

APPENDIX G

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Lake Elsinore General Plan Update

Energy and Greenhouse Gas Analysis Report

January 2026

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Attachment A: Energy Consumption Estimates

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	Full Phrase or Description
AB	Assembly Bill
ACC	Advanced Clean Cars
BAU	Business As Usual
BEES	Building Energy Efficiency Standards (BEES)
Btu	British Thermal Unit
CalEEMod	California Emissions Estimator Model
Cal-EPA	California Environmental Protection Agency
CalGreen Code	California Green Building Standards Code
CAAP	Climate Action and Adaptation Plan
CARB	California Air Resources Board
CAFE	Corporate Average Fuel Economy
CAT	Climate Action Team
CCS	Carbon Capture and Sequestration
CBSC	California Building Standards Commission
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH ₄	Methane
CI	Carbon Intensity
CNRA	California Natural Resources Agency
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DU	Dwelling Unit
EISA	Energy Independency and Security Act
EO	Executive Order
EV	Electric Vehicle
FAR	Floor to Area Ratio
g	Grams
GHG	Greenhouse Gas(es)
GWh	Gigawatt-hours
GWP	Global Warming Potential
HFC	Hydrofluorocarbon
HHDT	Heavy Heavy-Duty Trucks

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	Full Phrase or Description
Hp-hr	Horsepower-hour
HQTA	High Quality Transit Area
HVAC	Heating Ventilation and Air Conditioning
I	Interstate
IID	Imperial Irrigation District
IPCC	Intergovernmental Panel on Climate Change
kBTU	Thousand British Thermal Units
kW	Kilowatt
kWh	Kilowatt-hours
LCFS	Low Carbon Fuel Standard
LDA	Light Duty Auto
LDT1 / LDT2	Light Duty Trucks
LED	Light emitting diode
LEV	Low-Emissions Vehicle
LHDT	Light Heavy-Duty Truck
MHDT	Medium Heavy-Duty Truck
MMBTU	Million British Thermal Units
MPO	Metropolitan Planning Organization
MT	Metric Ton
MTCO _{2e}	Metric Ton of Carbon Dioxide Equivalent
MUN	Mixed Use Neighborhood
MU-SP	Mixed Use Specific Plan
MW	Megawatt
MWh	Megawatt-hours
MY	Model Year
NHTSA	National Highway Safety Administration
N ₂ O	Nitrous Oxide
NMA	Neighborhood Mobility Area
NWL	Natural and Working Lands
NZE	Near Zero Emissions
PFC	Perfluorocarbon
PGA	Priority Growth Area
PV	Photovoltaic

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	Full Phrase or Description
ppm	Parts Per Million
PRC	Public Resources Code
PSI	Pounds Per Square Inch
PV	Photovoltaic
Report	Energy and Greenhouse Gas Analysis Report
RFS	Renewable Fuel Standards
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
ROW	Right-of-way
SAFE	Safer Affordable Fuel-Efficient Vehicles Rule
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF ₆	Sulfur Hexafluoride
SoCalGas	Southern California Gas Company
SOI	Sphere of Influence
SSAB	Salton Sea Air Basin
TDM	Transportation Demand Management
TIA	Traffic Impact Analysis
TMA	Transportation Management Agency
TMO	Transportation Management Organization
TPA	Transit Priority Area
U.S.	United States
U.S. EIA	United State Energy Information Administration
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
ZEV	Zero Emission Vehicle
ZNE	Zero Net Energy

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EXECUTIVE SUMMARY

This Energy and Greenhouse Gas Impact Analysis Report (Report) evaluates and documents the potential energy and greenhouse gas (GHG) impacts associated with implementation of the proposed Lake Elsinore General Plan Update (proposed GPU) that would guide land use and development decisions for the City of Lake Elsinore, southwestern region of Riverside County, California. The methodologies and assumptions used in the preparation of this chapter were based on the analysis and forecasts in the Climate Action and Adaptation Plan (CAAP) prepared by Ascent (Ascent 2025). If approved, the proposed GPU would support the sustainable development of both residential and non-residential land uses.

This Report is consistent with the guidance and recommendations contained in the South Coast Air Quality Management District's (SCAQMD) California Environmental Quality Act (CEQA) Air Quality Handbook, as amended and supplemented, and is intended to assist the CEQA Lead Agency (city of Lake Elsinore) with its review of potential Project-related energy and GHG impacts in compliance with the State CEQA Statutes and Guidelines, particularly in respect to the energy and GHG issues identified in Appendix G of the State CEQA Guidelines.

