IV.E ENERGY

1. INTRODUCTION

This section of the Draft EIR provides a discussion of energy resources and applicable laws and regulations associated with energy, as well as an analysis of the potential effects resulting from implementation of the proposed project. Calculation worksheets used in the analysis are contained in **Appendix IV.E.1: Energy Calculations** of this Draft EIR.

2. ENVIRONMENTAL SETTING

Existing Conditions

Electricity

Electricity is typically a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for use by customers. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

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

According to the California Energy Commission's (CEC), the State of California consumed 277,750 GWh of electricity in 2019, with electricity demand projected to rise to 317,217 GWh in 2030, the furthest year of currently available projections.[1]

The Project Site is within the Southern California Edison (SCE) service area. The SCE service area covers 50,000 square miles and includes 15 counties, which serve approximately 15 million people in central,

1 California Energy Commission (CEC), Final 2020 Integrated Energy Policy Report Update Volume III California Energy Demand Forecast Update, https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2020-integrated-energy-policy-report-update. Accessed April 2021.

coastal, and Southern California.[2] The SCE planning area used approximately 105,162 GWh of electricity in 2019.[3] The SCE estimates that electricity consumption within its planning area will be approximately 125,000 GWh annually by 2027, when the proposed Project would be fully built out.[4]

Furthermore, SCE supplies power to homes and businesses via different plan options, including "Green Rates."[5] The Green Rate gives consumers the opportunity to purchase renewable energy. By participating in the Green Rate, consumers support local solar power, reducing greenhouse gas (GHG) emissions associated with electricity. To support this effort, SCE purchases additional renewable energy to meet the needs of Green Rate participants from solar renewable developers within the SCE service territory. This is a voluntary program available to both residential and nonresidential energy users who receive power generation, metering, and related services from SCE. In 2017, SCE released *The Clean Power and Electrification Pathway* (Pathway) which presents SCE's integrated blueprint to meet the State's goal of 40 percent reduction in GHG emissions from 1990 levels by 2030.[6] Specifically, SCE's Pathway calls for:

- An electric grid supplied by 80 percent carbon-free energy;
- More than 7 million electric vehicles on California roads; and
- Using electricity to power nearly one-third of space and water heaters, in increasingly energy-efficient buildings.

The nearest transmission lines to the Project Site include two north/south 220 kilovolt (kV) lines and one north/south 69 KV line approximately 0.33 miles to the west.[7] No electricity is currently used on the vacant Project Site.

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network and, therefore, resource availability is typically not an issue. Natural gas satisfies almost one-third of the State's total energy requirements and is used in electricity

2 Southern California Edison (SCE), Southern California Edison's Service Area, https://www.sce.com/about-us/who-we-are/leadership/our-service-territory. Accessed April 2021.
3 CEC, California Energy Consumption Database, Electricity Consumption by Planning Area, http://ecdms.energy.ca.gov/elecbyplan.aspx. Accessed April 2021.
4 CEC, Demand Analysis Office, California Energy Demand 2018-2030 Revised Forecast, https://efiling.energy.ca.gov/getdocument.aspx?tn=223244. Accessed April 2021.
5 SCE, Green Rates, https://www.sce.com/residential/rates/standard-residential-rate-plan/green-rates. Accessed April 2021.
6 SCE, The Clean Power and Electrification Pathway, https://www.edison.com/home/our-perspective/clean-power-and-electrification-pathway.html. Accessed April 2021.
7 California Energy Commission, Electric Infrastructure Map, https://cecgis-caenergy.opendata.arcgis.com/app/ad8323410d9b47c1b1a9f751d62fe495. Accessed April 2021.

generation, space heating, cooking, water heating, industrial processes, and as transportation fuel. Natural gas is primarily measured in terms of cubic feet (cf), as well as in terms of British thermal units (Btu) and Therms.[8]

According to the CEC's California Energy Consumption Database, the State of California consumed 13,158 million Therms of natural gas in 2019,[9] with demand projected to rise to 12,800 million Therms in 2030,[10] the furthest year of currently available projections.

Natural gas for the proposed Project area is provided by the City of Long Beach Energy Resources Department (LBER). LBER provides natural gas to approximately 500,000 residents and businesses in Long Beach and Signal Hill and delivers gas through more than 1,800 miles of pipelines.[11] Natural gas for LBER is purchased on the open competitive market. Based on the 2020 California Gas Report, LBER supplied approximately 26.3 millions of cubic feet (MMcf) of natural gas per day in 2020 and is expected to supply 26.3 MMcf of natural gas per day in 2027, when the proposed Project would be fully built out.[12] The Project Site is currently vacant and no natural gas is used.

Petroleum Based Fuel

Crude oil is a mixture of hydrocarbons that exists as a liquid in underground geologic formations and remains a liquid when brought to the surface.[13] Petroleum products are produced from the processing of crude oil and other liquids and include transportation-related fuels such as gasoline and diesel. Petroleum is a worldwide commodity. According to the U.S. Energy Information Administration (EIA), California consumed approximately 681,272,000 barrels (28,613,424,000 gallons, or 42 gallons per barrel) in 2018, the most recent year of publicly available data.[14] The EIA forecasts a national oil supply of 19.9 million barrels per day (mb/d) in 2027, which is the opening year for the Project.[15] This equates to approximately 7,263 million barrels per year (mb/y) or 305,067 million gallons per year (mg/y).[16]

---

8 One Therm is equivalent to 100,000 British thermal units (BTU) or 100 kBTU. A Therm is approximately the energy equivalent of burning 100 cubic feet (1 cf) of natural gas. The conversion of kBTU to cubic feet uses the factor of 1 cf to 1.037 kBTU.

9 CEC, California Energy Consumption Database, Gas Consumption by County, https://ecdms.energy.ca.gov/gasbycounty.aspx. Accessed April 2021.

10 CEC, Final 2019 Integrated Energy Policy Report, https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report. Accessed April 2021.

11 City of Long Beach, Energy Resources, http://www.longbeach.gov/energyresources/. Accessed April 2021.

12 California Public Utilities Commission, 2020 California Gas Report, https://www.socalgas.com/sites/default/files/2020-10/2020_California_Gas_Report_Joint_Utility_Biennial_Comprehensive_Filing.pdf. Accessed April 2021.

