4.5 ENERGY

4.5.1 Introduction

The section evaluates potential impacts concerning energy that could result from the proposed Project, including future housing development on the housing sites. The energy analysis consists of a summary of the existing conditions in the City of Newport Beach and its Sphere of Influence (City), the energy regulatory framework, a discussion of the Project's potential impacts on energy resources, and identification of mitigation that may reduce energy consumption, as needed. Energy calculations are included in **Appendix D.**

4.5.2 Regulatory Setting

Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, it has been regularly updated and amended by subsequent laws and regulations. This act is the foundation of most federal energy requirements.

Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 was passed to reduce the country's dependence on foreign petroleum and improve air quality. The act includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. The act requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in the act. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the Energy Policy Act to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy and Independence 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. EISA'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 Renewable Fuel Standard (RFS) program (RFS2) was expanded in several key ways:

- Expanded the RFS program to include diesel, in addition to gasoline;
- Increased the volume of renewable fuel required to be blended into transportation fuel;
- Established new categories of renewable fuel and set separate volume requirements for each; and

- Required the U.S. Environmental Protection Agency (U.S. 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, reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector.

The EISA also includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) regulates the interstate transmission of electricity, natural gas, and oil. FERC is the federal agency with jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, and oil pipeline rates. FERC also reviews and authorizes liquefied natural gas terminals, interstate natural gas pipelines, and nonfederal hydropower projects. Electricity is run by the states; however, FERC has jurisdiction over certain matters.

State

Warren-Alquist Act

The California Legislature passed the Warren-Alquist Act in 1974, which gives statutory authority to the California Energy Commission (CEC). The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for both buildings constructed and appliances sold in California.
- It removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projections, and transferred it to the more impartial CEC.
- It directed the CEC to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as "non-conventional energy sources."

Advanced Clean Cars II

The Advanced Clean Cars II regulations will rapidly scale down light-duty-passenger, pickup truck and, sports utility vehicle emissions starting with the 2026 model year through 2035. The regulations will first amend the Zero-emission Vehicle Regulation to require an increasing number of zero-emission vehicles and rely on currently available advanced vehicle technologies (i.e., battery-electric, hydrogen fuel cell electric and plug-in hybrid) to meet air quality and climate change emissions standards. Second, the Low-emission Vehicle Regulations were amended to include increasingly stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions. The regulations will substantially reduce air pollutants that cause climate change and threaten public health. In addition, the regulations will provide public health benefits of at least 12 billion dollars over the life of reductions by reducing premature deaths, hospitalizations and lost workdays associated with exposure to air pollution.

Advanced Clean Trucks

The Advanced Clean Trucks regulations is a manufacturers Zero-emissions vehicle (ZEV) sales requirement and a one-time reporting requirement for fleets and large entities. The development and use of advanced clean trucks will help CARB achieve its emissions reduction strategies as outlined in the State Implementation Plan (SIP), Sustainable Freight Action Plan, Senate Bill (SB) 350, and Assembly Bill (AB) 32.

Renewable Portfolio Standards[1]

In 2002, California established its Renewable Portfolio Standard program with the goal of increasing the annual percentage of renewable energy in the State's electricity mix by the equivalent of at least one percent of sales, with an aggregate total of 20 percent by 2017. The California Public Utilities Commission subsequently accelerated that goal to 2010 for retail sellers of electricity (Public Utilities Code § 399.15(b)(1)). Then-Governor Schwarzenegger signed Executive Order S-14-08 in 2008, increasing the target to 33 percent renewable energy by 2020. In September 2009, Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing Executive Order S-21-09, which directs the California Air Resources Board (CARB) under its AB 32 authority to enact regulations to help the State meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020. In September 2010, CARB adopted its Renewable Electricity Standard regulations, which require all of the State's load-serving entities to meet this target. In October 2015, then-Governor Brown signed into legislation SB 350, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Signed in 2018, SB 100 revised the goal of the program to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030.

SB 100 established a further goal to have an electric grid that is entirely powered by clean energy by 2045. Under SB 100, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target. Approved in 2022, SB 1020 revised the State policy to provide that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035; 95 percent of all retail sales of electricity to California end-use customers by December 31,2040; 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045; and, 100 percent of electricity procured to serve all State agencies by December 31, 2035.

California 2007 Energy Action Plan Update

The 2007 Energy Action Plan II is the State's principal energy planning and policy document. The plan describes a coordinated implementation strategy to ensure that California's energy resources are adequate, affordable, technologically advanced, and environmentally sound. In accordance with this plan, the State and its electricity providers would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply to meet its energy needs.

