4.14 ENERGY CONSUMPTION

The California Environmental Quality Act (CEQA) provides that an environmental impact report shall include a detailed statement identifying all significant effects on the environment of a proposed project, and 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" (California Public Resources Code, Section 21100(b)(1),(3)).

Appendix F of the CEQA Guidelines, Energy Conservation, includes recommendations for information that should be included in an environmental impact report (EIR) to "assure that energy implications are considered in project decisions" (14 CCR 15000 et seq.). Appendix F directs that EIRs should include "discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3))" (14 CCR 15000 et seq.).

Appendix F of the CEQA Guidelines lists potential energy impacts that may be relevant to the Energy Conservation analysis in an EIR. Where a listed item is applicable or relevant to a proposed project, the EIR should consider it. This analysis applied the following relevant listed items from Appendix F, subdivision (II)(F)(C), to the discussion of impacts: energy requirements and energy use efficiencies of the project by fuel type and amount for each stage of the project, the effects of the project on local and regional energy supplies and on requirements for additional capacity, compliance with existing energy standards, the effects of the project on energy resources, and the project's projected transportation energy use requirements and overall use of efficient transportation alternatives.

In accordance with Appendix F, this EIR includes relevant information and analyses that address the energy implications of the project. This section represents a summary of the project's anticipated energy needs, impacts, and conservation measures. Information found herein, as well as other aspects of the project's energy implications, are discussed in greater detail elsewhere in this EIR, including in Section 4.2, Transportation; Section 4.4, Air Quality; Section 4.5, Greenhouse Gas Emissions; and Section 4.12, Public Services and Utilities.

4.14.1 Energy Setting

Local Service and Use

Electricity

San Diego Gas & Electric (SDG&E) provides electric services to 3.6 million customers through 1.4 million electric meters and 873,000 natural gas meters throughout a 4,100-square-mile service area in San Diego and Southern Orange County (SDG&E 2016). SDG&E is a

subsidiary of Sempra Energy. The residents and businesses of Oceanside receive their electrical service from SDG&E. According to the California Public Utilities Commission (CPUC), SDG&E consumed approximately 16.467 billion kilowatt-hours (kWh) of electricity in total in 2014 (CPUC 2016).

SDG&E receives electric power from a variety of sources. According to CPUC 2016 Biennial Renewables Portfolio Standard (RPS) Program Update, 36.4% of SDG&E's power came from eligible renewables, including biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2016). This is a large increase from the 15.7% that SDG&E maintained in 2011.

The Overview webpage at the California Energy Almanac, the online database of the California Energy Commission (CEC), states that statewide electricity generation exceeds 200,000 gigawatt-hours each year, with natural gas as the main source for electricity generation, responsible for 60.5% of the total in-state electric generation system power. In addition, the RPS established a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010 and to 33% by 2020. Currently, California's in-state renewable generation is composed of biomass, geothermal, small hydro, wind, and solar generation sites that make up approximately 19.6% of the total in-state generational output (CEC 2014).

Based on recent energy supply and demand projections in California, statewide annual peak demand is projected to grow an average of 890 megawatts (MW) per year for the next decade, or 1.4% annually, while per capita consumption is expected to remain relatively constant at 7,200–7,800 kWh per person (CEC 2007). In San Diego County, the CEC reported an annual electrical consumption of approximately 19.9 billion kWh in total, with 13.1 billion kWh for non-residential use and 6.8 billion kWh for residential use in 2014 (CEC n.d.).

Natural Gas

SDG&E also provides natural gas service to the Oceanside area. The system receives gas from SDG&E's regional transmission system. (SDG&E 2016).

The CEC reports that SDG&E consumed a total of approximately 139 trillion British thermal units (Btu) of natural gas in 2013, including 20 trillion Btu for commercial buildings, 3.7 trillion Btu for industrial buildings, and 34 trillion Btu for residential use. In San Diego County, total natural gas consumption was approximately 537.8 million Btu in 2013, with 219.5 million Btu for non-residential use and 318.3 million Btu for residential use (California Gas and Electric Utilities 2014).