13 U.S. Energy Information Administration (EIA), Frequently Asked Questions, https://www.eia.gov/tools/faqs/faq.php?id=40&t=6. Accessed April 2021.

14 U.S. EIA, Independent Statistics & Analysis, Table F16: Total Petroleum Consumption Estimates, 2018, https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US. Accessed April 2021.

15 U.S. EIA, Annual Energy Outlook 2020, Table 11. Petroleum and Other Liquids Supply and Disposition, https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2020&cases=ref2020&sourcekey=0. Accessed April 2021.

16 One oil barrel is equivalent to 42 gallons.

Over the last several decades, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHGs emissions from the transportation sector, and reduce vehicle travel. Incentive programs, such as the CEC's Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP), are helping the State to reduce its dependency on gasoline. The CEC predicts that the demand for gasoline will continue to decline over the upcoming years, and there will be an increase in the use of alternative fuels.[17]

3. REGULATORY SETTING

Federal Setting

Corporate Average Fuel Economy (CAFE) Standards

Established by the U.S. Congress in 1975, the CAFE standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and the United States Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy. When these standards are raised, automakers respond by creating a more fuel-efficient fleet. In 2012, the NHTSA established final passenger car and light truck CAFE standards for model years 2017 through 2021, which the agency projects will require in model year 2021, on average, a combined fleet-wide fuel economy of 40.3 to 41.0 miles per gallons (mpg). In March 2020, the United States Department of Transportation (USDOT) and the USEPA issued the final Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which amends existing CAFE standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establishes new standards covering model years 2021 through 2026.[18]

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type.[19] USEPA and NHTSA have also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through

17 CEC, Final 2019 Integrated Energy Policy Report, https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report. Accessed April 2021.

18 National Highway Traffic Safety Administration (NHTSA), Corporate Average Fuel Economy standards, https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy. Accessed April 2021.

19 United States Environmental Protection Agency (USEPA), Fact Sheet: EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100BOT1.PDF?Dockey=P100BOT1.PDF. Accessed April 2021.

2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type.[20]

State Setting

State Senate Bill 1389

Senate Bill (SB) 1389 (PRC Sections 25300–25323; SB 1389) requires the development of an integrated plan for electricity, natural gas, and transportation fuels. The CEC must adopt and transmit to the Governor and Legislature an Integrated Energy Policy Report every two years. The CEC prepares updates to these assessments and associated policy recommendations in alternate years (PRC Section 25302[d]). Preparation of the Integrated Energy Policy Report involves close collaboration with federal, State, and local agencies and a wide variety of stakeholders in an extensive public process to identify critical energy issues and develop strategies to address those issues. The most recently approved report and update, the 2019 Integrated Energy Policy Report Update, addresses the State's implementation of SB 350, integrated resource planning, distributed energy resources, transportation electrification, electricity system resilience and efficiency, barriers faced by disadvantaged communities, demand response, renewable energy, natural gas supplies, preliminary transportation energy demand forecast, and climate adaptation and resiliency.[21] In March 2021, the CEC released a Scoping Order for the 2021 Integrated Energy Policy Report.[22]

Renewables Portfolio Standard

As amended by SB 350, California's Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 40 percent of total retail sales by 2024, 45 percent of total retail sales by 2027, and 50 percent of total retail sales by 2030. SB 100, signed on September 10, 2018, is the 100 Percent Clean Energy Act of 2018. SB 100 updates the goals of California's RPS and SB 350 to the following: achieve 50 percent renewable resources target by December 31, 2026 and achieve a 60 percent target by December 31, 2030. SB 100 also requires that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045.

---

20 USEPA, Federal Register/Vol. 81, No. 206/Tuesday, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, October 25, 2016, https://www.gpo.gov/fdsys/pkg/FR-2016-10-25/pdf/2016-21203.pdf. Accessed April 2021.

21 CEC, Final 2019 Integrated Energy Policy Report, https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report. Accessed April 2021.

22 CEC, Scoping Order for the 2021 Integrated Energy Policy Report, https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report. Accessed April 2021.

SB 100 requires the CEC, California Public Utilities Commission (CPUC), and California Air Resources Board (CARB) to complete a joint agency report to the Legislature evaluating the 100 percent zero-carbon electricity policy. In consultation with all California balancing authorities and as part of a public process, the three agencies will issue a report to the Legislature by January 1, 2021, and at least every four years afterward. The joint report shall include: (1) a review of the 100 percent zero-carbon policy focused on technologies, forecasts, then-existing transmission, and the maintenance of safety, environmental and public safety protection, affordability, and system and local reliability; (2) an evaluation identifying the potential benefits and impacts on system and local reliability associated with achieving the policy; (3) an evaluation identifying the nature of any anticipated financial costs and benefits to electric, gas, and water utilities, including customer rate impacts and benefits; (4) the barriers to, and benefits of, achieving the policy; and (5) alternative scenarios in which the policy can be achieved and the estimated costs and benefits of each scenario.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings

Part 6 of Title 24 of the CCR, regulates the design of building shells and building components. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The CEC published the 2019 California Building Standards Code (Cal. Code Regs., Title 24) July 1, 2019, with an effective date of January 1, 2020.[23]

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24), commonly referred to as CALGreen, establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. CALGreen is periodically amended; the most recent 2019 standards became effective on January 1, 2020.

The CEC periodically amends and enforces Appliance Efficiency Regulations contained in Title 20 of the CCR. The regulations establish water and energy efficiency standards for both federally regulated appliances and non-federally regulated appliances. The most current Appliance Efficiency Regulations, dated January 2019 cover 23 categories of appliances (e.g., refrigerators; plumbing fixtures; dishwashers; clothes washer and dryers; televisions, etc.) and apply to appliances offered for sale in California.[24]

23 CEC, 2019 Building Energy Efficiency Standards, https://www.energy.ca.gov/title24/2019standards/. Accessed April 2021.
24 CEC, Appliance Efficiency Standards Scheduled to Take Effect in 2019, http://calenergycommission.blogspot.com/2018/12/appliance-efficiency-standards.html. Accessed April 2021.

