
4.5 ENERGY

This section discusses the existing setting regarding energy usage and the Project's potential impacts related to energy usage.

4.5.1 SUMMARY OF PREVIOUS ENVIRONMENTAL DOCUMENTATION

MND for the Pacific Place Project

The Energy analysis in the MND for the Prior Project determined that implementation of the Prior Project would have less than significant impacts related to energy. The MND determined that the Prior Project's construction would not result in inefficient, wasteful, or unnecessary fuel consumption. In addition, the Prior Project's operation would not result in wasteful, inefficient, or unnecessary energy consumption since project design, construction, and operation would comply with California Building Energy Efficiency Standards, CALGreen code, and the City of Long Beach Climate Action and Adoption Plan (CAAP). As a result, the impacts were determined to be less than significant.

The analysis contained in the MND indicated the Prior Project would be required to comply with Chapter 21.64 of the City's Municipal Code, which implements transportation demand and trip reduction measures. Compliance with City and State requirements would result in consistency with State and local plans related to energy conservation and energy efficiency. Therefore, the impacts were determined to be less than significant.

MND Mitigation Measures

No mitigation measures were adopted as part of the MND.

4.5.2 ENVIRONMENTAL SETTING

The following discussion details the existing conditions at the time the development application was first filed and the City initiated preparation of the MND. Section 2.0, Introduction, further details the Project's baseline.

B. Existing Conditions

Electric Power

Southern California Edison (SCE) provides electricity to the City including the Project Site. SCE's service area spans much of southern California from Orange and Riverside counties on the south to Santa Barbara County on the west to Mono County on the north (SCE 2019). Total electricity consumption in SCE's service area was 106,080 gigawatt-hours (GWh) in 2015 and is forecasted to increase to 120,780 GWh in 2028 for the mid-demand scenario (CEC 2017); one GWh is equivalent to one million kilowatt-hours.

Sources of electricity sold by SCE in 2022 were:

- 33.2 percent renewable (solar, wind, and geothermal)
- 3.4 percent large hydroelectric
- 24.7 percent natural gas
- 8.3 percent nuclear
- 30.3 percent unspecified sources – that is, not traceable to specific sources (SCE 2022).

Natural Gas

The Long Beach Gas and Oil Department (LBGO) provides natural gas to the City. Today, LBGO serves approximately 500,000 customers (155,000 accounts) in the cities of Long Beach and Signal Hill in addition to portions of Los Alamitos, Bellflower, Compton, and Los Angeles County.

Gasoline

Fuel consumption data (gasoline) for the Los Angeles region was obtained from CARB's EMFAC database. An average of 10,242,652 gallons of gasoline is consumed per day by various classes of onroad vehicles: light duty automobiles, motorcycles, medium duty vehicles, etc. The amount of gasoline consumed in 2023 totaled 3,824,838,699 gallons, or an average of 10,479,010 gallons of gasoline per day (CARB 2021).

Diesel

Fuel consumption data (diesel) for the Los Angeles region was obtained from CARB's EMFAC database. An average of 1,626,001 gallons of diesel is consumed per day by various classes of onroad vehicles: light duty automobiles, medium duty vehicles, heavy duty vehicles, busses, etc. The amount of diesel consumed in 2023 totaled 587,320,531 gallons, or an average of 1,609,097 gallons of diesel per day (CARB 2021).

C. Regulatory Framework

Federal

Energy Independence and Security Act of 2007

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

State

CEQA

California Public Resources Code Section 21100(b)(3) and Appendix F to the State CEQA Guidelines require a discussion of potential energy impacts of proposed projects.

Appendix F states:

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

- (1) Decreasing overall per capita energy consumption,
- (2) Decreasing reliance on fossil fuels such as coal, natural gas, and oil, and
- (3) Increasing reliance on renewable energy sources.

Appendix F of the State CEQA Guidelines also states that “potentially significant energy implications of a project shall be considered in an EIR to the extent relevant and applicable to the project. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances specific items may not apply or additional items may be needed. Where items listed below are applicable or relevant to the project, they should be considered in the EIR:

- B. Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.
- C. Environmental Impacts may include: 1. 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 maybe discussed. 2. The effects of the project on local and regional energy supplies and on requirements for additional capacity. 3. The effects of the project on peak and base period demands for electricity and other forms of energy. 4. The degree to which the project complies with existing energy standards. 5. The effects of the project on energy resources. The project’s projected transportation energy use requirements and its overall use of efficient transportation alternatives.
- D. Mitigation Measures may include: 1. Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed. 2. The potential of siting, orientation, and design to minimize energy consumption, including transportation energy, increase water conservation and reduce solid waste. 3. The potential for reducing peak energy demand. 4. Alternate fuels (particularly renewable ones) or energy systems. 5. Energy conservation which could result from recycling efforts.
- E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.
- F. Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.
- G. Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.
- H. Short-Term Gains versus Long-Term Impacts can be compared by calculating the project’s energy costs over the project’s lifetime.
- I. Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates utility companies and ensures the provision of safe, reliable utility service and infrastructure related to electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. CPUC General Order 112E, which is based on the Federal Department of Transportation Guidelines contained in Part 192 of the Code of Federal Regulations, specifies a variety of design, construction, inspection, and notification requirements. The CPUC conducts annual audits of pipeline operations to ensure compliance with these safety standards. In addition, SCGC has a safety program which has reduced the risk of gas distribution fires by improving welds on the

larger diameter (24- to 30-inch) pipelines and by replacing old distribution pipes with flexible plastic pipes.

Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) was established in 2002 under Senate Bill (SB) 1078 and was amended in 2006 and 2011. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase the use of eligible renewable energy resources to 33 percent of total procurement by 2020. The CPUC is required to provide quarterly progress reports regarding the State's progress toward RPS goals.

SB 350, signed October 7, 2015, is the Clean Energy and Pollution Reduction Act of 2015. SB 350 implements some of the goals of Executive Order (EO) B-30-15. Based on California Legislative Information 2015, the objectives of SB 350 are:

1. To increase from 33 percent to 50 percent, the procurement of California's electricity from renewable sources; and
2. To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

The text of SB 350 sets a December 31, 2030 target for 50 percent of electricity to be generated from renewable sources. The RPS requires the public utilities within California to achieve 100 percent electricity generation from renewable energy sources by 2045.

California Energy Commission

In 1974, the California Energy Commission (CEC) was created to be the State's principal energy planning organization and to meet the energy challenges facing the State in response to the 1973 oil embargo. The CEC is charged with seven basic responsibilities when designing State energy policy:

- Advancing State Energy Policy;
- Achieving Energy Efficiency;
- Certifying Thermal Power Plants;
- Investing in Energy Innovation;
- Transforming Transportation;
- Developing Renewable Energy; and
- Preparing for Energy Emergencies.

State Alternative Fuels Plan

Assembly Bill (AB) 118 requires the CEC to prepare a plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan was prepared by the CEC with the California Air Resources Board (CARB) and in consultation with other federal, State, and local agencies to reduce petroleum consumption, to increase use of alternative fuels (e.g., ethanol, natural gas, liquefied petroleum gas, electricity, and hydrogen), to reduce greenhouse gas (GHG) emissions, and to increase in-state production of biofuels. The State Alternative Fuels Plan recommends a strategy that combines private capital investment, financial incentives, and advanced technology that will increase the use of alternative fuels, result in significant improvements in the energy

efficiency of vehicles, and reduce trips and vehicle miles traveled through changes in travel habits and land management policies.

Appliance Efficiency Regulations

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

Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The CEC adopted the 2008 changes to the Building Energy Efficiency Standards in order to (1) provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy; and (2) respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its GHGs to 1990 levels by 2020. Title 24, Part 6 of the California Building Energy Efficiency Standards (known as the 2022 California Energy Code or "Title 24") went into effect on January 1, 2023 and improved upon the 2019 standards for new construction, additions, and alterations of residential and nonresidential buildings (CEC 2022). California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The Project would be subject to the latest future energy standards as they are adopted and go into effect.

California Green Building Standards Code

The California Building Standard Commission's (CBSC's) mission is to produce sensible and usable state building standards and administrative regulations that implement or enforce those standards. The 2022 California Green Building Standards Code (CCR, Title 24, Part 11), also known as the "CALGreen Code", contains mandatory requirements for new residential and non-residential buildings (including buildings for retail, office, public schools, and hospitals) throughout California (CBSC 2022b). The 2022 CALGreen Code went into effect on January 1, 2023 (CBSC 2022b). The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. The CALGreen Code has established regulations to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction. The CALGreen Code contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The CALGreen Code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The CALGreen Code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency (CBSC 2022b).

Local

City of Long Beach

General Plan

The Long Beach General Plan is a policy document that establishes the goals, policies, and directions the City will take to achieve the vision of the community and guide the future development of the City.

Land Use Element

The Land Use Element firmly commits Long Beach to realizing its vision through the following bold moves:

- Target Growth and Mobility.
- Capitalize on Our Regional Strategic Location and Strengths.
- Build Up Local Businesses and Educational Institutions.
- Become a Smarter City.
- Provide Clean, Renewable Energy.
- Prioritize Green and Healthy Living Approaches.
- Address and Adapt to Climate Change.
- Celebrate and Support Our Diversity.