For the purposes of this analysis, energy consumption is measured in kWh or MMBtu. One million Btu is equivalent to 293.297 kWh.

4.14.2 Regulatory Framework

Federal

Although there are federal regulations addressing energy efficiency in the built environment, fuel efficiency for motor vehicles, energy sources used by the United States, and national conservation goals, none of these regulations and policies applies directly to the proposed project and this analysis of the project's energy consumption.

State

California Environmental Quality Act

Appendix F of the CEQA Guidelines calls for discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

Global Warming Solutions Act

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006) enacted Sections 38500–38599 of the California Health and Safety Code. AB 32 establishes regulatory, reporting, and market procedures to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires reduction of statewide GHG emissions to 1990 levels by 2020. The procedures for reducing GHG emissions will relate to the generation and efficient use of energy. The California Air Resources Board adopted the Climate Change Scoping Plan in 2008, which is the state's plan to achieve the statewide GHG reductions required by AB 32. The most significant proposed GHG reductions are recommended through improving emission standards for light-duty vehicles, implementation of the Low-Carbon Fuel Standard, energy efficiency measures in buildings and appliances, and an RPS for electricity production.

California Energy Commission

The CEC's Integrated Energy Policy Report set forth policies that would enable the state to meet its energy needs under the carbon constraints established in the 2006 Global Warming Solutions Act. The Integrated Energy Policy Report also provides a set of recommended actions to achieve these policies.

Title 24, California Code of Regulations, Energy Efficiency Standards

Title 24 sets the energy efficiency standards for residential and nonresidential buildings. The CEC has adopted changes to the Building Energy Efficiency Standards to accomplish the following:

- Respond to California's energy crisis to reduce energy bills, increase energy delivery system reliability, and contribute to an improved economic condition for the state.
- Respond to the AB 970 (Statutes of 2000) urgency legislation to adopt and implement updated and cost-effective building energy efficiency standards.
- Respond to various statutes of 2001, which included urgency legislation to adopt energy efficiency building standards for outdoor lighting.
- Emphasize energy efficiency measures that save energy at peak periods and seasons, improve the quality of installation of energy efficiency measures, incorporate recent publicly funded building science research, and collaborate with California utilities to incorporate results of appropriate market incentives programs for specific technologies.

The 2019 Title 24 standards were approved and adopted by the California Building Standards Commission in December 2018. The 2019 standards became effective on January 1, 2020. The standards would require that all low-rise residential buildings shall have a photovoltaic system meeting the minimum qualification requirements such that annual electrical output is equal to or greater than the dwelling's annual electrical usage. Notably, net energy metering rules limit residential rooftop solar generation to produce no more electricity than the home is expected to consume on an annual basis. Single-family homes built with the 2019 standards will use about 7% less energy due to energy efficiency measures versus those built under the 2016 standards, while new nonresidential buildings will use about 30% less energy (CEC 2018).

Additionally, the 2013 California Green Building Standards Code, or CALGreen Code (24 CCR 11), which took effect on January 1, 2014, requires buildings to reduce energy and water consumption and establishes specific performance standards that appliances and fixtures must meet. The code contains mandatory and voluntary measures for site planning and design, energy efficiency, water efficiency and conservation, materials conservation, resource use efficiency, and environmental quality. The 2016 CALGreen standards became effective on January 1, 2017. The mandatory standards require the following:

- 20% mandatory reduction in indoor water use.
- 50% diversion of construction and demolition waste from landfills.
- Mandatory inspections of energy systems to ensure optimal working efficiency.

State of California Energy Plan

The State Energy Plan, drafted by the CEC, identifies emerging trends in energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan recommends reductions in congestion and increased efficiency in the use of fuel supplies. The plan also encourages urban designs that reduce vehicle miles traveled (VMT) and promote pedestrian and bicycle access.