Transportation Sector Energy Related Regulations

Section IV.G: Greenhouse Gas Emissions of this Draft EIR discusses various statutes that address climate change, which also address energy generation and consumption. As expressed in these statutes, meeting the State's climate change goals requires focused action to quickly transform the State's energy system away from fuels that generate GHGs. The following statutes direct various State agencies to conduct assessments and forecasts that are used to develop recommendations for energy policies and programs that conserve State resources, provide reliable energy, protect the environment, enhance the State's economy, and protect public health and safety.

The State has provided a climate policy portfolio that addresses emissions across sectors including electricity, buildings, transportation, land use and agriculture, and industry. The transportation sector is the largest source of GHG emissions in the State and various State policies call for speeding the transition to zero-emission vehicles (ZEVs), which among other things reduce energy use, including:

- The CARB's Scoping Plan, which describes California's approach for achieving its GHG reduction goals. The plan was developed in 2008 and updated in 2014 and 2017;
- Executive Order B-16-2012 set a goal of reaching 1.5 million ZEVs on California roadways by 2025; and
- Executive Order B-48-18 calls for at least 5 million ZEVs on California roads by 2030 and spurs the installation of 250,000 plug-in electric vehicle chargers, including 10,000 direct fast current chargers, and 200 hydrogen refueling stations by 2025.

Executive Order B-55-18 established a Statewide goal to achieve carbon neutrality by 2045. Although these statutes are broader than the energy sector, reducing GHG emissions from California's energy system, including transportation, is a fundamental part of the effort to reduce reliance on fossil fuels.

Other State regulations that indirectly reduce fuel consumption include:

- AB 1493 (Pavley, 2002), which required CARB to adopt regulations to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks for model years 2009–2016.[25]
- EO S-1-07, as issued by Governor Schwarzenegger, called for a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB by 2020.[26]

25 California Air Resources Board (CARB), Clean Car Standards—Pavley, Assembly Bill 1943, www.arb.ca.gov/cc/ccms/ccms.htm. Accessed April 2021.

26 Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel.

Executive Order S-03-05

Executive Order S-03-05 mandates that California emit 80 percent fewer GHGs in 2050 than it emitted in 1990. Energy efficiency and reduced vehicle miles traveled (VMT) would play important roles in achieving this goal. As previously mentioned, GHG reduction efforts increase energy efficiency which also reduces the consumption of petroleum-based fuels.

California Air Resources Board

In 2012, CARB approved the Advanced Clean Cars (ACC) program, an emissions-control program for passenger vehicles and light-duty trucks for model years 2017–2025, thereby continuing the regulatory framework established under the Pavley standards beyond model year 2016. The program combines the control of smog, soot, and GHG emissions with requirements for greater numbers of zero-emission vehicles. The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the ZEV regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[27] Consistent with the other State-reduction policies geared toward reducing GHG emissions, the efforts to speed up integration of ZEVs and PHEVs would reduce the consumption of petroleum based fuels.

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, CCR Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by this class of vehicles.

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, CCR Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NOx) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023 with compliance resulting in this class of vehicles using petroleum-based fuel in a more efficient manner thereby reducing diesel fuel consumption.

27 CARB, California's Advanced Clean Cars Program, www.arb.ca.gov/msprog/acc/acc.htm. Accessed April 2021.

CARB is responsible for enforcing CCR Title 13 Sections 2449(d)(3) and 2485, which limit idling from both on-road and off-road diesel-powered equipment to no greater than five minutes at any location. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

Sustainable Communities Strategy

SB 375, the Sustainable Communities and Climate Protection Act, coordinates land use planning, regional transportation plans, and funding priorities to reduce GHG emissions from passenger vehicles through better-integrated regional transportation, land use, and housing planning that provides easier access to jobs, services, public transit, and active transportation options. These actions achieve their objectives in part through increased energy efficiency. Specific to energy conservation, electric vehicles, natural gas vehicles, transit/rail; more compact development patterns that reduce vehicle travel also demand less energy per capita. Reducing vehicle travel also reduces energy related to producing and distributing fuels and vehicles as well as the construction and maintenance of roads.

California Environmental Quality Act

In accordance with Appendix F and G of the CEQA Guidelines, and in order to ensure that energy implications are considered in project decisions, EIRs are required to include a discussion of the potential significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (PRC Section 21100(b)(3)). The 2020 update to Appendix G of the CEQA Guidelines now provides that if a project would result in potentially significant environmental effects due to wasteful, inefficient, or unnecessary consumption of energy resources, or conflict with or obstruct a State or local plan for renewable energy or energy efficiency, then an EIR shall be prepared for the project that includes mitigation measures for that energy use. The EIR's analysis should include the project's energy use for all project phases and components, including transportation-related energy, during construction and operation. In addition to building code compliance, other relevant considerations may include, among others, the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project as further described below under Appendix F of the CEQA Guidelines.

Appendix F of the CEQA Guidelines provides a list of energy-related topics that may be discussed in an EIR, where topics are applicable or relevant to the project, including:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed;

- The effects of the project on local and regional energy supplies and on requirements for additional capacity;
- The effects of the project on peak and base period demands for electricity and other forms of energy;
- The degree to which the project complies with existing energy standards;
- The effects of the project on energy resources; and
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Regional and Local Setting

Southern California Association of Governments

SCAG's 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) presents a long-term transportation vision through the year 2040 for the six-county region of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties.[28] The 2016 RTP/SCS includes land use strategies that focus on urban infill growth and walkable, mixed-use communities in existing urbanized and opportunity areas. More mixed-use, walkable, and urban infill development would be expected to accommodate a higher proportion of growth in more energy-efficient housing types like townhomes, apartments, and smaller single-family homes, as well as more compact commercial building types. More compact development patterns that reduce vehicle travel also demand less water per capita and reduce conversion of natural and working lands. Furthermore, the 2016 RTP/SCS includes transportation investments and land use strategies that encourage carpooling, increase transit use, active transportation opportunities, and promote more walkable and mixed-use communities, which would potentially help to reduce vehicle travel, ultimately reducing the consumption of petroleum-based fuels and the energy demands necessary for producing and distributing fuels and vehicles, as well as the construction and maintenance of roads.