Integrated Energy Policy Report

Pursuant to SB 1368, the CEC is responsible for preparing integrated energy policy reports, which identify emerging trends related to energy supply, demand, conservation, public health and safety, and

[1] California Public Utilities Commission. (2021). *Renewable Portfolio Standard (RPS) Program.* https://www.cpuc.ca.gov/rps/ Accessed November 2023.

maintenance of a healthy economy. The latest Integrated Energy Policy Report Update was released in 2022 and addressed a variety of issues, including, but not limited to, implementation of SB 350, electricity resource/supply plans, electricity and natural gas demand forecast, natural gas outlook, transportation energy demand forecasts, doubling energy efficiency savings, integrated resource planning, climate adaptation and resiliency, renewable gas, Southern California energy reliability, distributed energy resources, strategic transmission investment plan, and existing power plant reliability issues.

SB 1368

On September 29, 2006, then-Governor Schwarzenegger signed into law SB 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the State's utilities to those power plants that meet an emissions performance standard jointly established by the CEC and the CPUC. The CEC has designed regulations that:

- Establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 pounds carbon dioxide (CO_2) per megawatt-hour. This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of GHGs;
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long-term while meeting the State's standards for environmental impact; and
- Establish a public process for determining the compliance of proposed investments with the emissions performance standard (EPS) (Perata, Chapter 598, Statutes of 2006).

California Building Energy Efficiency Standards: Title 24, Part 6 (California Energy Code)

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission [CEC]) in June 1977 and are updated every three years (California Code of Regulations [CCR] 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. On May 9, 2018, the CEC adopted the 2019 Building Energy Efficiency Standards, which went into effect on January 1, 2020. The 2022 Building Energy Efficiency Standards were adopted in August 2021 and went into effect in on January 1, 2023.

The 2022 Building Energy Efficiency Standards improve upon the previous 2019 Building Energy Efficiency Standards. Among other updates, including strengthened ventilation standards for gas cooking appliances, the 2022 Energy Code includes updated standards in the following three major areas:

- New electric heat pump requirements for residential uses, schools, offices, banks, libraries, retail, and grocery stores;
- The promotion of electric-ready requirements for new homes including the addition of circuitry for electric appliances, battery storage panels, and dedicated infrastructure to allow for the conversion from natural gas to electricity; and
- The expansion of solar photovoltaic (PV) and battery storage standards to additional land uses including high-rise multifamily residences, hotels and motels, tenant spaces, offices, (including

medical offices and clinics), retail and grocery stores, restaurants, schools, and civic uses (including theaters auditoriums, and convention centers).

Buildings whose permit applications were submitted on or after January 1, 2023, must comply with the 2022 Energy Code. The 2025 Energy Code is currently in the pre-rulemaking process. If approved, the 2025 Energy Code would be effective January 1, 2026.

California Green Building Standards Code

The California Green Building Standards Code (CCR, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development. CALGreen standards require new residential and commercial buildings to comply with mandatory measures under five green building areas: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. CALGreen also provides voluntary measures (CALGreen Tier 1 and Tier 2) that local governments may adopt to encourage or require additional measures in the five green building topics. The CEC approved the 2022 California Green Building Standards Code in September 2022 that went into effect on January 1, 2023. The 2025 CALGreen Code, if approved by the California Building Standards Commission, will be effective January 1, 2026.

Local

Newport Beach Energy Action Plan[2]

The City created an Energy Action Plan in 2013 to provide a roadmap for the City to reduce GHGs through reductions in energy used in facility buildings and operations. The Energy Action Plan identifies past energy measures that have been implemented and present measures that currently are in that process, all of which will contribute to the energy reduction goal. In addition, the Energy Action Plan identifies other potential energy reduction measures that the City will consider for future implementation. The City's long term vision for energy efficiency focuses around the following three primary objectives:

- Reduce the City's carbon footprint and its adverse effect on the environment;
- Conserve energy at the local government facilities; and
- Raise energy conservation awareness in local community and improve the quality of life.

City of Newport Beach General Plan

The *City of Newport Beach General Plan 2006 Update* (General Plan) includes goals and policies to sustain and conserve energy consumption within the City. Continuing and enhancing energy efficiency and conservation strategies help residents and businesses save money, and conserve valuable resources needed to generate energy. Energy efficiency programs also help support the local economy and can make Newport Beach more resilient to future disasters by decreasing stress on existing energy distribution networks. The following General Plan goals and policies that have been adopted by the City for the purpose of avoiding or mitigating an environmental effect are applicable to future development projects associated with the proposed Project.

[2] City of Newport Beach. (2013). *City of Newport Beach Energy Action Plan.* https://www.newportbeachca.gov/home/showpublisheddocument/16576/635682493202100000. Accessed November 2023.

Housing Element

Housing Policy 5.2 **Improve energy efficiency of all housing unit types (including mobile homes).**

Policy Action 5G **Energy Efficiency in Residential Projects.** The City of Newport Beach will continue to require that any affordable housing developments that receive City assistance from Community Development Block Grant (CDBG) funds or from the City's Affordable Housing Fund shall be required, to the extent feasible, to include installation of energy efficient appliances and devices that will contribute to reduced housing costs for future occupants of the units. The City will continue to implement program as housing projects are awarded funds from the City in the 6th Cycle.

