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. The California Public Utilities Commission is required to provide quarterly progress reports on progress toward RPS goals. This has accelerated the development of renewable energy projects throughout the state.

All electricity retail sellers had an interim target between compliance periods to serve at least 27% of their load with RPS-eligible resources by December 31, 2017. In general, retail sellers either met or exceeded the interim 27% target and are on track to achieve their compliance requirements. California's three large IOUs collectively served 36% of their 2017 retail electricity sales with renewable power. The Small and Multi-Jurisdictional Utilities (SMJUs) and ESPs served roughly 27% of retail sales with renewables and CCAs collectively served 50% of retail sales with renewable power. (CPUC 2020). SB 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures. SB 100 (de Leon), passed in 2018, puts California on the path to 100% fossil-fuel free electricity by the year 2045 (CEC 2017a).

State Alternative Fuels Plan

AB 1007 requires the California Energy Commission (CEC) to prepare a plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan was prepared by the CEC with the California Air Resources Board and in consultation with other federal, state, and local agencies to reduce petroleum consumption; increase use of alternative fuels (e.g., ethanol, natural gas, liquefied petroleum gas, electricity, and hydrogen); reduce greenhouse gas (GHG) emissions; and increase in-state production of biofuels. The State Alternative Fuels Plan recommends a strategy that combines private capital investment, financial incentives, and advanced technology that will increase the use of alternative fuels; result in significant improvements in the energy efficiency of vehicles; and reduce trips and vehicle miles traveled through changes in travel habits and land management policies. The Alternative Fuels and Vehicle Technologies Funding Program legislation (AB 118, Statutes of 2007) proactively implements this plan (CEC 2007).

Appliance Efficiency Regulations

California's Appliance Efficiency Regulations contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California (California Code of Regulations Title 20, Parts 1600–1608). These standards are updated regularly to allow consideration of new energy efficiency technologies and methods (CEC 2017b).

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Title 24, Part 6, Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2019 (California Code of Regulations Title 24, Part 6). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect starting January 1, 2020.

The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; 4) and nonresidential lighting requirements (CEC 2018a). Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and single-family homes will be 7 percent more energy efficient (CEC 2018b). When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards (CEC 2018b).

Title 24, Part 11, Green Building Standards

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (California Code of Regulations Title 24, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. It includes mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, and were last updated in 2016. The 2016 Standards became effective on January 1, 2017. On October 3, 2018, the CEC adopted the voluntary standards of the 2019 CALGreen, which became effective January 1, 2020.

Overall, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. CALGreen contains requirements for construction site selection; stormwater control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

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Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles. In January 2012, the California Air Resources Board approved the Pavley Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

5.4.1.2 EXISTING CONDITIONS

Electricity

The Project Site is in San Diego Gas and Electric's service area, which spans nearly all of San Diego County and part of southern Orange County on the north (CEC 2015a). Total electricity consumption in SDGE's service area in gigawatt-hours was 21,157 GWh in 2018 (CEC 2019a); one GWh is equivalent to one million kilowatt-hours. Sources of electricity sold by SDGE in 2018, the latest year for which data are available, were:

- 43 percent renewable, consisting mostly of solar and wind
- 29 percent natural gas
- 1 percent other sources
- 27 percent unspecified sources—that is, not traceable to specific sources (SDGE 2019)

Gas

Southern California Gas Company (SoCalGas) provides gas service in San Juan Capistrano and has facilities throughout the city, including the Project Site. The service area of SoCalGas spans much of the southern half of California, from Imperial County on the southeast to San Luis Obispo County on the northwest to part of Fresno County on the north to Riverside County and most of San Bernardino County on the east (CEC 2015b). Total natural gas supplies available to SoCalGas for years 2018 and 2019 were 3,055 million cubic feet per day (MMcf/day) and 3,385 MMcf/day, respectively (CGEU 2018). Total natural gas consumption in SoCalGas's service area was 701,469 MMcf for 2018, which is equivalent to 1,921 MMcf/day (CEC 2019b).

5.4.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

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- E-1 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- E-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following threshold would be less than significant:

- Threshold E-2

This impact will not be addressed in the following analysis.