California Renewables Portfolio Standard

Under Senate Bill X1-2, signed into law in April 2011, the RPS applies to all electricity retailers in California. These entities must meet the RPS goals of having 20% of energy retail sales come from eligible renewable sources by the end of 2013, 25% by the end of 2016, and 33% by 2020.

California's Energy Storage Law

California's Energy Storage Law (AB 2514; Chapter 469, Statutes of 2010) requires the governing board of each publicly owned utility to "determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems (California Public Utilities Code Section 2836(b)(1)). AB 2514 also requires that "all procurement of energy storage systems" by a publicly owned utility "shall be cost-effective" (California Public Utilities Code Section 2836.6).

Local

City of Oceanside General Plan

The Land Use and Circulation Elements of the existing City of Oceanside General Plan (City of Oceanside 2002 and 2012) includes various policies related to improving energy efficiency, increasing the use of alternative modes of transportation, employing sustainable planning and design techniques, and providing environmentally sound landscaping practices. Applicable policies are identified in Section 4.5 GHG Emissions.

4.14.3 Impacts

Thresholds of Significance

Appendix F of the CEQA Guidelines does not provide a specific numeric threshold to evaluate the potential significance of the energy effects of a proposed project. Rather, the emphasis is on reducing "the wasteful, inefficient, and unnecessary consumption of energy" (Public Resources Code Section 21100(b)(1),(3)). To use this standard as a threshold of significance, the following criteria are considered in this analysis:

Project-related energy usage would be considered "wasteful, inefficient, and unnecessary" if:

1. The project would violate state and federal energy standards, including Title 24 of the California Code of Regulations.
2. The project would consume a substantially greater amount of energy, in either the construction or operational phase, than a similar project.

1. Would the project violate state and federal energy standards, including Title 24 of the California Code of Regulations?

As discussed in Chapter 3, Project Description, the project would require an approximately 23-month-long construction period. The construction phases anticipated to occur include site clearing, grading, and trenching for utilities followed by building construction, paving, architectural coating, and installation of landscaping.

Heavy-duty construction equipment associated with demolition and construction activities would rely on diesel fuel, as would haul trucks involved in removing the materials from demolition of the existing on-site buildings.

Heavy-duty construction equipment of various types would be used during each phase of construction. The California Emissions Estimator Model (CalEEMod) analysis discussed in Section 4.4, Air Quality, and included in Appendices F and G to this EIR, includes the proposed construction schedule and assumed equipment usage. Based on that analysis, over all phases of construction, diesel-fueled, project site construction equipment would run for an estimated 101,615 hours, as summarized in Table 4.14-1.

Table 4.14-1
Hours of Operation for Construction Equipment

Phase	Hours of Equipment Use
Rough Grading and Soil Amendment	1,224
Caissons for Hotel Foundations and Parking Structure/Retaining Wall	3,960
Utilities	2,752
Parking Structure	10,472
Dry Utilities	736
Paving	8,040
Hotel Construction 1	23,800
Precise Grading	4,288
Hotel Construction 2	19,380
Hotel Construction 3	19,380
Architectural Coating	1,578
Jefferson Widening/Pump Station Modification	~~5,304~~4,624
12 kV Underground Conversion	4,720
Total	**~~105,634~~104,954**

Source: Appendix G.

Assuming an average diesel fuel efficiency of 1.74 gallons per hour, project site construction equipment would consume approximately ~~183,803.2~~182,620 gallons of diesel. With a conversion factor of 40.7 kWh per gallon of diesel, the energy consumption due to construction would be approximately ~~7,480,788.6~~7,432,634 kWh (Appendix G).

CalEEMod estimates that approximately ~~2,812~~3,420 daily truck trips would be required during construction. This would generate approximately ~~56,240~~68,400 VMT. Assuming an average diesel fuel efficiency of 6 miles per gallon for medium-heavy duty and heavy-heavy duty haul trucks (EIA 2013), hauling would consume approximately ~~9,373.33~~11,400 gallons of diesel. With a conversion factor of 40.7 kWh per gallon of diesel, the energy consumption due to hauling would be ~~381,494.7~~463,980 kWh.