S.1 PROPOSED PROJECT DESCRIPTION

The City of Lake Elsinore and its adjacent unincorporated area encompass 115 square miles in the southwestern portion of Riverside County, California. The City surrounds Lake Elsinore, a natural freshwater lake about 3,000 acres in size. The City is located east and west of the I-15 Freeway and north and south of the Ortega Highway (SR-74). The Planning Area encompasses all properties within the incorporated City limits, as well as unincorporated properties within the City's sphere of influence. Like many cities in the Inland Empire, large portions of Lake Elsinore are undeveloped, where approximately 20 percent of land is vacant. The remainder of the Planning area includes park/open space, residential, commercial, industrial, and agricultural/rural land uses.

The General Plan Update (GPU) serves as the guide for the City's future growth and development and allows for increased residential and non-residential development within the City and its sphere of influence.

S.2 POTENTIAL ENERGY IMPACTS

The proposed Project would involve the temporary consumption of diesel fuel, gasoline, and electricity for construction purposes. The consumption of diesel, gasoline, and electric fuels in construction-related off-road equipment and vehicle trips would be temporary at each location and required to conduct development activities. Additionally, equipment and vehicles would be subject to regulations that would increase fuel efficiency, limit truck idling and reduce the carbon content of transportation fuels. Construction of development under the GPU therefore would not be unnecessary, inefficient, or wasteful. This impact would be **less than significant**.

Electricity and natural gas consumed during the operation of the building sector were estimated by Ascent during the preparation of the CAAP (Ascent 2025). Electricity consumption and consumption per service population would increase under the proposed GPU. Natural gas consumption would increase while consumption per service population would substantially decrease. New buildings constructed under the GPU would, at a minimum, meet the mandatory requirements established in the 2025 Building Energy Efficiency Standards (Energy Code), which contains energy and water efficiency requirements and

performance standards for energy consumption. The GPU and the CAAP also contain policies and strategies to promote energy efficiency, reduce natural gas consumption, and increase renewable energy.

The proposed Project's potential operations-related energy consumption for on-road vehicles were estimated using the California Air Resources Board's (CARB) Emission Factor (EMFAC) Model 2025 (Version 2.0.0). The proposed Project could consume approximately 20 million gallons of gasoline and 34 million gallons of diesel fuel in 2045, a reduction from the estimated 81 million gallons of gasoline and 45 million gallons of diesel fuel estimated in 2025. Electricity consumed for on-road vehicles would increase from approximately 55 thousand MWh/year in 2025 to 1.2 million MWh/year in 2045. Total petroleum consumption and consumption per service population would decrease under the proposed GPU, and the increase in vehicle electricity consumption is associated with the projected increase in EV usage and additional EV infrastructure which is in line with the state's zero emission vehicle goals.

The consumption of electricity, natural gas, and vehicle fuel resources would be necessary to accommodate the planned level of growth envisioned by the GPU and would not result in the unnecessary, inefficient, or wasteful use of energy resources. This impact would be **less than significant**.

The proposed Project would not conflict with nor obstruct a state or local plan adopted for the purposes of increasing the amount of renewable energy or energy efficiency as the proposed Project's buildings would be subject to residential and non-residential Energy Code requirements, would incorporate GPU policies and CAAP GHG reduction strategies that would also reduce energy consumption and increase renewable energy. Additionally, the CAAP would align with state plans to reduce GHG emissions, and projects it would achieve its 2030 and 2045 GHG targets, which are based on SB 32 and AB 1279, respectively, and be consistent with the 2017 and 2022 Scoping Plans. This impact would be **less than significant**.

S.3 POTENTIAL GHG EMISSION IMPACTS

Ascent prepared the Planning Area's emissions forecasts for 2045 under business-as-usual conditions and with the incorporation of CAAP GHG reduction strategies. The modeling indicates the under the business-as-usual condition, the GPU would have the potential to generate unmitigated GHG emissions in 2045, in metric tons of carbon dioxide equivalents per year per service population (MTCO_{2e}/yr/SP), of 1.1 MTCO_{2e}/yr/SP, which would exceed the 2045 GHG efficiency targets (1.0 MTCO_{2e}/yr/SP). This is considered a potentially significant impact. With the incorporation of CAAP GHG reduction measures, the GPU would have the potential to generate approximately 0.3 MTCO_{2e}/yr/SP in 2045, which would not exceed the 2045 efficiency target.

To reduce the proposed Project's potential operational GHG emissions levels, MIG recommends the proposed Project incorporate Mitigation Measure GHG-1 (Require a Project-level Greenhouse Gas Emissions Assessment for New Discretionary Development Projects), which would require a GHG assessment of discretionary projects, and the incorporation of mitigation if they are determined to be inconsistent with State or local GHG goals. Although substantial GHG emissions reductions may occur, the timing and certainty of such reductions cannot be guaranteed. For this reason, the proposed Project's GHG emissions could have the potential to result in a cumulatively considerable contribution to the adverse effects of global climate change, even with the incorporation of feasible mitigation measures. This impact would be **significant and unavoidable**.