SCAG has also released the 2020-2045 RTP/SCS (Connect SoCal), on November 14, 2019 for public input and comment and closed on the comment period on January 24, 2020. On September 3, 2020, SCAG's Regional Council approved and adopted the Connect SoCal plan which, similar to the 2016-2040 RTP/SCS, sets forth goals, policies, and programs intended to reduce GHG emissions, improve active transportation, and promote development near existing transportation networks. The 2020-2045 RTP/SCS focuses on a

28 Southern California Association of Governments (SCAG), 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx. Accessed April 2021.

more prosperous mobile approach through implementing planning strategies that focus on transportation networks.[29]

Local Setting

City of Long Beach General Plan

The Air Quality Element of the City of Long Beach General Plan was adopted in 1996 and sets forth the goals, objectives, and policies that guide the City in the implementation of its air quality improvement programs and strategies. This Element includes the following energy related goals and policies which are applicable to the Project.

Goal 7: Reduce emissions through reduced energy consumption.

Policy 7.1: Energy Conservation. Reduce energy consumption through conservation improvements and requirements.

Action 7.1.4: Encourage the incorporation of energy conservation features in the design of all new construction.

City of Long Beach Municipal Code

Section 21.45.400 of the Long Beach Municipal Code (LBMC) further regulates public and private development to include various standards that promote green buildings. A green building, also known as a sustainable building, is a structure that is designed, built, renovated, operated, or reused in an ecological and resource-efficient manner. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact on the environment. The City of Long Beach recognizes the benefit of green buildings and establishes a green building program.

City of Long Beach Green Building Ordinance

On May 12, 2009, the Long Beach City Council approved Ordinance No. ORD- 09-0013 (Subsection 21.45.400—Green Building Standards for Public and Private Development). The following types of project shall meet the intent of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) program at the Certified level:

- A new residential or mixed use building of 50 dwelling units and 50,000 gross square feet or more.
- A new mixed use, or non-residential building of 50,000 square feet or more of gross floor area;

29 Southern California Association of Governments (SCAG), Connect SoCal: 2020-2045 Regional Transportation Plan/Sustainable Communities Strategies Draft, Chapter 1, https://scag.ca.gov/connect-socal. Accessed April 2021.

- The alteration of an existing residential or mixed use building that results in the addition of 50 dwelling units and 50,000 gross square feet or more;
- The alteration of an existing mixed use, or non-residential building that results in the expansion of 50,000 gross square feet or more; and
- A new construction or substantial rehabilitation project for which the City provides any portion of funding.

4. ENVIRONMENTAL IMPACTS

Thresholds of Significance

To assist in determining whether the proposed Project would have a significant effect on the environment, the City finds the proposed Project may be deemed to have a significant impact related to energy if it would:

Threshold ENE-1: **Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

Threshold ENE-2: **Conflict with or obstruct a State or local plan for renewal energy or energy efficiency?**

5. METHODOLOGY

Construction

Electricity usage associated with the supply and conveyance of water used for dust control during construction was calculated using CalEEMod. Developed by the California Air Pollution Control Officers Association (CAPCOA), CalEEMod is a Statewide land use emissions computer model that estimates construction and operational emissions from a variety of land use projects.[30] This section utilizes the GHG worksheets and CalEEMod output data found in **Appendix IV.B.1** to this Draft EIR. Electricity used to power lighting, electronic equipment, and other construction activities necessitating electrical power would be temporary, limited, and would cease upon the completion of construction. In terms of natural gas, construction activities typically do not involve the consumption of natural gas, and, as such, natural gas consumption associated with construction activities was assumed to be negligible.

Fuel consumption from on-site off-road heavy-duty construction equipment was calculated based on the equipment mix and usage factors provided in the CalEEMod construction output files included in **Appendix**

30 California Air Pollution Control Officers Association, CalEEMod (2017), Accessed May 2020, http://www.caleemod.com.

IV.G.1 of this Draft EIR. The total horsepower was then multiplied by fuel usage estimates per horsepower-hour included in Table A9-3-E of the South Coast Air Quality Management District's (SCAQMD) CEQA Air Quality Handbook. Fuel consumption from construction worker, vendor, and delivery trucks was calculated using the trip rates and distances provided in the CalEEMod construction output files. Total VMT was then calculated for each type of construction-related trip and divided by the corresponding county-specific miles per gallon factor using CARB's EMFAC 2017 model, which provides the total annual VMT and fuel consumed for each vehicle type. Consistent with CalEEMod, construction worker trips were assumed to include 50 percent light duty gasoline automobiles and 50 percent light duty gasoline trucks. Construction vendor and delivery trucks were assumed to be heavy-duty diesel trucks. Refer to **Appendix IV.E.1** of this EIR for detailed calculations.

Operation

The Project's potential energy consumption analyzed the anticipated future demand of the proposed uses. The Project's anticipated electricity and natural gas demands during operation are based in the CalEEMod output data found in Appendix G to this Draft EIR. Potential petroleum impacts are associated with operational vehicle trips. Daily trip generation used in this analysis was based on the air quality worksheets and CalEEMod output data found in **Appendix IV.G.1** to this Draft EIR. Because CalEEMod does not directly estimate fuel consumption, fuel rate and VMT data from CARB's EMFAC 2017 model were used to develop fuel-efficiency factors for gasoline and diesel fuel, in units of miles per gallon. Based on the Project's annual VMT forecast, gasoline and diesel consumption rates were calculated using the County-specific miles per gallon based on the EMFAC 2017 model. Trip rate and trip length data from CalEEMod were used to estimate the total VMT of on-road motor vehicles that would occur from operational uses. The fuel-efficiency factors were applied to the estimated VMT to determine the quantity of gasoline and diesel that would be used annually. The vehicle fleet mix for vehicles anticipated to visit the Project Site was calculated based on the EMFAC 2017 model for the County and was anticipated to be 93 percent gasoline and 7 percent diesel fuel. Supporting calculations are provided in **Appendix IV.E.1** of this Draft EIR. These calculations were used to determine if the proposed Project would cause the wasteful, inefficient and/or unnecessary consumption of energy as required by Appendix F of the CEQA Guidelines

6. PROJECT IMPACTS

Threshold ENE-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

As discussed previously, the proposed Project would consume energy during construction and operational activities. Sources of energy for these activities include electricity usage, natural gas consumption, and

transportation fuels such as diesel and gasoline. The analysis below includes the Project's energy requirements and energy use efficiencies by fuel type for Project construction and operations. For purposes of this analysis, Project maintenance would include activities such as painting, landscaping, and architectural coatings. Energy usage related to Project maintenance activities are included as part of Project operations.