5.4.3 Plans, Programs, and Policies

- PPP E-1 New buildings are required to achieve the current California Building Energy Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (CALGreen) (Title 24, Part 11). The 2016 Building Energy Efficiency Standards were effective starting January 1, 2017. The 2019 Building Energy Efficiency Standards became effective on January 1, 2020. The Building Energy Efficiency Standards and CALGreen are updated tri-annually with a goal to achieve zero net energy for residential buildings by 2020 and nonresidential buildings by 2030.
- PPP E-2 New buildings are required to adhere to the California Green Building Standards Code (CALGreen) requirement to provide bicycle parking for new nonresidential buildings, or meet local bicycle parking ordinances, whichever is stricter (CALGreen Sections 5.106.4.1, 14.106.4.1, and 5.106.4.1.2).
- PPP E-3 California's Green Building Standards Code (CALGreen) requires the recycling and/or salvaging for reuse at minimum of 65 percent of the nonhazardous construction and demolition waste generated during most "new construction" projects (CALGreen Sections 4.408 and 5.408). Construction contractors are required to submit a construction waste management plan that identifies the construction and demolition waste materials to be diverted from disposal by recycling, reuse on the project, or salvaged for future use or sale and the amount (by weight or volume).
- PPP E-4 Construction activities are required to adhere to California Code of Regulations Title 13 Section 2499, which requires that nonessential idling of construction equipment is restricted to five minutes or less.
- PPP E-5 New buildings are required to adhere to the California Green Building Standards Code and the City's municipal code requirements to increase water efficiency and reduce urban per capita water demand.

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5.4.4 Environmental Impacts

5.4.4.1 METHODOLOGY

Based on CEQA Guidelines Appendix F, Energy Conservation, in order to ensure energy implications are considered in project decisions, EIRs include a discussion of the potential impacts of Proposed Projects, with particular emphasis on avoiding or reducing wasteful, unnecessary, or inefficient use of energy resources. Environmental effects may include the Proposed Project's energy requirements and its energy use efficiencies by amount and fuel type during demolition, construction, and operation; the effects of the Proposed Project on local and regional energy supplies; the effects of the Proposed Project on peak- and base-period demands for electricity and other forms of energy; the degree to which the Proposed Project complies with existing energy standards; the effects of the Proposed Project on energy resources; and the Proposed Project's projected transportation energy use requirements and its overall use of efficient transportation alternatives, if applicable.

5.4.4.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.4-1: The project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. [Threshold E-1]

Short-Term Construction Impacts

Construction of the Proposed Project would create temporary increased demands for electricity and vehicle fuels compared to existing conditions and would result in short-term transportation-related energy use.

Electrical Energy

Construction of the Proposed Project would not require electricity to power most construction equipment. Electricity use during construction would vary during different phases of construction. The majority of construction equipment during demolition and grading would be gas- or diesel-powered, and the later construction phases would require electricity-powered equipment for interior construction and architectural coatings. Overall, the use of electricity would be temporary and would fluctuate according to the phase of construction. Additionally, it is anticipated that the majority of electric-powered construction equipment would be hand tools (e.g., power drills, table saws, compressors) and lighting, which would result in minimal electricity usage during construction activities. Therefore, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be less than significant.

Natural Gas Energy

It is not anticipated that construction equipment used for the Proposed Project would be powered by natural gas, and no natural gas demand is anticipated during construction. Therefore, impacts would be less than significant with respect to natural gas usage.

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Transportation Energy

Transportation energy use depends on the type and number of trips, vehicle miles traveled, fuel efficiency of vehicles, and travel mode. Transportation energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel and/or gasoline. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. It is anticipated that the majority of off-road construction equipment, such as those used during demolition and grading, would be gas- or diesel-powered. In addition, all construction-equipment would cease upon completion of project construction. Thus, impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure. Furthermore, to limit wasteful and unnecessary energy consumption, the construction contractors are required to minimize nonessential idling of construction equipment during construction, in accordance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

Energy consumption during construction (2021 through 2024) was calculated using the CalEEMod (v. 2016.3.2.25) computer model and data from the EMFAC2017 (v. 1.0.2) and OFFROAD2017 (v. 1.0.1) databases. The results are shown in Table 5.4-1.

Table 5.4-1 Construction-Related Fuel Usage

Project Component	Gas		Diesel		Electricity	
	VMT	Gallons	VMT	Gallons	VMT	kWh
Construction Worker Commute	1,162,406	39,101	8,913	190	20,319	6,637
Construction Vendor Trips	2,677	526	26,950	3,291	0	0
Construction Truck Haul Trips	548	128	652,331	98,798	0	0
Construction Off-Road Equipment	N/A	37,950	N/A	100,849	N/A	0
Total	1,165,631	77,705	688,194	203,128	20,319	6,637

Source: CalEEMod v. 2016.3.2; EMFAC2017 v. 1.0.2; OFFROAD2017 v. 1.0.1.
Notes: VMT=vehicle miles traveled; kWh=kilowatt hour

The Proposed Project would not result in wasteful, inefficient, or unnecessary use of energy during construction. It is anticipated that the construction equipment would be well maintained and meet the appropriate tier ratings per CALGreen or EPA emissions standards, so that adequate energy efficiency level is achieved. Construction trips would not result in unnecessary use of energy since the Project Site is centrally located and is served by numerous regional freeway systems (e.g., I-5, SR-73, and SR-74) that provide the most direct routes from various areas of the region. Electrical energy would be available for use during construction from existing power lines and connections, precluding the use of less efficient generators. Thus, energy use during construction of the project would not be considered inefficient, wasteful, or unnecessary. Impacts would be less than significant.