S.4 CONSISTENCY WITH APPLICABLE PLANS

The proposed Project would not conflict with any plan or regulation adopted for the purposes of reducing GHG emissions, including CARB's 2022 Scoping Plan, the Sustainable Freight Action Plan, and the Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal). This impact would be **less than significant**.

S.5 RECOMMENDED GHG REDUCTION MEASURES

The following mitigation measures are recommended to reduce the Project's potential GHG emissions.

Mitigation Measure GHG-1: Require a Project-level Greenhouse Gas Emissions Assessment for New Discretionary Development Projects. Prior to a discretionary approval by the City for development projects subject to CEQA (meaning non-exempt CEQA projects) project applicants shall prepare and submit to the City for review and approval a technical assessment evaluating potential project-specific greenhouse gas (GHG) emissions impacts. The assessment shall evaluate the project's consistency with adopted state-wide GHG emissions reduction goals, such as Senate Bill 32, Assembly Bill 1279, or an interpolated GHG emission reduction goal for 2045 that is based on regional data (e.g., an interpolated SCAQMD efficiency metric of 1.0 MTCO_{2e}/yr/SP). If GHG emissions levels are determined to have the potential to be inconsistent with the State GHG reduction goals or the proposed CAAP, the City shall require that applicants for new development projects incorporate strategies, such as the CAAP GHG reduction strategies, to reduce GHG emissions during operational activities. The specific strategies identified for a project shall be included as conditions of approval, and be incorporated into all appropriate planning documents for the project.

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1 INTRODUCTION

The City of Lake Elsinore (City) proposes to adopt and implement the General Plan Update (GPU). The GPU would guide land use and development decisions for the Planning Area, which encompasses all properties within the incorporated City limits, as well as unincorporated properties within the City's sphere of influence. If approved, the GPU would support the sustainable development of both residential and non-residential land uses.

MIG, Inc. (MIG) has prepared this Energy and Greenhouse Gas Analysis Report (Report) to evaluate the potential energy and greenhouse gas (GHG) impacts associated with construction and operation of projects pursuant to the proposed GPU. MIG has prepared this report using project-specific information contained in the GPU. In general, this Report evaluates the potential “worst-case” conditions associated with implementation of the proposed GPU to ensure potential energy and GHG impacts are not underestimated.

This Report is intended for use by the city to assess the potential energy and GHG impacts of the proposed Project in compliance with the California Environmental Quality Act (CEQA; PRC §21000 et seq.) and the State CEQA Guidelines (14 CCR §15000 et seq.), particularly in respect to energy and GHG issues identified in Appendix G of the State CEQA Guidelines.

1.1 REPORT ORGANIZATION

This Report is organized as follows:

- **Chapter 1, Introduction**, explains the contents of this Report and its intended use.
- **Chapter 2, Proposed Project Description**, provides an overview of the construction and operational activities associated with the proposed GPU.
- **Chapter 3, Energy Setting and Regulatory Framework**, provides pertinent background information on energy resources, describes the existing energy setting of the proposed GPU, and provides information on the federal, state, and local regulations that govern the Planning Area's energy setting and its potential energy impacts.
- **Chapter 4, GHG Setting and Regulatory Framework**, provides pertinent background information on GHG and climate change, describes the existing GHG setting of the proposed GPU, and provides information on the federal, state, and local regulations that govern the Planning Area's GHG setting and potential GHG impacts.
- **Chapter 5, Energy Impact Assessment**, identifies the methods used to estimate the proposed GPU's potential construction and operational energy impacts consumption and evaluates the GPU's energy resource impacts in accordance with Appendix G of the State CEQA Guidelines.
- **Chapter 6, GHG Impact Assessment**, identifies the methods used to estimate the proposed GPU's potential construction and operational GHG emissions and evaluates the GPU's GHG impacts in accordance with Appendix G of the State CEQA Guidelines.
- **Chapter 7, Report Preparers and References**, list the individuals involved, and the references used, in the preparation of this Report.

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2 PROPOSED PROJECT DESCRIPTION

The comprehensive update of the Lake Elsinore General Plan serves as the guide for the City's future growth and development. The proposed GPU succeeds the last comprehensive general plan adopted in 2011 and coordinates future development and policies with regional planning efforts and serves as the city's fundamental guide in developing strategies to address greenhouse gas reduction, climate change, and climate planning. The proposed GPU characteristics that are relevant to the evaluation of potential energy resource and GHG emissions impacts are described in detail below.

2.1 PROJECT LOCATION

The City is located east and west of the I-15 Freeway and north and south of the Ortega Highway (SR-74). Located in southwest Riverside County, approximately 24 miles south of downtown Riverside, the City is bordered by the City of Wildomar to the south and east, the City of Menifee to the East, the City of Canyon Lake to the east and north, and unincorporated portions of Riverside County to the north, west and south.