Construction Impacts

During construction, energy would be consumed in the form of electricity associated with the conveyance of water used for dust control, and on a limited basis, powering lights, electronic equipment, or other construction activities necessitating electrical power. As discussed below, construction activities, including the construction of new buildings and facilities, typically do not involve the consumption of natural gas. Construction would also consume energy in the form of petroleum-based fuels associated with the use of off-road construction vehicles and equipment within the Project Site, construction worker travel, haul trips, and delivery trips.

As shown in **Table IV.E-1: Summary of Energy Use During Construction** and discussed below, a total of approximately 5,816 kilowatt-hours (kWh) of electricity, 601,083 gallons of diesel fuel, and 167,306 gallons of gasoline is estimated to be consumed during construction of the proposed Project.

Table IV.E-1
Summary of Energy Use During Construction

Fuel Type		Quantity
Electricity		**5,816 kWh**
Diesel		
Off-Road Construction Equipment[man]		156,812 gallons
On-Road Construction Equipment[b]		444,270 gallons
	Total	**601,083 gallons**
Gasoline		
Off-Road Construction Equipment[a]		0 gallons
On-Road Construction Equipment[b]		167,306 gallons
	Total	**167,306 gallons**

Source: Refer to **Appendix IV.E.1** for detailed calculations.

[a] Off-road construction equipment encompasses construction equipment on the project site (e.g., excavators, cranes, forklifts, etc.).

[b] On-road construction equipment encompasses construction worker trips, haul trips, and delivery trips.

Electricity

During construction, electricity would be consumed to supply and convey water for dust control and, on a limited basis, may be used to power lighting, electronic equipment, and other construction activities necessitating electrical power. Electricity would be supplied to the Project Site by SCE distribution infrastructure and would be obtained from existing substations and electrical lines in and around the Project Site.

As shown in **Table IV.E-1,** a total of approximately 5,816 kWh of electricity is anticipated to be consumed during construction. The electricity demand at any given time would vary throughout the construction period based on the construction activities being performed and would cease upon completion of construction. When not in use, electric equipment would be powered off so as to avoid unnecessary energy consumption. Additionally, Title 24 requirements would apply to construction lighting if duration were to exceed 120 days, which includes limits on the wattage allowed per specified area for energy conservation. Due to the relatively short duration of the construction process, and the fact that the extent of electricity consumption is inherent to construction projects of this size and nature, electricity consumption impacts would not be considered excessive or substantial with respect to regional supplies. Therefore, construction of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of electricity and impacts would be less than significant.

Natural Gas

Construction activities, including the construction of new buildings and facilities, typically do not involve the consumption of natural gas. Accordingly, natural gas would likely not be needed to support construction activities; thus, there would be little to no demand generated by construction. Therefore, construction of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of natural gas and impacts would be less than significant.

Transportation Energy

Project construction would consume energy in the form of petroleum-based fuels associated with use of off-road construction vehicles and equipment on the Project Site, construction worker travel to and from the Project Site, and delivery and haul truck trips (e.g., for deliveries of construction supplies and materials).

The petroleum-based fuel use summary provided in **Table IV.E-1** represents the amount of transportation energy that could potentially be consumed during construction based on a conservative set of assumptions. As shown, on- and off-road vehicles would consume an estimated 768,388 gallons of petroleum (167,306 gallons of gasoline and 601,083 gallons of diesel fuel) throughout the proposed

Project's construction period. For purposes of comparison, the EIA forecasts a national oil supply of 20.39 million barrels (mb) per day in 2022, which is the first year of construction for the proposed Project.[31] This equates to approximately 7,472 mb per year or 312,579 million gallons (mg) per year. Construction of the proposed Project would account for less than 0.01 percent of the projected annual oil supply in 2022.

Due to the relatively short duration of the construction process, and the fact that the extent of fuel consumption is inherent to construction projects of this size and nature, fuel consumption impacts would not be considered excessive or substantial with respect to regional fuel supplies. The energy demands during construction would be typical of construction projects of this size and would not necessitate additional energy facilities or distribution infrastructure. The proposed Project will also comply with Sections 2485 in Title 13 of the California Code of Regulations, which requires the idling of all diesel-fueled, commercial vehicles be limited to five minutes at any location. As a result, the proposed Project would not result in inefficient, or unnecessary consumption of transportation resources during construction. Accordingly, transportation resource demands during construction would be less than significant.

Operation

During operation of the Project, energy would be consumed for multiple purposes associated with the proposed residential uses, including, but not limited to, heating/ventilating/air conditioning (HVAC); refrigeration; lighting; and the use of electronics, equipment, and machinery. Energy would also be consumed during operation of the proposed Project in the form of water usage, solid waste disposal, and vehicle trips, among others. As shown in **Table IV.E-2: Summary of Annual Energy Use During Operation**, the Project's energy demand would be approximately 1,521,158 kWh of electricity per year and 4,298,930 kBTU per year or 11,358 cf (0.01 MMcf) per day.[32] The proposed uses would consume 33,296 gallons of diesel fuel per year and 195,813 gallons of gasoline per year. These calculations incorporate regulatory requirements established by the California Building Code related to water and energy conservation, water quality, and green building practices including the City's requirement for LEED certification.

Electricity

As shown in **Table IV.E-2**, buildout of the proposed Project would result in a projected increase in the on-site demand for electricity, totaling 1,521,158 kWh (1.5 GWh) per year. SCE estimates that electricity consumption within its planning area will be approximately 125,000 GWh annually by 2027, when the

31 EIA, Annual Energy Outlook 2020: Table 11. Petroleum and Other Liquids Supply and Disposition, https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2020&cases=ref2020&sourcekey=0, Accessed April 2021.