During the remaining construction phases, it is expected that vendors will travel to and from the site in diesel-fueled vehicles to deliver materials. CalEEMod estimates that 76 total trips will be taken by vendors, which would generate approximately 554.6 VMT. Assuming an average diesel fuel efficiency of 6 miles per gallon (EIA 2013), vendor trips would consume approximately 92.47 gallons of diesel. With a conversion factor of 40.7 kWh per gallon of diesel, the energy consumption due to vendor trips to and from the site would be approximately 3,763 kWh.

The number of construction workers required would vary based on the construction phase and activity. The fuel construction workers would require for transportation would depend on the total number of worker trips estimated for the duration of construction

activity. CalEEMod estimates that construction will generate 469 worker trips (over all construction phases, spanning 23 months), which would generate approximately 5,065.2 VMT. Assuming an average fuel efficiency of 17.5 miles per gallon (DOT 2014), demolition and construction activities on site would use approximately 289.44 gallons of gasoline for construction worker trips. With a conversion factor of 33.7 kWh per gallon of gasoline, the annual energy consumption due to gasoline-fueled transportation by construction worker trips to and from the project site would be 9,754.13 kWh.

According to a 2012 study by the U.S. Energy Information Administration, California's transportation sector consumed a total of 14.1 billion gallons of gasoline and 3 billion gallons of diesel. According to the San Diego Association of Governments, in 2014, motor vehicle use in San Diego County was projected to consume 1.6 billion gallons of gasoline and diesel, combined (SANDAG 2015). Based on the fuel usage amounts presented in the previous paragraphs, demolition of the existing buildings on site and construction of the proposed project would use approximately 289.44 gallons of gasoline and 193,269 gallons of diesel. This would comprise less than 1% of gasoline and diesel fuel consumption in the county.

Temporary electric power for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers would be provided by SDG&E. The electricity used for such activities would be less than that required for project operation and would have a minimal contribution to the project's overall energy consumption.

Project construction would also involve use of non-renewable or slowly renewable resources used to create building materials including certain types of lumber and other forest products; aggregate materials used in concrete and asphalt such as sand, gravel, and stone; metals such as steel, copper, and lead; petrochemical construction materials such as plastics; and water.

Table 4.14-2 summarizes the energy consumption associated with construction at the project site. This reflects the total amount of energy consumption over the 20-month construction period.

Table 4.14-2
Energy Consumption from Construction

Source	Kilowatt Hours (kWh) Consumed
Diesel-fueled, on-site construction equipment	7,480,788.6
Hauling Trips	~~381,494.7~~466,693.3
Vendor trips	3,763
Construction worker trips	9,754.13
Total	**~~7,875,800~~7,960,999 kWh**

Source: Appendix G

Construction would comply with all relevant energy-related regulations by conserving energy and natural resources to the extent feasible. The energy demands due to diesel and gasoline use during construction would be small relative to statewide and local demands for fuel use, as discussed previously. The energy consumption during project construction would be commensurate with typical construction projects and would not use energy wastefully or inefficiently. Therefore, the temporary short-term consumption energy consumption impacts due to construction are considered less than significant.

2. Would the project consume a substantially greater amount of energy, in either the construction or operational phase, than a similar project?

As discussed in Chapter 3, Project Description, the proposed project would construct 426 hotel rooms in three hotel buildings. Hotel 1 would be an approximately 167,160-square-foot building with 179 rooms and a 3,500-square-foot restaurant; Hotel 2 would be a 73,285-square-foot building with 135 rooms; Hotel 3 would be an approximately 82,570-square-foot building with 112 hotel rooms. The project would also construct a new circulation system throughout the proposed project and would install landscaping and recreational facilities. The total annual energy demands associated with project operation are described and quantified in the following text and in Table 4.14-3 Energy Consumption from Operation.