2.2 EXISTING PROJECT AREA DESCRIPTION AND OPERATIONS

The Planning Area includes a mix of undeveloped/vacant land, park and open space, residential (mostly single-family residential), commercial, industrial, and agricultural/rural land uses.

2.3 PROPOSED PROJECT CHARACTERISTICS

The proposed GPU if fully implemented, may result in changes to land use and increases in housing, population, and employment as outlined in Table 2-1.

Table 2-1 General Plan Update Growth Parameters

Area	Residential		Non-Residential	
	Units	Population	Square Feet	Jobs
City of Lake Elsinore (City)	40,623	132,382	21,219,257	32,741
Sphere of Influence (SOI)	5,987	19,509	5,166,522	8,054
Planning Area (City + SOI)	46,610	151,891	26,385,778	40,795

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3 ENERGY SETTING AND REGULATORY FRAMEWORK

This chapter provides information on the environmental and regulatory energy setting of the proposed GPU. Information on existing energy conditions, and federal, state, and local energy standards and goals was obtained from the United States Environmental Protection Agency (U.S. EPA), United States Energy Information Administration (U.S. EIA) the California Energy Commission (CEC), and Southern California Gas (SoCal Gas).

3.1 ENVIRONMENTAL SETTING

Energy is primarily categorized into three areas: electricity, natural gas, and fuels used for transportation. The following describes the various types of energy, as well as where the energy is generated, how it is used, and the quantities in which it is consumed. This is a result of California's mild climate, extensive efforts to increase energy efficiency, and implementation of alternative technologies. California leads the nation in electricity generation from solar, geothermal, and biomass resources (U.S. EIA 2024a).

3.1.1 ELECTRICITY

Electricity is the flow of electrical power or charge (i.e., the movement of electrons between atoms). It is produced by converting sources of primary energy such as coal, natural gas, nuclear, hydropower, wind, and solar, into electrical power through various means.

Generators and solar photovoltaic (PV) cells are two of the primary pieces of equipment used to produce and supply electricity to the grid. The following describes the processes through which electricity is generated by these pieces of equipment.

- **Generators.** Turbine generators convert mechanical or chemical energy into electricity. At its simplest form, an electrical generator is an electromagnet, moving wire near a magnet to direct the flow of electricity. Turbine generators do this by using a moving fluid (e.g., water, steam, combustion gases, or air) to push rotator blades that are attached to a generator. The rotation of magnets and wires within the generator produces an electromagnetic current, directing electrical flow.
- **Solar Photovoltaic Cells.** Solar photovoltaic (PV) cells convert solar energy directly into electricity. They are made up of semiconductor material that absorbs sunlight and generates an electrical current. This current is captured and transferred to wires so that it can be utilized at a different location.

Electricity production can be grouped into two main categories; electricity that is generated from renewable sources (e.g., solar and wind) and electricity that is generated from non-renewable sources (e.g., fossil fuel combustion). Table 3-1 and Table 3-2 summarize the primary renewable and non-renewable sources of electricity, respectively, as well as how the energy from the various sources is converted into electricity.

Table 3-1: Renewable Sources of Electricity Production

Source	Electricity Production Process
Wind	Wind can be converted to electricity through the use of a wind turbine (historically referred to as "windmills"). Electricity from this source is produced when wind causes the turbine's blades to turn. The amount of electricity generated by a wind turbine is dependent on a number of factors, but is primarily related to how much wind energy can be collected at a given time. Wind turbines with longer blades have the capacity to generate more electricity than those with smaller blades, because they can collect more of the wind's energy. A small wind turbine could generate a similar output as a larger one, but the smaller one would need to be subject to higher wind speeds. Wind power plants, or wind farms, are composed of multiple wind turbines spread out over a large area.
Solar	The sun's energy can be converted into electricity by using solar PV cells, which produce electricity when photons from the solar energy are absorbed by the semiconductor material in the PV cell. Electrons are dislodged from the semiconductor material and absorbed by electrical conductors, which are connected in an electrical circuit. Electricity flows through the electrical circuit to an external device, such as a battery or an inverter. ^(A) Solar energy production can be increased with additional PV cells. PV cells can be connected in solar panels, and groups of solar panels can be connected into a solar array. One PV cell may power small devices such as calculators, small solar arrays may power individual residential or commercial buildings, and large arrays may produce power for utilities.
Hydroelectric	Hydroelectric energy is produced by using a naturally-flowing water source (e.g., from a river or dam) to spin the blades of a turbine, which is typically located on or adjacent to the body of water. Water is piped from a location upstream of the facility, through the turbine, and released back into the environment on the downstream side of the facility. The amount of electricity produced by a hydroelectric generator can be regulated by controlling the amount of water flowing through the turbine at a given time (e.g., greater water flow would produce more electricity).
Geothermal	Geothermal energy is produced by utilizing underground high-temperature hydrothermal resources to create steam (or superheat evaporate and other working fluid) that turns a turbine. Hot water is piped in one side of the system, used to turn the turbine, then piped back to a cooling tower before being piped underground. These power plants can pipe steam or hot water from wells that reach up to two miles into the earth.
Source: U.S. EIA 2022, 2023a, 2023b, 2024b (A) An inverter is a device that converts the type of electricity that is produced by PV cells (direct current, or DC, electricity) to the type of electricity that is used in appliances or in an electrical grid (alternating current, or AC electricity).	