The City relies heavily on coal, oil, and natural gas to fuel our homes, businesses, and institutions. Fossil fuels are nonrenewable; they draw on dwindling, finite resources that can have expensive and environmentally damaging effects. In contrast, many types of renewable energy resources—such as wind, solar and wave energy—will not run out. Solar energy is the cleanest, most abundant renewable energy source available. Wave power is an exciting emerging long-term energy source that is captured from the surface motion of waves on our beaches. Long Beach has ample supplies of both of these. (Long Beach 2019a).

The City has already taken significant green and sustainable approaches to improving the health of residents, businesses, neighborhoods, and the natural environment. The City continues to make efforts to: conserve and rely on renewable energy sources; facilitate urban agriculture and local farmers markets; counter the “urban heat island effect” by greening Long Beach’s urban environment; improve alternative transportation modes such as biking, walking and transit; encourage buildings to be more energy efficient (and lead by example); move new development closer to transit infrastructure; protect the riparian, coastal and wetland environments throughout the City; conserve water; and reduce waste and storm water pollutants (Long Beach 2019a). The Land Use Element identifies how Long Beach will continue to promote practices that create a greener, more sustainable environment. The following policies apply to the Project:

- LU Policy 1-6: Require that new building construction incorporate solar panels, vegetated surface, high albedo surface and/or similar roof structures to reduce net energy usage and reduce the heat island effect.
- LU Policy 11-2: Provide for a wide variety of creative, affordable, sustainable land use solutions to help resolve air, soil and water pollution, energy consumption and resource depletion issues.

Municipal Code – Title 18: Long Beach Building Standards Code, Chapter 18.46 – Energy Code, Section 18.46.010

The City has adopted and incorporates by reference as though set forth in full in the City's Municipal Code the 2022 Edition of the California Energy Code. A copy of the California Energy Code, printed as code in book form, shall be on file in the office of the City Clerk (Long Beach 2019b).

Municipal Code – Title 21: Zoning, Chapter 21.64 – Transportation Demand and Trip Reduction Measures

The California State Legislature has found that the lack of an integrated transportation system and the increase in the number of vehicles are causing traffic congestion that each day results in hundreds of thousands of hours lost in traffic, tons of pollutants released into the air and millions of dollars of added costs to the motoring public. The State Legislature has, therefore, adopted legislation requiring the preparation and implementation of a Congestion Management Program (CMP) by County Transportation Commissions or other public agencies of every County that includes an urbanized area. The Los Angeles County Metropolitan Transportation Authority (MTA) is responsible for the preparation of the CMP for Los Angeles County (County). The CMP must contain a trip reduction and travel demand management element that promotes alternative transportation methods, such as carpools, vanpools, transit, bicycles, walking and park-and-ride lots, improvement in the balance between jobs and housing, and other strategies, including flexible work hours, telecommuting and parking management programs. The County and every City within the County is required by State law to adopt and implement a Transportation Demand Management ("TDM") ordinance as an important element of the CMP to improve both congestion and air quality. This Chapter of the City's Municipal Code is intended to comply with the CMP's requirements for a TDM ordinance. Implementation of TDM measures would result in a reduction in vehicle trips, which would in turn result in a reduction in fuel consumption and demand for fuel as individuals opt to utilize alternative modes of transportation.

Nothing herein is intended, nor shall it be construed, to limit or otherwise preclude employers from offering or providing additional inducements to use alternatives to single-occupant vehicles to their employees necessary to meet Regulation XV requirements.

Long Beach Climate Action Plan

The Long Beach Climate Action Plan (LB CAP), also known as the Climate Action and Adaptation Plan (CAAP), was approved by the City Council on August 16, 2022. The LB CAP has been included as a mitigation measure in the General Plan Land Use Element update, and the LB CAP is a tool that may be used as the basis for future assessments of consistency with this plan in lieu of a project specific GHG CEQA analysis for individual projects (Long Beach 2022). A project-specific environmental document that relies on this plan for its GHG impacts analysis would identify specific reduction measures applicable to the project that are consistent with the LB CAP; it would also describe how the project incorporates those measures. If the measures are not otherwise binding and enforceable, they must be incorporated as mitigation measures or project conditions of approval, or as some other mechanism to ensure implementation. As discussed in Section 4.7, Greenhouse Gas Emissions, the Project would be consistent with the City's CAP.