Land Use Element

Goal LU 6.15 **A mixed-use community that provides jobs, residential, and supporting services in close proximity, with pedestrian-oriented amenities that facilitates walking and enhance livability.**

Policy LU 6.15.25 **Sustainable Development Practices.** Require that development achieves a high level of environmental sustainability that reduces pollution and consumption of energy, water, and natural resources. This may be accomplished through the mix and density of uses, building location and design, transportation modes, and other techniques. Among the strategies that should be considered are the integration of residential with jobs-generating uses, use of alternative transportation modes, maximized walkability, use of recycled materials, capture and re-use of storm water on-site, water conserving fixtures and landscapes, and architectural elements that reduce heat gain and loss.

City of Newport Beach Municipal Code (Title 15, Chapter 15.18 Solar Systems)

Newport Beach Municipal Code Section 15.18 adopts an expedited, streamlined solar permitting process that complies with the Solar Rights Act and AB 2188 to achieve timely and cost-effective installations of small residential rooftop solar energy systems. The provisions of this chapter encourage the use of solar systems by removing unreasonable barriers, minimizing costs to property owners and the City, and expanding the ability of property owners to install solar energy systems. Future housing development facilitated by the proposed Project would be subject to the Building Division's permit review and application requirements to implement solar energy systems.

4.5.3 Existing Conditions

Southern California Edison (SCE) is the City's electricity provider. SCE provides electricity to approximately 15 million people, 180 incorporated cities, 15 counties, 5,000 large businesses, and 280,000 small businesses throughout its 50,000-square-mile service area.[3] SCE produces and purchases their energy from a mix of conventional and renewable generating sources. **Table 4.5-1: Energy Resources Used to Generate Electricity for SCE** identifies the SCE electric power mix in 2021 compared to the statewide 2021 power mix. According to the CEC, the total electricity demand for the SCE service area was 85,870 gigawatt

[3] SCE. (2023). *By the Numbers: Who We Serve*. https://www.sce.com/about-us/who-we-are. Accessed November 2023.

hours (GWh),[4] while electricity use attributed to the County was approximately 20,244 GWh from residential and non-residential sectors.

Table 4.5-1: Energy Resources Used to Generate Electricity for SCE

Energy Resources	2021 SCE Power Mix	2021 CA Power Mix
Eligible Renewable:	31.4%:	33.6%:
Biomass and Biowaste	0.1%	2.3%
Geothermal	5.7%	4.8%
Eligible Hydroelectric	0.5%	1.0%
Solar	14.9%	14.2%
Wind	10.2%	11.4%
Coal	0%	3.0%
Large Hydroelectric	2.3%	9.2%
Natural Gas	22.3%	37.9%
Nuclear	9.2%	9.3%
Other	0.2%	0.2%
Unspecified Sources of Power[1]	34.6%	6.8%
Total	**100%**	**100%**

Notes:
1 Electricity from transactions that are not traceable to specific generation sources.
Source: SCE. (2021). *2021 Power Content Label, Southern California Edison*. https://www.sce.com/sites/default/files/custom-files/Web%20files/2021%20Power%20Content%20Label.pdf. Accessed November 2023.

Major SCE facilities located in the planning area include a generating station, six substations, and switching yards. **Table 4.5-2: Residential and Nonresidential Electricity Consumption for Orange County** identifies the residential and nonresidential electricity demand between 2011 and 2022.

In 2011, residential uses comprised 34 percent of Orange County's electricity demand, while non-residential uses comprised 66 percent. By 2022, these percentages changed to 39 percent and 41 percent, respectively for residential and non-residential uses. Although total electricity demand has fluctuated from year to year, overall, between 2011 and 2022, Orange County's total electricity demand increased by 2 percent. However, during that same time period, electricity demand from only residential uses increased by approximately 16 percent.

[4] California Energy Commission (CEC). (2022). *Electricity Consumption by Southern California Edison*. https://ecdms.energy.ca.gov/elecbyutil.aspx. Accessed November 2023.

Table 4.5-2: Residential and Nonresidential Electricity Consumption for Orange County			
	Million Kilowatt-Hours		
Year	Residential Electricity Consumption (million kilowatt-hours)	Nonresidential Electricity Consumption (million kilowatt-hours)	Total Electricity Consumption
2022	7,830.12	12,413.60	20,243.72
2021	7,360.15	11,853.51	19,213.66
2020	7,765.26	11,967.88	19,733.14
2019	6,971.09	12,886.28	19,857.37
2018	6,845.18	13,183.67	20,028.85
2017	6,815.35	13,388.50	20,203.85
2016	6,711.07	13,531.41	20,242.48
2015	6,901.75	13,837.42	20,739.17
2014	7,036.40	13,712.46	20,748.86
2013	6,838.01	13,441.54	20,279.55
2012	7,067.85	13,332.30	20,400.15
2011	6,693.43	13,231.29	19,924.72
Source: California Energy Commission. (ND). https://ecdms.energy.ca.gov/. Accessed November 2023.			