Table 3-2: Non-Renewable Sources of Electricity Production

Source	Electricity Production Process
Fossil Fuels	Combusting fossil fuels releases energy that can be harnessed and turned into electricity. The change in air pressure as a result of burning the material can be used to create a mechanical process that rotates a generator (e.g., using the hot air from the combusted material to move rotator blades within a generator or pistons within an internal combustion engine). Fossil fuels are hydrocarbons formed from plant and animal remains that were placed under heat and pressure from layers of sand, silt, and rock. Fossil fuels can include coal, crude oil, and natural gas. Petroleum products such as gasoline and diesel are produced from refining fossil fuels.
Nuclear	Nuclear reactors convert energy to electricity by using the heat from a nuclear reactor to evaporate water (i.e., producing steam) that rotates a turbine. Although nuclear energy is not renewable, it is often considered “green” and considered alongside renewable sources because it is a carbon-free source of electricity.
Source: U.S. DOE n.d., U.S. EIA n.d., 2023c	

Electricity production relies on different energy sources and technologies. A combination of the renewable and nonrenewable energy sources described above are used to generate electricity.

Electricity is measured in watts, a unit of power. Watts may be described in various quantities using kilo-, mega-, and giga-, prefixes, which correspond to one-thousand, one-million, and one-billion of something, respectively. For context, these prefixes are typically used in the following contexts when describing electricity production and consumption.

- **Watts** are used as a measurement for small devices. For example, the solar powered calculator may use 1 Watt. A lightbulb may use 50 Watts.
- **Kilowatts (kW)**, or 1,000 Watts, are typically used to describe large appliance and building-scale electricity consumption. For example, the average Californian household consumed 6,174 kWh of electricity in 2019 (DNV GL Energy Insights USA 2021).
- **Megawatts (MW)**, are 1,000 kW, or one million Watts. Megawatts may be used when discussing utility systems. For example, from October 2024 to November 2024, the U.S. added 5,845 MW of summer solar power generating capacity (U.S. EIA 2024c).
- **Gigawatts (GW)**, are 1,000 MW, one million kW, or one billion watts. Gigawatts may be used when discussing statewide electricity generation. For example, in 2022, California generated 203,257GWh of electricity in-state (CEC 2023a).

Electricity use over time can be measured in watt-hours (Wh), where, for example, one kWh is the equivalent of one kW generated or consumed over the course of one hour. For example, if a 50 W lightbulb was on for one hour it would consume 5 Wh (or 0.05 kWh) of electricity. If it was on for 100 hours, it would consume 5 kWh of electricity.

3.1.2 NATURAL GAS

Natural gas is a fossil fuel-based energy source that is typically found between layers of rock or with deposits of crude oil. Natural gas can be extracted by drilling in wells or fracking. After extraction, natural gas is sent to a processing facility and then to storage or to natural gas companies.

Biomethane, also known as renewable natural gas, can be used as a substitute for fossil natural gas. Biomethane is a gas formed from the decomposition of organic matter, composed primarily of methane and carbon dioxide. It can be produced from solid waste landfills, wastewater treatment plants, food waste, organic waste, and livestock farms. Biomethane is then treated to remove contaminants and gases such as carbon dioxide until the methane content is greater than 90% (U.S. EPA 2024a).

Natural gas can be measured in units such as therms or British thermal units (Btu), which are quantities of heat, or cubic feet, which is a volume. The U.S. EIA defines a Btu as the quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit) (U.S. EIA n.d.). One therm is the equivalent of 100,000 Btu. Since heat quantity and volume cannot be converted directly, there is not one conversion rate between therms and cubic feet. However, the units can be converted if the heat content per volume is known. The average heat content of natural gas in 2023 was approximately 1,038 Btu per cubic foot (U.S. EIA 2024d).

3.1.3 TRANSPORTATION

Fuels used for transportation may include diesel, gasoline, natural gas, electricity, and hydrogen. Diesel, gasoline, and natural gas fuels have traditionally been refined from crude oil. Combusting these fuel sources in an engine releases energy that can be transferred into making an object move (e.g., rotating a vehicle's driveshaft or a boat's propeller). Diesel, which can also be biomass based,¹ is typically used in larger pieces of equipment, such as trucks, trains boats, buses, farm equipment, and construction equipment. Gasoline (which may be blended with other liquids, such as ethanol), electricity, and hydrogen fuel cells² are primarily used to power passenger vehicles.