32 The conversion of kBTU to cubic feet uses the factor of 1 cf to 1.037 kBTU. Based on 365 days per year.

proposed Project would be fully built out.[33] The proposed Project would account for less than 0.01 percent of the 2027 annual consumption in SCE's planning area.[34]

Table IV.E-2
Summary of Annual Energy Use During Operation

Source	Units	Quantity
Electricity		
Condo/Townhouses	kWh/yr	597,175
Single-Family Residences	kWh/yr	569,247
Parking Areas	kWh/yr	60,069
Water	kWh/yr	294,866
Electricity Total	**kWh/yr**	**1,521,158**
Natural Gas		
Condo/Townhouses	kBTU/yr	2,412,520
Single-Family Residences	kBTU/yr	1,886,410
Natural Gas Total	**kBTU/yr**	**4,298,930**
Mobile		
Diesel	Gallons/yr	33,296
Gasoline	Gallons/yr	195,813
Fuel Total	**Gallons/yr**	**229,110**

Source: Refer to **Appendix IV.E.1** for detailed calculations.
Notes: kWh/yr = kilowatt-hours per year; kBtu/yr = thousand British Thermal Units per year.
Electricity and Natural Gas for the proposed Project is total yearly operational usage. Mobile gasoline and diesel usage were calculated using CalEEMod output data

In addition to complying with Title 24 and CALGreen, the proposed Project would provide means for indirect energy savings, such as permitting individual solar panels to be applied to the proposed residential uses. This would be installed in compliance with Title 24 Section 110.10, which includes mandatory regulations for solar-ready buildings and would not preclude the use of alternate energy sources. Moreover, consistent with Section 21.45.400 of the LBMC, the proposed Project would be required to meet the LEED® program at the certified level and comply with the City's green building program. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact to

33 CEC, Demand Analysis Office, California Energy Demand 2018-2030 Revised Forecast, https://efiling.energy.ca.gov/getdocument.aspx?tn=223244. Accessed April 2021.
34 1.5 GWh/ 125,000 GWh = 0.000012

the environment. Therefore, operation of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of electricity and impacts would be less than significant.

Natural Gas

As shown in **Table IV.E-2**, with compliance with Title 24 standards and applicable CALGreen requirements, buildout of the proposed Project is projected to generate an on-site demand for natural gas totaling 4,298,930 kBTU per year or 11,358 cf (0.01 MMcf) per day.[35] Based on the 2020 California Gas Report, LBER is expected to supply 26.3 MMcf of natural gas per day in 2027, when the proposed Project would be fully built out.[36] The proposed Project would account for approximately 0.03 percent of the 2027 daily forecasted consumption in LBER's planning area. As previously mentioned, LEED certification is required within the City and measures such as submetering would be implemented to detect any sudden fluctuations of natural gas use. New appliances using natural gas would be efficient and reduce unnecessary and wasteful consumption of natural gas during operation. Therefore, operation of the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of natural gas and impacts would be less than significant.

Transportation Energy

As shown in **Table IV.E-2** above, buildout of the proposed Project is projected to generate a net demand of 229,110 gallons of transportation fuel. For purposes of comparison, the EIA forecasts a national oil supply of 19.9 mb/d in 2027, which is the opening year for the Project.[37] This equates to approximately 7,263 mb/y or 305,067 mg/y.[38] Operation of the proposed Project would account for less than 0.01 percent of the projected annual oil supply in 2027.

During operation, traffic associated with the proposed Project would result in the consumption of petroleum-based fuels due to vehicular travel to and from the Project Site. Vehicular use during operation would be limited to those necessary to ensure the function of the residential and open space developments, including trash pickup, commutes by employees of the development, commutes by regular upkeep and repair crews, and commutes by USPS personnel. Activities such as trash pickup would be consolidated to limit the number of necessary trips made by local waste collectors. During the operational lifetime of the Project, newer vehicles sold on the market would be required to comply with CAFE fuel economy standards expected to incrementally take effect. This would effectively reduce transportation

35 The conversion of kBTU to cubic feet uses the factor of 1 cf to 1.037 kBTU. Based on 365 days per year.

36 California Public Utilities Commission, 2020 California Gas Report, https://www.socalgas.com/sites/default/files/2020-10/2020_California_Gas_Report_Joint_Utility_Biennial_Comprehensive_Filing.pdf. Accessed April 2021.

37 U.S. EIA, Annual Energy Outlook 2020, Table 11. Petroleum and Other Liquids Supply and Disposition, https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2020&cases=ref2020&sourcekey=0. Accessed April 2021.

38 One oil barrel is equivalent to 42 gallons.

energy use by commuters and maintenance crew at the development. Accordingly, fuel consumption is anticipated to decrease each year through implementation of regulation that require higher energy efficiencies and higher efficient and alternative fueled vehicles. As the operation activities would be limited to those necessary for the function and upkeep for the development, and more efficient vehicles are expected in future years of Project operation, the proposed Project would not result in wasteful, inefficient, or unnecessary consumption of transportation energy and impacts would be less than significant.

Summary of Energy Resource Consumption

CEQA Guidelines Appendix F recommends a quantification of the Project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the Project's life cycle, including construction, operation, maintenance, and/or removal. The proposed Project's energy requirements were calculated based on land use inputs from CalEEMod for electricity and natural gas usage. The calculations also considered energy efficiency measures, such as Title 24, 2016 CALGreen, and vehicle fuel economy standards. As energy consumption during Project construction activities would be relatively negligible, the proposed Project is not anticipated to affect regional energy consumption in years during the construction period. In sum, energy consumption during Project construction and operations in the context of regional supplies would be relatively negligible and energy requirements are within SCE's and LBER's forecasted supply delivery capacity. Additionally, electricity demand during construction and operation of the proposed Project would have a negligible effect on the overall capacity of SCE's power grid base peak demand conditions and LBER's forecasted demand. Moreover, the proposed Project's gas and diesel fuel demand related to vehicle travel and on-site operations would account for a small percentage of the forecasted gas and diesel consumption.

Furthermore, these forecasts of energy consumption are likely to overstate actual Project consumption as it is anticipated that the recent trend of stricter regulatory requirements with regard to energy efficiency that have occurred over the last twenty years would continue through buildout of the proposed Project, such as more energy efficient Title 24 requirements, as well as energy efficiency requirements related to achieving the SB 350 goals to double energy efficiency standards by the year 2030, that would occur throughout the construction and operation of the proposed Project. As electricity and natural gas usage at the Project Site would comply with Title 24 standards as well as CalGreen and the City's green building program requirements, proposed Project construction and operations would comply with applicable energy standards with regards to electricity and natural gas usage.