Natural Gas

Southern California Gas Company (SoCalGas), which is the service provider for the City, serves approximately 21 million people in a 20,000-square mile service territory. SoCalGas has four storage fields: Aliso Canyon, Honor Rancho, La Goleta, and Playa del Rey, as well as a combined storage capacity of approximately 134 billion cubic feet. According to the CEC, natural gas demand in the SoCalGas service area was 5,026 million therms in 2022.[5]

SoCalGas forecasts that the total demand for natural gas will decline at an annual rate of 1.0 percent per year through 2035.[6] The decline in demand is due to reduced gas demand in the major market segment areas of residential, electric generation, commercial, and industrial; aggressive energy efficiency programs; and statewide efforts to minimize greenhouse gas emissions. **Table 4.5-3: Residential and Nonresidential Natural Gas Consumption for Orange County** identifies the residential and nonresidential natural gas demand between 2011 and 2022.

In 2022, natural gas use in Orange County was approximately 351.69 million therms from residential uses and 220.76 therms for non-residential sectors.[7] Between 2011 and 2020, Orange County's residential natural gas demand decreased by 14 percent.

[5] California Energy Commission (CEC). (ND). *Gas Consumption by Southern California Gas*. Retrieved from CEC Website: http://ecdms.energy.ca.gov/gasbyutil.aspx. Accessed November 2023.

[6] California Gas and Electric Utilities (ND). *2022 California Gas Report* https://www.socalgas.com/sites/default/files/Joint_Utility_Biennial_Comprehensive_California_Gas_Report_2022.pdf. Accessed November 2023.

[7] California Energy Commission (CEC). (ND). *Gas Consumption by County*. Retrieved from CEC Website: https://ecdms.energy.ca.gov/gasbycounty.aspx. Accessed November 2023.

Table 4.5-3: Residential and Nonresidential Natural Gas Consumption for Orange County

Year	Million Therms		
	Residential Natural Gas Consumption (million therms)	Nonresidential Natural Gas Consumption (million therms)	Total Natural Gas Consumption
2022	351.69	220.76	572.45
2021	362.16	218.04	580.21
2020	387.08	207.55	595.63
2019	382.14	241.01	623.15
2018	339.03	236.07	575.10
2017	343.53	231.98	575.51
2016	337.83	232.11	569.94
2015	316.92	227.56	544.48
2014	319.18	225.57	544.75
2013	397.97	238.18	636.15
2012	381.53	231.03	612.56
2011	407.68	231.77	639.45

Source: California Energy Commission. (ND). https://ecdms.energy.ca.gov/. Accessed November 2023.

Transportation Energy

Transportation energy demand in California is largely related to vehicular traffic (e.g., passenger vehicles, light duty trucks, semi-trucks, etc.), with most transportation-related energy demand currently met by gasoline and diesel fuel. In 2022, California consumed 15.31 billion gallons of gasoline and 3.68 billion gallons of diesel fuel based on data from California EMission FACtor (EMFAC). In Orange, approximately 1.2 billion gallons of gasoline and 154 million gallons of diesel fuel were consumed in 2022 based on EMFAC.

Gasoline and diesel fuel is supplied to City residents by a widely distributed series of service stations both inside and around the City. Annual automotive fuel consumption in Orange County from 2011 to 2022 is shown in **Table 4.5-4: Annual Automotive Fuel Consumption in Orange County**. As shown in **Table 4.5-4**, the County's gasoline consumption has increased 11 percent since 2011 and diesel consumption increased 42 percent.

Table 4.5-4: Annual Automotive Fuel Consumption in Orange County		
Year	**Gasoline Consumption (million gallons)**	**Diesel Fuel Consumption (million gallons)**
2022	1,247.7	154.1
2021	1,258.6	151.9
2020	1,059.8	126.4
2019	1,220.3	126.2
2018	1,197.6	125.7
2017	1,204.5	128.6
2016	1,201.2	125.0
2015	1,167.4	117.2
2014	1,139.9	114.9
2013	1,118.4	113.1
2012	1,114.7	107.3
2011	1,119.5	108.4
Source: California Air Resources Board. 2022. *EMFAC* https://arb.ca.gov/emfac/ accessed November 2023.		

4.5.4 Thresholds of Significance

The City uses the thresholds of significance specified in *State CEQA Guidelines, Appendix G*. Impacts to energy conservation would be significant if the Project would:

- Result in a potentially significant environmental impact due to the 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.

4.5.5 Methodology

This analysis considers the *State CEQA Guidelines, Appendix G* thresholds, as described above, in determining whether Project implementation would result in the inefficient, wasteful, or unnecessary use of energy. The evaluation was based on a review of regulations and determining their applicability to the Project. The baseline conditions and impact analyses are based on analysis and review of various data available in public records, including local planning documents. Potential energy impacts were evaluated by reviewing the change in land uses that could occur under the Project and assessing the potential to affect the capacities of energy service utilities. The determination that the Project would or would not result in "substantial" adverse effects on energy resources considers the relevant policies and regulations established by local and regional agencies and the Project's compliance with these policies.