3.1.4 HISTORICAL AND CURRENT ENERGY PRODUCTION AND CONSUMPTION HABITS

3.1.4.1 National

Total U.S. energy consumption has increased in recent decades; however, per capita energy consumption has generally decreased since the year 2000. This is due to factors such as greater energy efficiency in appliances, vehicles, and utility scale electricity generation and a reduction in energy-intensive manufacturing (U.S. EIA 2024e). The following describes historical energy production and consumption trends in the U.S.

Electricity

The mix of energy sources for U.S. electricity generation has shifted in recent decades, but has primarily consisted of electricity generated from natural gas, coal, nuclear, hydroelectric, wind, and solar energy sources. Table 3-3 and Figure 3-1 depict the overall quantity and make-up of electricity of electricity production in the U.S. from 2016 to 2023.

¹ Biodiesel and renewable diesel are both produced from non-petroleum sources such as vegetable oil and animal fat. Biodiesel is consumed after it is blended with petroleum diesel. While renewable diesel may also be blended with petroleum diesel, renewable diesel can be transported and consumed directly without needing to be blended with petroleum.

² Hydrogen fuel cells can produce electricity by combining hydrogen and oxygen atoms.

Table 3-3: United States Electricity Generation (2016 to 2023)

Energy Source	Electricity Produced Per Calendar Year (Million GWh)							
	2016	2017	2018	2019	2020	2021	2022	2023
Natural Gas	1,379	1,298	1,472	1,589	1,627	1,579	1,687	1,806
Coal	1,239	1,206	1,149	965	773	898	832	675
Nuclear	806	805	807	809	790	778	772	775
Hydroelectric	268	300	293	288	285	252	255	245
Wind	227	254	273	296	338	378	434	421
Solar	55	77	93	107	131	164	205	239
Other ^(A)	104	95	94	77	66	59	46	22
Total Electricity	4,078	4,035	4,181	4,131	4,010	4,108	4,231	4,183
Fossil Fuels ^(B)	2,618	2,504	2,621	2,553	2,400	2,477	2,519	2,481
Non-Hydroelectric Renewables ^(C)	282	332	366	403	469	543	639	660
Total Carbon Free Electricity ^(D)	1,355	1,437	1,466	1,500	1,544	1,574	1,666	1,680

Sources: U.S. EIA n.d.

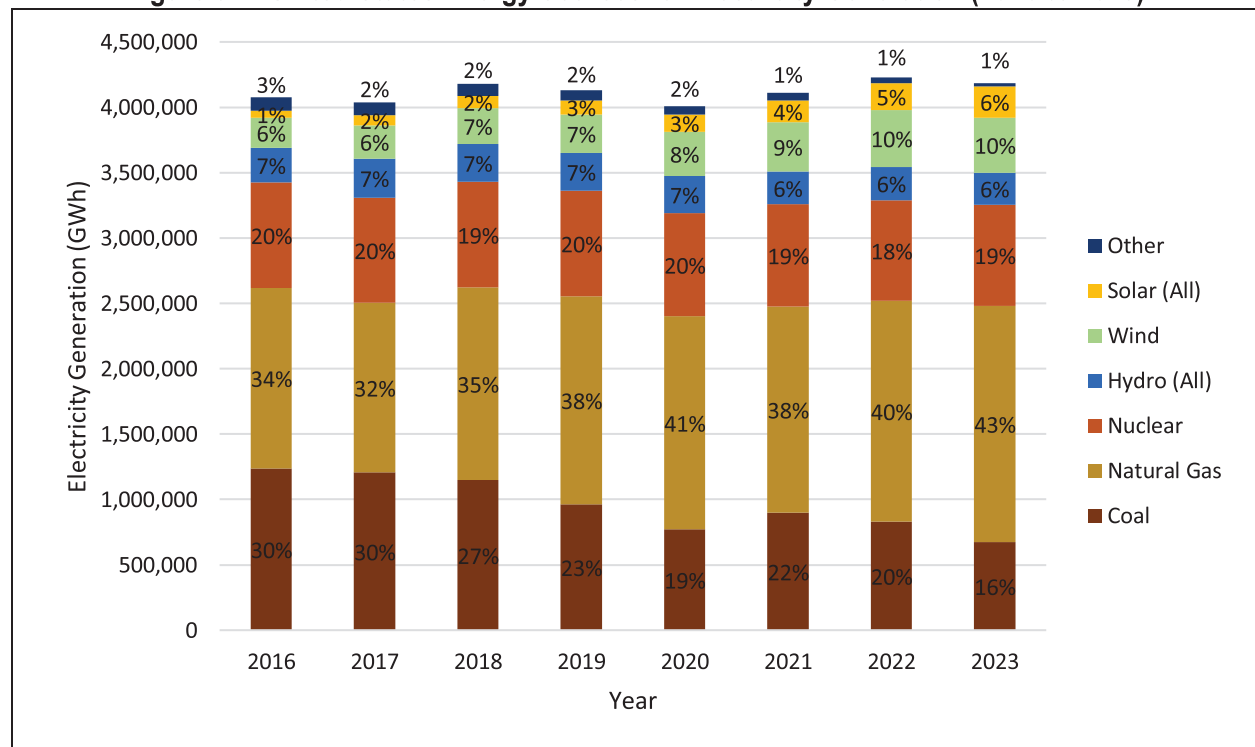
(A) "Other" sources include electricity production from petroleum coke and liquids, other gases, geothermal, and biomass.