With regards to transportation fuels, trucks and equipment used during proposed construction activities would comply with CARB's anti-idling regulations, as well as the In-Use Off-Road Diesel-Fueled Fleets

regulation. Although these regulations are focused on reducing criteria pollutant emissions, compliance with these regulations would also result in a more efficient use of construction-related fuel consumption. In addition, during Project operations, vehicles traveling to and from the Project Site would comply with CAFE fuel economy standards as well as with Pavley standards and LCFS, which are designed to reduce vehicle GHG emissions but would also result in fuel savings in addition to CAFE standards. Therefore, Project construction and operational activities would comply with existing energy standards with regards to transportation fuel consumption.

In terms of transportation-related energy usage, the proposed Project would be consistent with the energy efficiency policies emphasized by the 2016-2040 RTP/SCS and the 2020-2045 RTP/SCS. Specifically, the proposed Project would provide housing in close proximity to a major transit stop at Wardlow Road and Pacific Place; the LA Metro Blue Line (or A Line) Wardlow station. Moreover, LBT and LA Metro provide public transit services in the vicinity of the Project Site. The proposed Project would include 5 acres of public open space that would connect to the pedestrian paths within the residential complex, the adjacent public sidewalks, and the existing Baker Street Park trails. Additionally, the proposed Project would include bike parking consistent with the City's Bicycle Master Plan. These features would serve to reduce VMT and associated transportation fuel consumption. During the operational lifetime of the Project, newer vehicles sold on the market would be required to comply with CAFE fuel economy standards expected to incrementally take effect. Accordingly, fuel consumption is anticipated to decrease each year through implementation of regulations that require higher energy efficiencies and higher efficient and alternative fueled vehicles.

As discussed throughout this Draft EIR, the proposed Project is consistent with the City's General Plan and also in proximity to a major transit stop. As a result, these locational attributes create opportunities for reductions in both the number and length of vehicle trips. Further, the proposed Project's pedestrian and bicycle improvements would reduce vehicle trips and vehicle miles traveled. These reductions in vehicle trips and vehicle miles traveled would also reduce the proposed Project's gas and diesel fuel consumption. As such, the proposed Project would encourage the use of efficient transportation alternatives.

As demonstrated in the analysis of the discussed above, the proposed Project would not cause wasteful, inefficient, and unnecessary consumption of energy during construction or operation.

Threshold ENE-2: Conflict with or obstruct a State or local plan for renewal energy or energy efficiency?

The proposed Project would comply with applicable regulatory requirements for the design of new buildings, including the provisions set forth in the CALGreen Code and California's Building Energy

Efficiency Standards, which have been incorporated into the City's green building program. Based on the below, the proposed Project would be consistent with adopted energy conservation plans and impacts would be less than significant.

Consistency with General Plan Air Quality Element

The Air Quality Element of the City of Long Beach General Plan was adopted in 1996 and sets forth the goals, objectives, and policies that guide the City in the implementation of its air quality improvement programs and strategies. This Element includes the following energy related goals and policies which are applicable to the Project.

Goal 7: Reduce emissions through reduced energy consumption.

Policy 7.1: Energy Conservation. Reduce energy consumption through conservation improvements and requirements.

Action 7.1.4: Encourage the incorporation of energy conservation features in the design of all new construction.

The proposed Project would be required to comply with the most recent Title 24 standards and the CalGreen Code. In addition to complying with Title 24 and CALGreen, the proposed Project would provide means for indirect energy savings, such as permitting individual solar panels to be applied to the proposed residential uses. This would be installed in compliance with Title 24 Section 110.10, which includes mandatory regulations for solar-ready buildings and would not preclude the use of alternate energy sources. Moreover, consistent with Section 21.45.400 of the LBMC, the proposed Project would be required to meet the LEED® program at the certified level and comply with the City's green building program. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact to the environment.

The Project Site is located within 0.5-mile of the major transit stop at Wardlow Road and Pacific Place; the LA Metro Blue Line (or A Line) Wardlow station. Moreover, LBT and LA Metro provide public transit services in the vicinity of the Project Site. The proposed Project would include 5 acres of public open space that would connect to the pedestrian paths within the residential complex, the adjacent public sidewalks, and the existing Baker Street Park trails. Additionally, the proposed Project would include bike parking consistent with the City's Bicycle Master Plan. The location of the proposed Project encourages a variety of transportation options which would reduce VMTs and transportation-related fuel. As such, the

proposed Project would not conflict with the energy goals and policies in the General Plan's Air Quality Element.

Consistency with SCAG's 2016-2040 RTP/SCS and 2020-2045 RTP/SCS

As discussed in the Project's Initial Study (see **Appendix I.1**) the proposed Project is expected to result in an increase of approximately 624 residents. According to the growth estimates from SCAG's 2016–2040 RTP/SCS, the City had an estimated population of 466,300 people in 2012 and is projected to have a population of 484,500 in 2040.[39] The addition of 624 people generated by the proposed Project would be approximately 3 percent of the SCAG's 2016–2040 population increase forecast for the City. Such levels of growth are consistent with the population forecasts for the subregion as adopted by SCAG. The proposed Project is also consistent with the types, intensity and patterns of land use envisioned for this region.

Additionally, the proposed Project would be consistent with SCAG's 2016-2040 SCS/RTP and 2020-2045 SCS/RTP goals, objectives, and policies which directly and indirectly relate to energy conservation, such as encouraging energy efficiency where possible and encouraging land use and growth patterns that facilitate transit and active transportation, respectively. In terms of transportation-related energy conservation, the proposed Project would be consistent with the energy efficiency policies emphasized by both the 2016-2040 RTP/SCS and 2020-2045 RTP/SCS. The proposed Project includes the development of residential uses in an area already served by transit. Additionally, the proposed Project would include bike parking consistent with the City's Bicycle Master Plan. The location of the proposed Project encourages a variety of transportation options which would reduce VMTs and transportation-related fuel. During the operational lifetime of the proposed Project, newer vehicles sold on the market would be required to comply with CAFE fuel economy standards expected to incrementally take effect. As such, the proposed Project would not conflict with the energy goals and policies in SCAG's 2016-2040 SCS/RTP and 2020-2045 SCS/RTP.