4.5.3 PROJECT IMPACTS

A. Thresholds of Significance

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

Threshold 4.5b: *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

B. Methodology

For this analysis, energy demand and consumption were quantified for both construction and operation to provide an understanding of the magnitude of the Project's energy demand. In addition, this analysis focuses on the Project's efficiency through application of various regulatory requirements, project design features, and mitigation measures intended to increase efficiency and avoid wasteful, inefficient, or unnecessary energy consumption. As discussed above under Regulatory Framework, Appendix F of the CEQA Guidelines identifies energy-related discussion and analyses that may be included in an EIR, as applicable. Based on information available regarding the Project and the region, the following analysis includes the following:

1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, and maintenance.
2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
3. The degree to which the project complies with existing energy standards.
4. The effects of the project on energy resources. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Construction

Development of the Project would involve the consumption of gasoline and diesel fuel from off-road construction equipment and on-road vehicle sources such as vendor trucks, haul trucks, and worker trips. Fuel use for diesel and gasoline are provided for the construction phase for off-road equipment, worker commutes, haul trips, and vendor trips. Fuel consumption was estimated based on anticipated construction durations, as well as equipment quantities and types. Construction energy consumption was estimated using a proprietary energy consumption model utilizing a combination of the California Emissions Estimator Model (CalEEMod), the Off-Road Diesel Analysis (OffRoad) inventory tool, and CARB's Emission Factors (EMFAC) database. Construction equipment assumptions were based on data provided by the Applicant and CalEEMod for construction equipment activities, which are included in Appendix C-3, while fuel consumption was derived from OffRoad for off-road vehicles and EMFAC for on-road vehicles.

Operations

The operations phase would result in energy consumption from vehicle trips associated with the Project as well as electrical consumption for heating needs. Operational phase energy consumption was estimated using CalEEMod for vehicle trips, trip lengths, and vehicle types. Fuel consumption for each of these vehicle types was obtained using 2021 EMFAC data published by CARB. This data was then utilized to estimate operational fuel consumption for the Project. The CalEEMod model calculated electricity and natural gas consumption based on energy data

specific to Project land uses; specifically, commercial and parking land uses. However, note that no natural gas is proposed as part of the Project.

C. Standard Requirements

The following standard requirements are applicable to the Project.

SR ENE-1: Energy efficiency inspections. Inspections shall be made to determine compliance with the California Energy Code adopted in Chapter 18.46 and shall include, but not be limited to, inspection for: envelope insulation R- and U-values, fenestration U-value, duct system R-value, and HVAC and water-heating equipment efficiency. (Municipal Code 18.07.050).

SR ENE-2: Transportation demand and trip reduction measures.

A. Applicability:

Prior to approval of any development project, the applicant shall make provision for, as a minimum, all of the following applicable transportation demand management and trip reduction measures.

B. Development Standards:

1. Nonresidential development of twenty-five thousand (25,000) square feet or more shall provide the following to the satisfaction of the City:
 - a. A bulletin board, display case, or kiosk displaying transportation information located where the greatest number of employees are likely to see it. Information in the area shall include, but is not limited to the following:
 - i. Current maps, routes and schedules for public transit routes serving the site;
 - ii. Telephone numbers for referrals on transportation information including numbers for the regional ridesharing agency and local transit operators;
 - iii. Ridesharing promotional material supplied by commuter-oriented organizations;
 - iv. Bicycle route and facility information, including regional/local bicycle maps and bicycle safety information; and
 - v. A listing of facilities available for carpoolers, vanpoolers, bicyclists, transit riders and pedestrians at the site.
2. Nonresidential development of fifty thousand (50,000) square feet or more shall comply with Subsection B.1 of this Section and shall provide all of the following measures to the satisfaction of the City:
 - a. Not less than ten percent (10%) of employee parking area shall be located as close as is practical to the employee entrance(s) and shall be reserved for use by potential carpool/vanpool vehicles, without displacing handicapped and customer parking needs. This preferential carpool/vanpool parking area shall be identified on the site plan upon application for building permit, to the satisfaction of the City. A statement

that preferential carpool/vanpool spaces for employees are available and a description of the method for obtaining such spaces must be included on the required Transportation Information Board. Spaces will be signed/striped as demand warrants; provided, that at all times at least one (1) space for projects of fifty thousand (50,000) square feet to one hundred thousand (100,000) square feet and two (2) spaces for projects over one hundred thousand (100,000) square feet will be signed/striped for carpool/vanpool vehicles.