As addressed in this Program EIR, the impact analysis is conservative because it accounts for additional housing units as a buffer to address future "no net loss" to preclude the need to identify replacement sites during 6th Cycle implementation. Therefore, this Program EIR conservatively analyzes a total development capacity of 9,914 units including future development capacity of up to 9,649 units on 247 housing sites, 25 units associated with pipeline projects, and 240 accessory dwelling units (ADUs). Further, this EIR analysis does not consider any loss of existing on the ground development which may be displaced to accommodate 9,914 housing units.

4.5.6 Project Impacts and Mitigation

Threshold 4.5-1:	**Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?**

Construction-Related Energy Use

Project construction would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during site clearing, grading, and construction. Fuel energy consumed during construction would be temporary and would not represent a significant demand on energy resources. In addition, some incidental energy conservation would occur during construction through compliance with State requirements which specify that equipment not in use for more than five minutes must be turned off. Project construction equipment would also be required to comply with the latest U.S. EPA and CARB engine emissions standards, which require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Due to increasing transportation costs and fuel prices, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction. There is also growing recognition among developers and retailers that sustainable construction is not prohibitively expensive, and that there is a significant cost-savings potential in green building practices and materials.

Substantial reductions in energy inputs for construction materials can be achieved by selecting building materials composed of recycled materials that require substantially less energy to produce than non-recycled materials. The Project-related incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes and manufactured or processed materials (e.g., lumber and gas) would not substantially increase demand for energy compared to overall local and regional demand for construction materials. It is reasonable to assume that production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest in minimizing the cost of doing business.

Future development throughout the City accommodated through Project implementation would meet the residents' varied housing needs. The majority of future housing development facilitated by the Project would occur on sites that are fully improved. Unlike an individual project for which project-specific construction information is available, it is impractical to quantify construction-related energy consumption from all of the future housing development that would contribute incrementally to construction energy demand throughout the City. Although construction equipment would primarily use energy in the form of fuel consumption, the amount of construction-related fuel cannot be determined at this time due to the lack of project-specific construction information associated with future development on each of the housing sites. Rather, construction energy consumption would be evaluated for specific development projects as future development applications are processed by the City. It is noted that construction fuel use is temporary and would cease upon completion of construction activities. Further, there are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or

State. Therefore, construction fuel consumption associated with future housing development facilitated by the Project would not be any more inefficient, wasteful, or unnecessary than other similar residential developments. A less than significant impact would occur.

General Construction Guidance

During construction, some incidental energy conservation would occur through compliance with State requirements that construction equipment not in use for more than five minutes be turned off. Construction equipment would also be required to comply with the latest U.S. EPA and CARB engine emissions standards. These engines use highly efficient combustion engines to minimize unnecessary fuel consumption. Project-related construction activities would consume energy, primarily in the form of diesel fuel (e.g., mobile construction equipment) and electricity (e.g., power tools).

Any future housing development facilitated by the Project and subject to CalGreen regulations is required to divert 65 percent of waste generated during construction from landfills. Recycling construction and demolition waste not only keeps it from being transported to the landfill, but also reduces the "upstream" energy consumption from the manufacturing of virgin material.

Future construction activities associated with future housing development would also be required to monitor air quality emissions using applicable regulatory guidance such as the South Coast Air Quality Management District CEQA Guidelines. This requirement indirectly relates to construction energy conservation because when air pollutant emissions are reduced as a result of monitoring and the efficient use of equipment and materials, this results in reduced energy consumption. There are no aspects of the Project that would foreseeably result in the inefficient, wasteful, or unnecessary consumption of energy during construction activities of future housing developments.

As discussed above, there are no unusual characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or State. Therefore, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar projects of this nature. Therefore, impacts to energy resources associated with the future developments' construction activities would be less than significant, and no mitigation is required.

Operations

Residential development planned for under the proposed Project would permanently increase the demand for electricity and natural gas primarily for building heating and cooling. However, future housing projects would, at a minimum, comply with the requirements of the CALGreen and the City's Green Building Standards Code. The energy consumption associated with Project operations would occur from building energy (electricity and natural gas) use, water use, and transportation-related fuel use. The methodology for each category is discussed below. Quantifications of operational energy use are provided for the Project. Annual energy use during operations is shown in **Table 4.5-5: Annual Energy Use During Operations**. The estimated energy demand associated with the development planned for under the Project is also compared to the current overall energy demand of the County to provide context for the projected changes in energy demand. It should be noted that the energy use shown in **Table 4.5-5** is associated with the total development capacity and conservatively does not consider any loss of existing on the ground development which may be displaced to accommodate 9,914 housing units.