7. CUMULATIVE IMPACTS

Electricity

Buildout of the proposed Project, related projects, and additional forecasted growth in SCE's service area would cumulatively increase the demand for electricity supplies and infrastructure capacity. As discussed previously, a total of approximately 5,816 kWh of electricity is anticipated to be consumed during construction of the proposed Project. Due to the relatively short duration of the construction process, and the fact that the extent of electricity consumption is inherent to construction projects of this size and

39 SCAG, Demographics and Growth Forecast, https://scag.ca.gov/sites/main/files/file-attachments/f2016rtpscs_demographicsgrowthforecast.pdf?1606073557. Accessed April 2021.

nature, electricity consumption impacts would not be considered excessive or substantial with respect to regional supplies. Moreover, SCE estimates that electricity consumption within its planning area will be approximately 125,000 GWh annually by 2027, when the proposed Project would be fully built out.[40] The proposed Project would account for less than 0.01 percent of the 2027 annual consumption in SCE's planning area.[41]

As previously discussed, the Project is consistent with the population forecasts for the subregion as adopted by SCAG which has been utilized in future planning documents for the SCE service area. Additionally, Project operational activities would be within the demand forecast for the SCE service area. Although development of the proposed Project would result in the use of electricity resources during construction and operation, which could limit future availability, the use of such resources would be on a relatively small scale when compared to regional consumption, and would be reduced through compliance with the latest CALGreen code requirements. Furthermore, as with the proposed Project, other future development projects would be expected to incorporate energy conservation features, comply with applicable regulations including CALGreen and State energy standards under Title 24, and incorporate energy design features, as necessary during construction and operation. Therefore, the proposed Project's contribution to cumulative impacts related to wasteful, inefficient, and unnecessary use of electricity would not be cumulatively considerable and, thus, cumulative construction and operation-related electricity impacts would be less than significant.

Natural Gas

Buildout of the proposed Project, related projects, and additional forecasted growth in SoCalGas service area would cumulatively increase the demand for natural gas supplies and infrastructure capacity. Based on the 2020 California Gas Report, LBER is expected to supply 26.3 MMcf of natural gas per day in 2027, when the Project would be fully built out.[42] The proposed Project would account for approximately 0.03 percent of the 2027 daily forecasted consumption in LBER's planning area. Natural gas would likely not be needed to support construction activities.

Although development of the proposed Project would result in the use of natural gas resources, which could limit future availability, the use of such resources would be on a relatively small scale, would be reduced by measures rendering the proposed Project more energy efficient, consistent with growth expectations for the LBER service area. Furthermore, future development projects would be expected to

40 CEC, Demand Analysis Office, California Energy Demand 2018-2030 Revised Forecast, https://efiling.energy.ca.gov/getdocument.aspx?tn=223244. Accessed April 2021.

41 1.5 GWh/ 125,000 GWh = 0.000012

42 California Public Utilities Commission, 2020 California Gas Report, https://www.socalgas.com/sites/default/files/2020-10/2020_California_Gas_Report_Joint_Utility_Biennial_Comprehensive_Filing.pdf. Accessed April 2021.

incorporate energy conservation features, comply with applicable regulations including CALGreen and State energy standards under Title 24, and incorporate mitigation measures, as necessary. Therefore, the proposed Project's contribution to cumulative impacts related to wasteful, inefficient, and unnecessary use of natural gas would not be cumulatively considerable; thus, cumulative construction and operation-related natural gas consumption impacts would be less than significant.

Petroleum-Based Fuels

Buildout of the proposed Project, related projects, and additional forecasted growth would cumulatively increase the demand for transportation-related fuel in the State and region. The EIA forecasts a national oil supply of 19.9 mb/d in 2027, which is the opening year for the proposed Project.[43] This equates to approximately 7,263 mb/y or 305,067 mg/y.[44] Operation of the proposed Project would account for less than 0.01 percent of the projected annual oil supply in 2027.

During the operational lifetime of the proposed Project and related projects, newer vehicles sold on the market would be required to comply with CAFE fuel economy standards expected to incrementally take effect. This would effectively reduce transportation energy use by commuters and maintenance crew at the development. Accordingly, fuel consumption is anticipated to decrease each year through implementation of regulation that require higher energy efficiencies and higher efficient and alternative fueled vehicles. Therefore, the proposed Project's contribution to cumulative impacts related to wasteful, inefficient, and unnecessary use of transportation-related fuel would not be cumulatively considerable; thus, cumulative construction and operation-related transportation fuel consumption impacts would be less than significant.

The proposed Project's contribution to cumulative impacts related to energy infrastructure (i.e., electricity and natural gas) would not be cumulatively considerable related to the surrounding energy infrastructure during Project operations. As such, the proposed Project's cumulative energy impacts are concluded to be less than significant.

Consistency Analysis

the proposed Project would be consistent with the population forecasts for the subregion as adopted by SCAG. The proposed Project would be required to comply with the most recent Title 24 standards and the CalGreen Code. In addition to complying with Title 24 and CALGreen, the proposed Project would provide means for indirect energy savings, such as permitting individual solar panels to be applied to the proposed residential uses. This would be installed in compliance with Title 24 Section 110.10, which includes

43 U.S. EIA, Annual Energy Outlook 2020, Table 11. Petroleum and Other Liquids Supply and Disposition, https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2020&cases=ref2020&sourcekey=0. Accessed April 2021.

44 One oil barrel is equivalent to 42 gallons.

mandatory regulations for solar-ready buildings and would not preclude the use of alternate energy sources. Moreover, consistent with Section 21.45.400 of the LBMC, the proposed Project would be required to meet the LEED® program at the certified level and comply with the City's green building program. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact to the environment. Furthermore, future development projects would be expected to incorporate energy conservation features, comply with applicable regulations including CALGreen and State energy standards under Title 24, and incorporate mitigation measures, as necessary, to demonstrate consistency with State or local plans for energy efficiency. Since the proposed Project is consistent with these plans and policies, its contribution to cumulative impacts related to conflicts with or obstruction of a State or local plan for renewal energy or energy efficiency, would be less than significant.

8. MITIGATION MEASURES

Impacts related to energy resources are less than significant and no mitigation measures are required.

9. LEVEL OF SIGNIFICANCE AFTER MITIGATION

No mitigation measures are required; impacts related to energy resources would remain less than significant.