- b. Preferential parking spaces reserved for vanpools must be accessible to vanpool vehicles. When located within a parking structure, a minimum vertical interior clearance of seven feet (7') two inches (2") shall be provided for those spaces and accessways to be used by such vehicles. Adequate turning radii and parking space dimensions shall also be included in vanpool parking areas.
 - c. Bicycle racks or other secure bicycle parking shall be provided to accommodate four (4) bicycles per the first fifty thousand (50,000) square feet of nonresidential development and one (1) bicycle per each additional fifty thousand (50,000) square feet of nonresidential development. Calculations which result in a fraction of 0.5 or higher shall be rounded up to the nearest whole number. A bicycle parking facility may also be a fully enclosed space or locker accessible only to the owner or operator of the bicycle, which protects the bike from inclement weather. Specific facilities and location (e.g., provision of racks, lockers, or locked room) shall be to the satisfaction of the City.
3. Nonresidential development of one hundred thousand (100,000) square feet or more shall comply with Subsections B.1 and 2 of this Section, and shall provide all of the following measures to the satisfaction of the City:
- a. A safe and convenient zone in which vanpool and carpool vehicles may deliver or board their passengers:
 - b. Sidewalks or other designated pathways following direct and safe routes from the external pedestrian circulation system to each building in the development:
 - c. If determined necessary by the City to mitigate the project impact, bus stop improvements must be provided. The City will consult with the local bus service providers in determining appropriate improvements. When locating bus stops and/or planning building entrances, entrances must be designed to provide safe and efficient access to nearby transit stations/stops:
 - d. Safe and convenient access from the external circulation system to bicycle parking facilities on-site.

SR ENE-3: At least 65 percent of non-hazardous construction and demolition debris shall be recycled or salvaged for reuse in accordance with CALGreen Section 5.408 and City of Long Beach Municipal Code Chapter 18.67, *Construction and Demolition Recycling Program*.(Municipal Code 18.67).

SR ENE-4: Vehicles over 10,000 pounds are prohibited from idling more than five minutes. Reductions in idling time would minimize the amount of wasteful fuel consumption (Section 2485 of Chapter 10 – Mobile Source Operational Controls, Article 1 –

Motor Vehicles, Division 3 - Air Resources Board, Title 13 of the California Code of Regulations).

D. Impact Analysis

Threshold 4.5a *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

Project operations would result in energy consumption related to transportation. Specifically, Project construction would require the use of construction equipment for excavation, building, and paving activities; all off-road construction equipment is assumed to use diesel fuel. Project construction may require the use of electricity to power lighting for security purposes or evening construction. In addition, any hand tools used during the building construction phase would be electric powered, likely through batteries. Nevertheless, electricity consumption associated with Project construction (lighting and power tools) would be nominal and temporary, ending upon completion of construction. Natural gas is not anticipated to be consumed during Project construction as there would be no need for heating or cooking activities on site. Construction also includes the vehicles of construction workers and vendors traveling to and from the Project Site. Off-road construction equipment use was calculated from the equipment data (mix, hours per day, horsepower, load factor, and days per phase) provided in the CalEEMod construction output files included in Appendix C-3. The total horsepower hours for the Project was then multiplied by fuel usage estimates per hours of construction activities included in the Off-Road Model.

Fuel consumption from construction worker, vendor, and delivery/haul trucks was calculated using the trip rates and distances provided in the CalEEMod construction output files. Total vehicle miles traveled (VMT) was then calculated for each type of construction-related trip and divided by the corresponding miles per gallon factor using CARB's EMISSIONS FACTOR (EMFAC) 2021 model. EMFAC provides the total annual VMT, and fuel consumed for each vehicle type. Construction vendor and delivery/haul trucks were assumed to be heavy-duty diesel trucks. As shown in Table 4.5-1, Energy Use During Construction, a total of 26,034 gallons of gasoline and 60,164 gallons of diesel fuel are estimated to be consumed during Project construction.

**TABLE 4.5-1
ENERGY USE DURING CONSTRUCTION**

Source	Gasoline (gallons)	Diesel (gallons)
Off-road Construction Equipment	0	47,347
Worker commute	20,755	51
Vendors	5,266	54
On-road haul	13	12,711
Totals	26,034	60,164
2023 Los Angeles Regional Fuel Consumption	3,824,838,699	587,320,531
Percentage of Project Fuel Consumption Compared to 2023 Regional Fuel Consumption	<1%	<1%
Sources: based on data from CalEEMod, Off-Road, and EMFAC2021. Energy data can be found in Appendix F.		

At least 65 percent of non-hazardous construction and demolition debris would be recycled or salvaged for reuse in accordance with CALGreen Section 5.408 and City of Long Beach Municipal Code Chapter 18.67, *Construction and Demolition Recycling Program*.