(B) Fossil fuels include natural gas and coal.

(C) Non-hydroelectric renewables include wind and solar.

(D) Carbon-free energy sources consist of nuclear, hydroelectric, and renewable fuels.

Figure 3-1: United States Energy Sources for Electricity Generation (2016 to 2023)



Source: U.S. EIA n.d.

Note: "Other" sources include electricity production from petroleum coke and liquids, other gases, geothermal, and biomass.

As shown in Table 3-3 and Figure 3-1, the amount of electricity produced from the different sources of energy varied between 2016 and 2023. Electricity production from fossil fuels (natural gas and coal), while remaining the predominant source of energy for electricity, decreased from a combined composition of approximately 64% in 2016 to approximately 59% in 2023. In particular, there was a large shift away from coal and toward natural gas over this timeframe. Whereas in 2016 the total contribution to electricity production from coal (30%) and natural gas (34%) were similar, in 2023 the contribution from coal (16%) was much less than natural gas (43%).

Nuclear power plants were the second largest generator of electricity nationwide, while electricity from renewable sources (e.g., solar, wind, hydroelectric) comprised less than a quarter of all electricity production; however, the overall electricity contribution from renewable sources, and in particular wind energy, approximately doubled over the 2016 to 2023 timeframe. While the nation's source of energy production varied from 2016 to 2023, the total amount of annual energy produced from all sources was generally constant between 4,000 and 4,200 thousand GWh of production.

Natural Gas

Natural gas consumption nationwide has increased in recent decades. In 1990, the U.S. consumed 24,369 billion cubic feet of natural gas, which increased to approximately 32,500 billion cubic feet of natural gas in 2023 (U.S. EIA 2012 and 2023d).

Transportation Fuels

Petroleum products (e.g., gasoline and diesel) have historically been the predominant form of energy used within the transportation sector. Annual consumption of gasoline in the transportation sector increased from approximately 85.7 billion gallons per year in 1970 to approximately 131.1 billion gallons per year in 2023, an approximately 53% increase (U.S. EIA 2024f). Gasoline consumption has fluctuated slightly since 2007 (i.e., increasing and decreasing) but has generally remained at or around 135 billion gallons per year, deviating only from the trend at the start of the COVID-19 pandemic in 2020. The use of diesel fuel increased at a substantially faster rate across the 1970 to 2023 timeframe, from approximately 11.3 billion gallons of consumption in 1970 to approximately 45.4 billion gallons in 2023, a 400% increase (U.S. EIA 2024f). Unlike gasoline consumption, which is still slightly down from pre-COVID-19 levels, diesel consumption has generally remained constant. Although petroleum productions are the primary forms of energy used within the transportation sector, other fuels are used to lesser extents, including jet fuel (also petroleum), natural gas, biofuels, and other sources (e.g., fuel oil, lubricants, propane, and electricity).

In 2022, petroleum products (gasoline, diesel, and jet fuel) accounted for approximately 90% of energy consumption in the transportation sector nationwide (U.S. EIA 2024f). Gasoline is currently the main transportation fuel used in the U.S., accounting for approximately 52% of energy consumption in the transportation sector, and is followed by diesel at 22% and jet fuel at 12%. Electricity accounted for less than one percent energy consumption in the U.S. transportation sector in 2021 (U.S. EIA 2023e).