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Long-Term Impacts During Operation

As the building on the Proposed Project site is currently vacant, no energy is being used on the Project Site. Operation of the Proposed Project would therefore generate new demand for electricity, natural gas, and transportation energy. Operational use of energy would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems, use of on-site equipment and appliances; and indoor, outdoor, perimeter, and parking lot lighting.

Electrical Energy

Operation of the Proposed Project would consume electricity for various purposes, including but not limited to heating, cooling, and ventilation of buildings, water heating, operation of electrical systems, lighting, and use of on-site equipment and appliances. Electrical service to the Proposed Project would be provided by SDGE through connections to existing off-site electrical lines and new on-site infrastructure. As shown in Table 5.4.2, electricity use at the Project Site would be 1,339,813 kilowatt hours per year. This is primarily due to electricity used by the proposed residential housing.

Table 5.4-2 Electricity Consumption

Land Use	Electricity (kWh/year) ¹
Proposed Project Conditions	
Condo/Townhouse	402,450
Clubhouse	23,880
Parking Lot	57,400
Single Family Housing	856,083
Total	1,339,813

Source: CalEEMod Version 2016.3.25

¹ Accounts for total electricity use from proposed buildings. See Appendix C.

While the Proposed Project would generate new energy demand onsite, but it would be required to comply with the current Building Energy Efficiency Standards and CALGreen; therefore, it would not result in wasteful or unnecessary electricity demands. Therefore, the Proposed Project would not result in a significant impact related to electricity.

Natural Gas Energy

The proposed natural gas consumption for the Project Site is shown in Table 5.4-3. The Proposed Project would generate an average natural gas demand of 4,884,460 kilo British thermal units per year. Development pursuant to the Proposed Project would result in new natural gas demands. However, because the Proposed Project would be built to meet the Building Energy Efficiency Standards, it would not result in wasteful or unnecessary natural gas demands. Therefore, operation of the Proposed Project would result in less than significant impacts with respect to natural gas usage.

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Table 5.4-3 Natural Gas Consumption

Land Use	Natural Gas (kBTU/year) ¹
Proposed Project Conditions	
Condo/Townhouse	1,793,800
Clubhouse	50,070
Parking Lot	0
Single Family Housing	3,090,660
Total	4,884,460

Source: CalEEMod Version 2016.3.25

¹ Assumes that each unit would have a gas fireplace. Total includes 364,500 KBTU and 481,500 KBTU associated with operation of these fireplaces for the townhomes and single family housing, respectively. See Appendix C. kBTU = kilo British thermal units

Transportation Energy

The Proposed Project would consume transportation energy during operations from the use of motor vehicles. The efficiency of these motor vehicles is unknown, such as the average miles per gallon. Estimates of transportation energy use are based on the overall vehicle miles traveled (VMT) and its associated transportation energy use. The project-related VMT would primarily come from residents. As seen in Table 5.4-4, the annual VMT for the Proposed Project is estimated to be 6,665,974 miles. However, because the Proposed Project involves development of new residential housing opportunities, it would provide more opportunities to reside in an urbanized area with nearby amenities and public transit options. These features of the Proposed Project would contribute to minimizing VMT and transportation-related fuel usage. Thus, it is expected that operation-related fuel usage associated with the Proposed Project would not be any more inefficient, wasteful, or unnecessary than similar development projects. Therefore, impacts would be less than significant with respect to operation-related fuel usage.

Table 5.4-4 Project Annual Operation-Related Fuel Usage

	Gasoline		Diesel		CNG		Electricity	
	Annual VMT	Annual Gallons	Annual VMT	Annual Gallons	Annual VMT	Annual Gallons	Annual VMT	Annual kWh
Proposed Project¹								
Passenger Vehicles	6,387,829	207,220	114,027	6,256	596	256	163,521	53,770

Source: EMFAC2017 v. 1.0.2. Annual VMT is based on data provided by Urban Crossroads.

Level of Significance Before Mitigation: With implementation of PPPs E-1 through E-5, Impact 5.4-1 would be less than significant.

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5.4.5 Cumulative Impacts

The areas considered for cumulative impacts to electricity and natural gas supplies are the service areas of SDGE and SoCalGas, respectively, described above in Section 5.4.1.2. Other projects would generate increased electricity and natural gas demands. However, all projects within the SDGE and SoCalGas service areas would be required to comply with the Building Energy Efficiency Standards and CALGreen, which would contribute to minimizing wasteful energy consumption and promoting renewable energy sources. Therefore, cumulative impacts would be less than significant, and project impacts would not be cumulatively considerable.

5.4.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements (PPP E-1 through E-5), energy impacts would be less than significant: 5.4-1.

5.4.7 Mitigation Measures

No mitigation measures are necessary because there were no significant impacts identified under the applicable thresholds.

5.4.8 Level of Significance After Mitigation

Impacts are less than significant.

5.4.9 References

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