Fuel energy consumed during construction would be temporary in nature and would not occur after completion of construction activities. It would also not represent a significant demand on energy resources. As shown in Table 4.5-1, fuel consumption during Project construction would represent less than one percent of the total regional 2023 gasoline and diesel fuel consumption for the Los Angeles area. Additionally, MM AIR-1 requires the use of Tier 4 engines; Tier 4 diesel engines use less fuel than comparable Tier 3 engines. Furthermore, 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 other parts of the State. Therefore, the proposed construction activities would not result in inefficient, wasteful, or unnecessary fuel consumption.

Operation

Project operations would result in energy consumption related to electricity, water, solid waste, and transportation. Potential energy impacts of the Project are evaluated with emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. The regulations, plans, and policies adopted for the purpose of maximizing energy efficiency that are directly applicable to the Project include (1) California's Title 24 Energy Efficiency Standards for Residential and Nonresidential Buildings, (2) the CALGreen Code, and (3) the City of Long Beach CAAP.

Development of the Project Site would comply with the 2022 Building Energy Efficiency Standards, the 2022 CALGreen code, and the City of Long Beach CAAP. Self-storage units would be unoccupied by people and would have energy efficient lights and lighting controls. Thus, the proposed self-storage use would be energy efficient by its nature. Operational energy use by the proposed self-storage facility and car wash are specified below in Table 4.5-2, Transportation Energy. These energy estimates are based on the 2016 California Energy Efficiency Standards; two updated versions of the California Energy Efficiency Standards have been adopted since the 2016 standards. Among other things, these more recent standards have improved upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. As such, the energy estimated utilizing the 2016 Energy Efficiency Standards would be considered conservative as standards have become more stringent. and are therefore considered conservative.

Transportation energy use would be from daily vehicle trips associated with the Project. Electricity and natural gas consumption estimates were calculated by the CalEEMod model.

Transportation-related energy consumption of gasoline and diesel fuel was calculated based on the quantity of vehicles, average travel distance, vehicle class and fuel efficiency of each vehicle class as provided by the EMFAC model. Based on data obtained from CalEEMod (refer to Appendix C-3), the Project would generate 1.32 million annual VMT. The gasoline and diesel consumption rates were calculated using estimated miles per gallon factors based on data from CARB's Emissions Factors (EMFAC 2021) model that provides average vehicle emissions rates for the SoCAB in California. It is estimated that Project-generated traffic would use 3,541 gallons of diesel fuel per year and 38,926 gallons of gasoline per year (see Table 4.5-2). Transportation fuels consumption would steadily decline with increases to the Corporate Average Fuel Efficiency Standards as well as the phase-out of older, more fuel consumptive vehicles.

**TABLE 4.5-2
TRANSPORTATION ENERGY
(GALLONS/YEAR)**

Source	Gasoline Fuel	Diesel Fuel
Project	38,926	3,541
Sources: CalEEMod, EMFAC 2021		

The State of California consumed 13,629,998,406 gallons of gasoline in 2022 (CDTFA 2023). Project-anticipated gasoline consumption represents 0.0003% of the consumption of the State.

The Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The current applicable standards are the 2022 Standards, effective January 1, 2023. The 2022 California Green Building Standards Code (CCR, Title 24, Part 11), also known as the CALGreen Code, contains mandatory requirements and voluntary measures for new residential and nonresidential buildings (including buildings for hotel, retail, office, public schools, and hospitals) throughout California (CBSC 2022a). The Project's individual development projects would be subject to the version of the applicable energy standards in effect at the time of such development but it should be noted that energy efficiency standards historically get more stringent in each successive update, with the aim of further reducing energy demand from new buildings.

The development of the CALGreen Code is intended to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the following construction practices: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental quality (CBSC 2022b). The CALGreen Code was adopted to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. The City's Municipal Code adopts the mandatory provisions of the CALGreen Code by reference for all buildings and structures. The Project would promote building energy efficiency through compliance with energy efficiency standards (Title 24 and CALGreen). Development of the Project Site would include electric vehicle (EV) charging stations and EV ready parking stalls, consistent with CalGreen requirements, and 15 bike parking spaces. The Project is also required to comply with Chapter 21.64 of the City's Municipal Code which governs transportation demand and trip reduction measures. This Ordinance requires nonresidential development to implement measures that encourages and provides alternatives to single-occupancy vehicle transportation options.