Table 4.5-5: Annual Energy Use During Operations

Project Source	Annual Operational Energy	Orange County Annual Energy	Percentage Increase Countywide
Electricity Use		**GWh**	
Area[1]	37.00	20,243.72	0.18%
Water[1]	4.71		0.02%
Total Electricity	41.71		0.21%
Natural Gas Use		**Therms**	
Area[1]	1,573,335	580,209,496	0.27%
Diesel Use		**Gallons**	
Mobile[2]	878,222	964,826,395	0.09%
Gasoline Use		**Gallons**	
Mobile[2]	10,087,783	163,882,259	6.15%

Notes:
1 The electricity, natural gas, and water usage are based on project-specific estimates and CalEEMod defaults.
2 Calculated based on the mobile source fuel use based on vehicle miles traveled (VMT) and fleet-average fuel consumption (in gallons per mile) from EMFAC2021 for operational year 2030.

Source: Refer to energy calculations in **Appendix D**.

Petroleum Fuel

The gasoline and diesel fuel associated with on-road vehicular trips is calculated based on total vehicle miles traveled (VMT) calculated for the analyses within **Section 4.2: Air Quality** and **Section 4.7: Greenhouse Gas Emissions** and the average fuel efficiency from the EMFAC model. The total gasoline and diesel fuel associated with on-road trips would total approximately 10,966,005 gallons of fuel per year, respectively (**Table 4.5-5**).

Electricity

The electricity use during Project operations is based on CalEEMod defaults. The proposed Project land uses would use approximately 41.71 GWh of electricity per year (**Table 4.5-5**). Under the standards in the 2022 Title 24 building code, residential buildings would be more energy efficient than before. Future housing development would be as energy efficient as possible under the new standards.

The electricity associated with operational water use is estimated based on the annual water use and the energy intensity factor is the CalEEMod default energy intensity per gallon of water for Orange County. Project area water use is based on the CalEEMod default rates. The Project would use approximately 362.1 million gallons annually of water annually which would require approximately 4.71 GWh per year for conveyance and treatment.

Natural Gas

The methodology used to calculate the natural gas use associated with the Project is based on CalEEMod default rates. The building envelope would use 157.33 million kBTUs, or approximately 1,573,335 therms of natural gas per year (**Table 4.5-5**).

Operational Energy Use Analysis

Operation of the Project would annually use approximately 41.71 GWh of electricity, 1,573,335 therms of natural gas, 10,087,783 gallons of gasoline, and 878,222 gallons of diesel.

Californians used 287,826 GWh of electricity in 2022, of which Orange County used 20,243 GWh. The Project's operational electricity use would represent less than 0.01 percent of electricity used in the State, and 0.21 percent of the energy use in Orange County. The Project's electricity consumption estimated above includes reductions associated with compliance with the 2022 Title 24 building code. Regarding natural gas, Californians used 11,710 million therms of natural gas and 572 million therms of natural gas in Orange County in 2022. Therefore, the Project's operational natural gas use would represent less than 0.01 percent of the natural gas use in the State and 0.27 percent of the natural gas use in the County.

When construction is projected to be completed, Californians are anticipated to use approximately 12 billion gallons of gasoline and approximately 3.39 billion gallons of diesel fuel by 2030. Orange County annual gasoline fuel use in 2030 is anticipated to be 163.8 million gallons and diesel fuel is anticipated to be 964.8 million gallons. Expected Project operational use of gasoline and diesel would represent 0.08 percent of the projected gasoline use and 0.54 percent of the projected diesel use in the State. Project operational use of gasoline and diesel would represent 6.15 percent of gasoline use and 0.09 percent of diesel use in the County.

Based on the California Energy Demand 2022 Baseline Forecast (January 2023),[8] SCE's total energy sales in 2030 will be 102,656 GWh of electricity. As such, the Project-related net annual electricity consumption of 41.71 GWh would represent approximately 0.04 percent of SCE's projected sales in 2030. SCE would review the Project's estimated electricity consumption in order to ensure that the estimated power requirement would be part of the total load growth forecast for their service area and accounted for in the planned growth of the power system. Based on these factors, it is anticipated that SCE's existing and planned electricity capacity and electricity supplies would be sufficient to serve the Project's electricity demand.

Based on the 2022 California Gas Report,[9] the California Energy and Electric Utilities estimates natural gas consumption within SoCalGas' planning area will be approximately 2,440 million cubic feet (cf) per day in 2022.[1] Accordingly, the Project's 1,573,335 therms (157,295,942 cf) of annual natural gas consumption would account for approximately less than 0.01 percent of the forecasted natural gas consumption in the SoCalGas planning area. As such, the Project's consumption of natural gas is expected to fall within SoCalGas' projected consumption and supplies for the area. According to the United States Energy Information Administration, the United States currently has over 80 years of natural gas reserves based on 2018 consumption.[10]

Transportation fuels (gasoline and diesel) are produced from crude oil, which can be domestic or imported from various regions around the world. Based on current proven reserves, current crude oil production would be sufficient to meet 50 years of worldwide consumption.[11] As such, it is expected that existing and planned transportation fuel supplies would be sufficient to serve the Project's demand.