Daily operation of the proposed project would generate demand for electricity, natural gas, and water supply, as well as generating wastewater requiring off-site conveyance, treatment, and disposal.

SDG&E uses a variety of renewable energy sources to generate a portion of its electricity, and these sources would contribute to the project's electricity supply. Due to the nature of the project site, which is located in a developed, landlocked area, it would be infeasible to use on-site renewable energy sources such as hydropower, biodiesel, or ocean-dependent technologies.

The CalEEMod program estimates energy usage associated with building systems that are regulated under Title 24 (such as the heating and cooling system), lighting, and use of office equipment, appliances, plug-ins, and other sources not covered by Title 24. The CalEEMod modeling for the project estimates that the project components would consume ~~17,211,600~~19,131,460 thousand Btus of natural gas and ~~4,908,020~~4,623,942 kWh of electricity annually. With a conversion factor of 293.297 kWh per million Btus, the Btu consumption would correlate to ~~5,048,110.65~~5,611,199.82 kWh.

Further, the CalEEMod modeling estimates that the proposed project would generate approximately 4,260 daily vehicle trips during the week, and an additional 4,260 daily trips on Saturdays and 3,101 daily trips on Sundays. Using the default assumptions in

CalEEMod regarding trip length and total VMT, the project is expected generate a total of 7,779,207 VMT annually. Assuming an average fuel efficiency of 17.5 miles per gallon (Economic Perspective 2013), the proposed project would increase consumption of gasoline by 444,526 gallons annually. With a conversion factor of 33.7 kWh per gallon of gasoline, the annual energy consumption due to these trips would be 14,980,530 kWh.

Table 4.14-3
Energy Consumption from Operation

Source	Kilowatt Hours (kWh) Consumed
Building operations (heating/cooling, lighting, electronics)	~~9,956,130.65~~10,235,141.82
Daily vehicle trips	14,980,530
Total	**~~24,936,660.65~~25,215,671.82 kWh**

Source: Appendix G.

Project Design Features

CEQA Guidelines, Appendix F, Energy Conservation, states that the "goal of conserving energy implies the wise and efficient use of energy." It lists three means of achieving this goal: decreasing overall per capita energy consumption, decreasing reliance on fossil fuels, and increasing reliance on renewable energy sources (14 CCR 15000 et seq.).

The project would include the following project design features (PDFs) intended to reduce the project's GHG emissions. These PDFs would also reduce energy consumption associated with the project.

- **PDF-GHG-1:** The project shall include electric shuttle service during project operations, which would reduce mobile emissions generated from proposed project-related vehicular traffic.
- **PDF-GHG-2:** Native/drought-tolerant landscaping shall be provided throughout the project site.
- **PDF-GHG-3:** Low-flow toilets and low-flow showerhead fixtures shall be incorporated into the project design.
- **PDF-GHG-4:** The project shall provide the infrastructure for irrigation from recycled water.

Additionally, the project would encourage alternative sources of transportation, and would include the use of recycled materials in construction and the recycling or reuse of construction materials and debris, and would include other energy conservation features such as parking lot shade trees and Energy Star appliances.

Conclusion

The project site is located in an area where all public services are available. The proposed project would result in an increase in local consumption of both electricity and natural gas. However, the project's energy demands would be consistent with the anticipated level of economic development and growth in the region, and SDG&E would have sufficient available capacity to serve the proposed project. Further, the project would incorporate energy-efficient elements to ensure that energy consumption of the proposed project would not be wasteful or inefficient. The demand for commercial spaces in the project area demonstrates that the energy consumption of these facilities would not be unnecessary. Therefore, impacts related to wasteful, inefficient, or unnecessary energy consumption would be less than significant.

4.14.4 Mitigation Measures

No mitigation measures are required.

4.14.5 Level of Significance After Mitigation

All impacts would be less than significant, and no mitigation is required.

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