As shown in Table 4.5-3, Energy from Utilities, the Project would not be supplied with natural gas lines due to the lack of heating needs for a self-storage facility and car wash. Electricity consumed is estimated to be 110,400 kilowatts per year (kWh/yr). In 2022, Los Angeles County consumed approximately 68,484,956,280 kWh of electricity; as such, the Project's electrical demand would represent less than 1% of the County's overall electrical demand (CEC 2024). The Project would follow the 2022 Title 24 standards, which would result in less electricity than presented in Table 4.5-3, Energy from Utilities.

The Project would involve development of buildings that comply with the latest energy efficiency standards adopted by the State of California over the entire development period, implement practices that result in reductions in VMT and associated fuel use, and develop pedestrian-friendly infrastructure. This quantification conservatively assumes that all EV chargers would be fully

utilized throughout the day, even though it is highly likely that they would only be utilized intermittently throughout the day as charging would halt once guests' vehicles are fully charged.

**TABLE 4.5-3
ENERGY FROM UTILITIES**

Source	Natural Gas (kBTU/yr)	Electricity (kWh/yr)
Project	0	110,400
Sources: CalEEMod 2023, CEC 2024		

Operation of facilities proposed on the Project Site would not result in wasteful, inefficient, or unnecessary energy consumption. Project design, construction, and operation would comply with California Building Energy Efficiency Standards and CALGreen code. There are no unusual characteristics of the existing Project Site or the Project that would cause greater energy consumption than a comparable project elsewhere in the State. Impacts would thus be less than significant, and no mitigation is required.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Impacts would be less than significant and therefore no mitigation is required.

Impact Comparison Summary: The Project would result in a less than significant impact. The Project would result in similar impacts when compared with the impact analysis in the MND, which identified less than significant impacts pursuant to this threshold.

Threshold 4.5b *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The Project would be required to comply with the State of California's Title 24 Building Standards. As discussed previously, the latest building standards incorporate the California Energy Commission's building energy efficiency standards which would reduce energy consumption compared to the existing Title 24 Building Standards. Additionally, as demonstrated in Section 4.10, Land Use, and Section 4.7, Greenhouse Gas, the Project would comply with the relevant goals within the General Plan's Land Use Element and the City's CAP, as outlined in section 4.7, Greenhouse Gas Emissions.

The Project would achieve the LB CAP goals of achieving a reduction of electricity use through compliance with the 2022 Building Energy Efficiency Standards and 2022 CALGreen during Project construction. The Building Energy Efficiency Standards and CALGreen are each updated on three-year cycles. Each triennial edition of the Building Energy Efficiency Standards improves on the energy efficiency of the previous edition. The goal of these standards is to reduce wasteful, uneconomical, or unnecessary uses of energy within the state. Project development would comply with the latest State of California energy efficiency standards related to building energy use and the provision of electric vehicle charging stations. Compliance with City and State requirements would result in consistency with State and local plans related to energy conservation and energy efficiency. Impacts would thus be less than significant. No mitigation is required.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Impacts would be less than significant and therefore no mitigation is required.

Impact Comparison Summary: The Project would result in a less than significant impact. The Project would result in similar impacts when compared with the impact analysis in the MND, which identified less than significant impacts pursuant to this threshold.

4.5.4 CUMULATIVE IMPACTS

Electrical power would be provided by SCE on demand, consistent with CPUC requirements. The federal and State governments have enacted legislation to improve energy efficiency in vehicles, equipment, and appliances; to reduce vehicle miles traveled; and to develop alternative fuels or energy sources. Utility companies are also increasing their renewable energy sources to meet the RPS mandates. California's renewable energy commitments also support a recent increasing trend in the purchase of electric and hydrogen fueled vehicles.

On-site energy use would be reduced through compliance with Title 24 Building Standards (as adopted by the City in LBMC Section 18.40.010, Adoption of Building Standards Codes) and other energy conservation programs and policies. Other projects in the City would also comply with the same regulations.

Transportation energy use would decrease throughout the life of the Project. Transportation fuels are anticipated to transition from gasoline and diesel to electricity with Governor Newsom's Executive Order N-79-20 which bans the sale of new gasoline fueled vehicles by the year 2035. Zero Emission Vehicles represent 17.70 percent of light-duty automobiles registered in California in the first through third quarter of 2022 (California Energy Commission 2022). Electric vehicles (EV) are more efficient than gasoline and diesel fueled vehicles. "EVs convert over 77 percent of the electrical energy from the grid to power at the wheels. Conventional gasoline vehicles only convert about 12–30 percent of the energy stored in gasoline to power at the wheels." (USDOE 2022). Continued electrification of transportation would result in a reduction in fossil fuel use (diesel and gasoline) and an integration of electricity generation progressively fueled by carbon neutral renewable sources. As such, it is anticipated that cumulative transportation energy usage occurring in the near future and at Project buildout would continue to be progressively more efficient and less reliant on fossil fuels.