[8] California Energy Commission. (ND) *CED 2022 Baseline Forecast – LSE and BA Tables High Demand Case*. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2022-integrated-energy-policy-report-update-2. Accessed November 2023.

[9] California Gas and Electric Utilities. (2022). *2022 California Gas Report.* https://www.socalgas.com/sites/default/files/Joint_Utility_Biennial_Comprehensive_California_Gas_Report_2022.pdf. Accessed November 2023.

[10] U.S. Energy Information Administration, Frequently Asked Questions, *How Much Natural Gas Does the United States Have, and How Long Will It Last?* https://www.eia.gov/tools/faqs/faq.php?id=58&t=8. Accessed November 2023.

[11] BP Global. (2022). *Statistical Review of World Energy*, 2022. https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf. Accessed November 2023.

None of the Project energy uses exceed one percent of their corresponding County use. Project operations would not substantially affect existing energy or fuel supplies or resources. The Project would comply with applicable energy standards and new capacity would not be required. Impacts would be less than significant.

Energy Efficiency Measures

As discussed above, California's Energy Efficiency Standards for Residential and Non-Residential Buildings create uniform building codes to reduce California's energy use and provide energy efficiency standards for residential and non-residential buildings. These standards are incorporated within the California Building Code and are expected to substantially reduce the growth in electricity and natural gas use. For example, requirements for energy-efficient lighting, heating and cooling systems, and green building materials are expected to save additional electricity and natural gas. These savings are cumulative, doubling as years go by.

Regarding water energy conservation, the Project would incorporate drought-tolerant landscaping throughout portions of the site. Water-efficient irrigation controls would also be used in landscape areas. Comprehensive water conservation strategies would be developed to each respective land use as part of the Project plan development. Buildings would incorporate water-efficient fixtures and appliances, to comply with Title 24.

Renewable Energy Sources

SCE is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase total procurement from eligible renewable energy resources to 50 percent by 2030. SB 100 revised the goal of the program to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045. Renewable energy is generally defined as energy that comes from resources which are naturally replenished within a human timescale such as sunlight, wind, tides, waves, and geothermal heat.

California Building Energy Efficiency Standards (Title 24, part 6) includes prescriptive requirements to install solar PV systems as a part of newly constructed low-rise residential buildings. The 2022 update to Title 24 expands solar photovoltaic and battery storage standards and includes requirements for high-rise multifamily residential as well as non-residential buildings. Therefore, renewable energy features would be incorporated into future development projects. The use of solar would increase future development projects' reliance on renewable energy sources to meet energy demand. The increased use of renewable energy would also reduce reliance on fossil fuels, reduce peak loads, and reduce impacts of relying on remote generation facilities.

The Project would be required to adhere to all federal, State, and local requirements for energy efficiency, including the latest Title 24 standards. In addition, it should be noted that the State has determined that the development of up to 8,845 to approximately 9,000 new dwelling units within the City is essential and necessary to protect the general health and welfare of the residents of the City and the Greater Orange County Area. Therefore, Project implementation would not constrain local or regional energy supplies and would not require the expansion or construction of new electricity generation and/or transmission

facilities. As such, implementation of the proposed Project would not use large amounts of fuel or energy in an unnecessary, wasteful, or inefficient manner. Impacts would be less than significant.

Impact Summary: **Less than Significant Impact.** Buildout of the proposed Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during future housing development construction or operations. Impacts would be less than significant and no mitigation is required.

Threshold 4.5-2	**Would the Project conflict with or obstruct a State or Local plan for renewable energy or energy efficiency?**

As discussed in Threshold 4.5-1, the energy conservation policies and plans relevant to the Project include the California Title 24 energy standards and the 2022 CALGreen building code. The future housing development facilitated by the Project would be required to comply with these existing energy standards. Compliance with State and local energy efficiency standards would ensure that the Project meets all applicable energy conservation policies and regulations. As such, the Project would not conflict with applicable plans for renewable energy or energy efficiency. SCAG's 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal) (RTP/SCS), adopted in September 2020, integrates transportation, land use, and housing to meet GHG reduction targets set by CARB. The document establishes GHG emissions goals for automobiles and light-duty trucks, as well as an overall GHG target for the region consistent with both the target date of AB 32 and the post-2020 GHG reduction goals of SB 375. The Project would not conflict with the stated goals of the RTP/SCS. Potential impacts are considered less than significant without mitigation.

Impact Summary: **Less than Significant Impact.** The proposed Project would not conflict with or obstruct a State or Local plan for renewable energy or energy efficiency. Impacts would be less than significant and no mitigation is required.