As older appliances, equipment, and vehicles are replaced with newer energy efficient ones, total energy use is expected to decrease over time. All future proposed projects would be subject to separate impact analyses and would be subject to mitigation to reduce potential impacts, as appropriate. Thus, energy use from the Project and cumulative projects would not represent a substantial demand for energy and would not contribute to a cumulative impact related to inefficient, wasteful, or unnecessary energy use. In addition, because the Project would comply with the latest State of California energy efficiency standards and would provide local employment opportunities which would decrease VMT and transportation fuel use, the Project would not conflict with or obstruct a State or the City of Long Beach plan or policy for renewable energy or energy efficiency.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No impact would occur and therefore no mitigation is required.

4.5.5 REFERENCES

- California Air Pollution Control Officers Association (CAPCOA). 2022. *California Emission Estimator Model (CalEEMod)TM*, Developed in Collaboration with SCAQMD and other California Air Districts. Sacramento, CA: CAPCOA.
- California Air Resources Board (CARB). 2021. *Emission Factor Model (EMFAC 2021)*. Web database: <https://arb.ca.gov/emfac/>.
- California Department of General Services, Building Standards Commission (CBSC). 2022a. *2022 California Building Standards Code*. Sacramento, CA: CBSC. <https://www.dgs.ca.gov/BSC/Codes#@ViewBag.JumpTo>.
- . 2022b. *2022 California Green Building Standards Code (CALGreen)*. Sacramento, CA: CBSC. <https://codes.iccsafe.org/content/CAGBC2022P1>
- California Department of Tax and Fee Administration (CDTFA). 2023. *Motor Vehicle Fuel – Net Taxable Gasoline Gallons*. Sacramento, CA: CDTFA. <https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.cdtfa.ca.gov%2Ftaxes-and-fees%2FMVF-10-Year-Report.xlsx&wdOrigin=BROWSELINK>.
- California Energy Commission. 2024 (July 15 access date). *Electricity Consumption by County*. Web database: <https://www.ecdms.energy.ca.gov/elecbycounty.aspx>.
- . 2022. *2022 Energy Efficiency Building Standards*. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards_
- . 2017. CALIFORNIA Energy Demand Updated Forecast, 2017-2027. <https://www.energy.ca.gov/publications/2017/california-energy-demand-updated-forecast-2017-2027>
- California Legislative Information. 2015. *SB-350 Clean Energy and Pollution Reduction Act of 2015*. Sacramento, CA: California Legislative Information. https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB350.
- . 2007. *AB-118 Alternative fuels and vehicle technologies: funding programs*. (AB 118, Statutes of 2007). http://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=200720080AB118&showamends=false.
- Long Beach, City of. 2022 (adopted August). *Long Beach Climate Action Plan*. Long Beach, CA: Community Development Department. https://www.longbeach.gov/globalassets/lbcd/media-library/documents/planning/lb-cap/adopted-lb-cap_-aug-2022.
- . 2019a (December). *City of Long Beach General Plan – Land Use Element*. Prepared by City of Long Beach Development Services with Assistance from MIG and Cityworks Design. Long Beach, CA: Community Development Department. <https://www.longbeach.gov/globalassets/lbcd/media-library/documents/planning/advance/lueude/land-use-element-final-adopted-december-2019>.

———. 2019b (adopted November 19). *City of Long Beach Municipal Code, Title 18 – Long Beach Building Standards Code, Chapter 18.46 – Energy Code, Section 18.46.010 – Adoption of California Energy Code*. Long Beach, CA: the City. https://library.municode.com/ca/long_beach/codes/municipal_code?nodeId=TIT18LOBE_BUSTCO_CH18.46ENCO_18.46.010ADCAENCO.

Psomas. 2024a (May). Air Quality and Greenhouse Gas Emissions Report, Pacific Place Project. Pasadena, CA: Psomas. (Appendix C-1).

———. 2024a (March). Air Quality and Greenhouse Gas Emissions Calculations, Pacific Place Project. Pasadena, CA: Psomas. (Appendix C-3).

Southern California Edison (SCE). 2022. *2022 Power Content Label*. https://www.sce.com/sites/default/files/customfiles/PDF_Files/SCE_2022_Power_Content_Label_B%26W.pdf.

———. 2019 (updated April 25). *Southern California Edison's Service Areas*. https://newsroom.edison.com/internal_redirect/cms.ipressroom.com.s3.amazonaws.com/166/files/20193/SCE%20Service%20Area%20Fact%20Sheet_Ver2_04252019.pdf.