4.5.7 Cumulative Impacts

Construction and operations associated with implementation of the Project would result in the use of energy, but not in a wasteful manner. The use of energy would not be substantial in comparison to statewide electricity, natural gas, gasoline, and diesel demand; refer to **Table 4.5-5**. During operations, the project-related annual electricity consumption would represent approximately 0.04 percent of SCE's projected sales in 2030. SCE would review the Project's estimated electricity consumption in order to ensure that the estimated power requirement would be part of the total load growth forecast for their service area and accounted for in the planned growth of the power system. The Project's natural gas consumption would account for approximately 0.01 percent of the forecasted natural gas consumption in the State and the Project would account for approximately less than 0.01 percent of forecasted surplus of natural gas in the SoCalGas planning area. It should be noted that the planning projections of SCE and SoCalGas consider planned development for their service areas and are in and of themselves providing for cumulative growth. Therefore, it is likely that the cumulative growth associated with the related projects is already accounted for in the planning of future supplies to cover projected demand.

Further, transportation fuels (gasoline and diesel) are produced from crude oil, which can be domestic or imported from various regions around the world. Based on current proven reserves, current crude oil

production would be sufficient to meet 50 years of worldwide consumption. As such, it is expected that existing and planned transportation fuel supplies would be sufficient to serve the Project's construction and operational demand. New capacity or supplies of energy resources would not be required. Additionally, the Project would be subject to compliance with all federal, State, and local requirements for energy efficiency.

The Project and new development projects located within the cumulative study area would also be required to comply with all the same applicable federal, State, and local measures aimed at reducing fossil fuel consumption and the conservation of energy. The anticipated Project impacts, in conjunction with cumulative development in the vicinity, would increase urbanization and result in increased energy use. Potential land use impacts are site-specific and require evaluation on a case-by-case basis. As noted above, the Project would not result in significant impacts to State or local plans for renewable energy or energy efficiency. Therefore, the Project and identified cumulative projects are not anticipated to result in a significant cumulative impact. Therefore, potential impacts are considered less than significant.

4.5.8 Mitigation Program

As noted, all future housing development facilitated by the Project would be subject to the City's development review process, which may include review pursuant to CEQA, and would be assessed on a case-by-case basis for potential effects concerning energy use. Future housing development would be subject to compliance with relevant federal, State, and local requirements including requirements set forth in the Newport Beach General Plan and Newport Beach Municipal Code.

General Plan Policies

See **Section 4.5.2: Regulatory Setting** for complete policy text.

Housing Element

- Policy Action 5G

Land Use Element

- Policy LU 6.15

Mitigation Measures

No additional mitigation is required.

4.5.9 Level of Significance After Mitigation

No significant energy impacts have been identified.

4.5.10 References

BP Global. (2022). *Statistical Review of World Energy*, 2022. Retrieved from: https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf. Accessed November 2023.

California Energy Commission. (ND) *CED 2022 Baseline Forecast – LSE and BA Tables High Demand Case*. Retrieved from: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2022-integrated-energy-policy-report-update-2. Accessed November 2023.

California Energy Commission (CEC). (2022). *Electricity Consumption by Southern California Edison*. Retrieved from: https://ecdms.energy.ca.gov/elecbyutil.aspx. Accessed November 2023.

California Energy Commission (CEC). (2022). *Gas Consumption by County*. Retrieved from: https://ecdms.energy.ca.gov/gasbycounty.aspx. Accessed November 2023.

California Gas and Electric Utilities (2022). *2022 California Gas Report* Retrieved from: https://www.socalgas.com/sites/default/files/Joint_Utility_Biennial_Comprehensive_California_Gas_Report_2022.pdf. Accessed November 2023.

California Public Utilities Commission (CPUC). (ND). *Renewable Portfolio Standard (RPS) Program.* Retrieved from: https://www.cpuc.ca.gov/rps/. Accessed November 2023.

City of Newport Beach (2006). *City of Newport Beach General Plan – Land Use Element.* Retrieved from: https://www.newportbeachca.gov/PLN/General_Plan/04_Ch3_LandUse_web.pdf. Accessed November 10, 2023.

City of Newport Beach (2006). *City of Newport Beach General Plan – Natural Resources Element.* Retrieved from: https://www.newportbeachca.gov/PLN/General_Plan/11_Ch10_NaturalResources_web.pdf. Accessed November 10, 2023.

City of Newport Beach (2013). *City of Newport Beach Energy Action Plan.* Retrieved from: https://www.newportbeachca.gov/home/showpublisheddocument/16576/635682493202100000. Accessed November 2023.

City of Newport Beach (2021). *City of Newport Beach Municipal Code – Solar Systems.* Retrieved from: https://www.codepublishing.com/CA/NewportBeach/#!/NewportBeach15/NewportBeach1518.html#15.18. Accessed November 2023.

Southern California Edison (2023). *By the Numbers: Who We Serve*. Retrieved from: https://www.sce.com/about-us/who-we-are. Accessed November 2023.

U.S. Energy Information Administration. *Frequently Asked Questions, How Much Natural Gas Does the United States Have, and How Long Will It Last?* Retrieved from: https://www.eia.gov/tools/faqs/faq.php?id=58&t=8. Accessed November 2023.