3.1.4.2 State

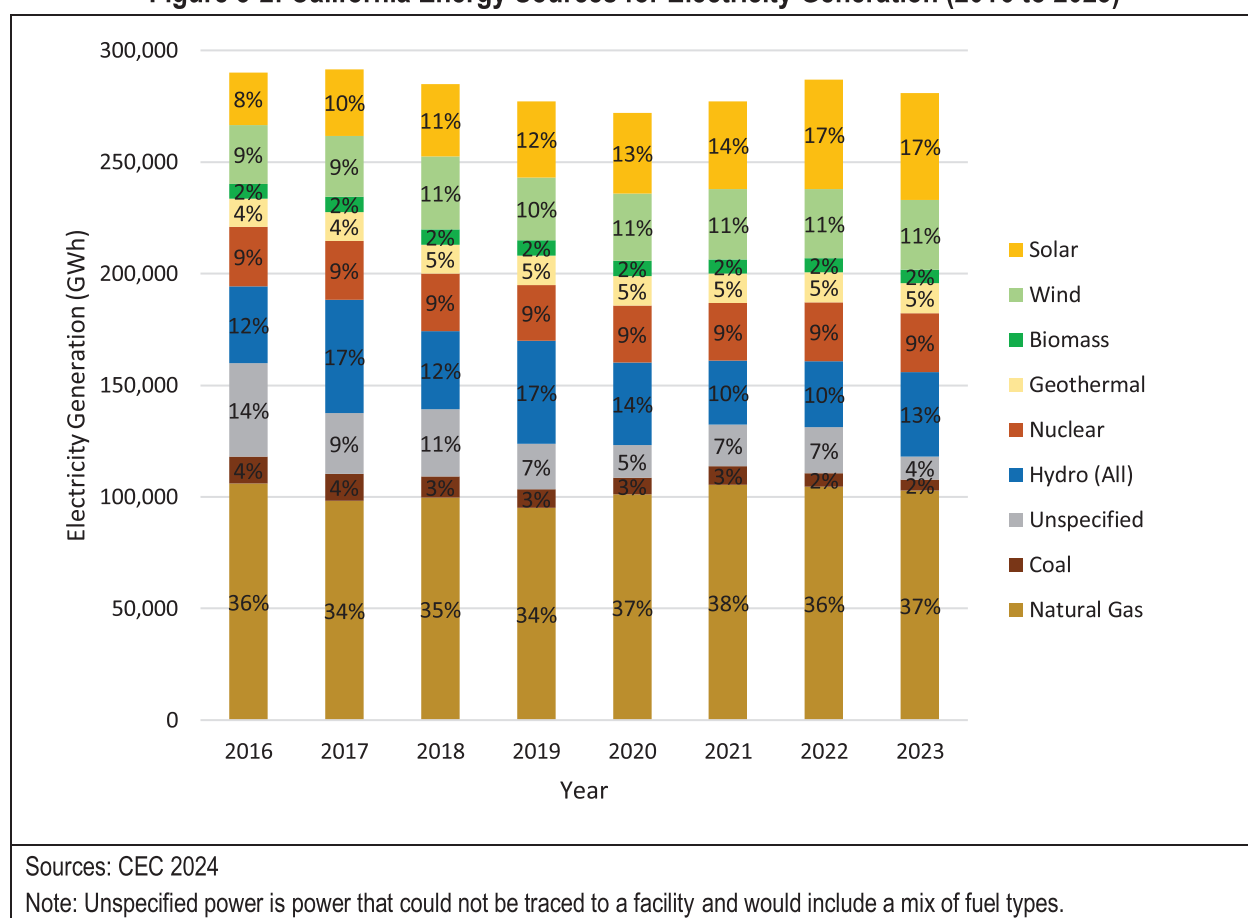
According to the U.S. EIA, California is the most populous state in the U.S., representing 12 percent of the total national population, has the largest economy, and is second only to Texas in total energy consumption. However, California has one of the lowest per capita energy consumption levels in the U.S. This is a result of California's mild climate, extensive efforts to increase energy efficiency, and implementation of alternative technologies. California leads the nation in electricity generation from solar, geothermal, and biomass resources (U.S. EIA 2024g).

Electricity

As discussed above, California has one of the lowest per capita energy consumption levels in the U.S, which, in part, is attributable to its extensive efforts to increase energy efficiency. The State has also passed several legislative bills that have required retail-energy suppliers to increase the amount of renewable electricity supplied to customers. California's annual electricity generation and the sources that created it for the 2016 through 2023 calendar years are presented below in Table 3-4 and Figure 3-2.

Table 3-4: California Electricity Generation (2016 to 2023)

Energy Source	Electricity Produced Per Calendar Year (Thousand GWh)							
	2016	2017	2018	2019	2020	2021	2022	2023
Natural Gas	106	98	100	95	101	105	104	103
Coal	12	12	9	8	7	8	6	5
Petroleum / Other	<0.5	<0.5	<0.5	<0.5	1	1	<0.5	<0.5
Nuclear	27	27	26	25	25	26	26	26
Hydroelectric	34	51	35	46	37	28	30	38
Wind	26	27	33	28	30	32	31	31
Solar	24	30	33	34	36	39	49	48
Geothermal	13	13	13	13	13	13	13	14
Biomass	7	7	7	7	7	6	6	6
Unspecified ^(A)	42	27	30	20	20	19	20	10
Total Electricity ^(B)	291	292	285	278	273	278	287	281
<i>Fossil Fuels^(C)</i>	<i>118</i>	<i>111</i>	<i>110</i>	<i>104</i>	<i>109</i>	<i>114</i>	<i>111</i>	<i>108</i>
<i>Non-Hydroelectric Renewables^(D)</i>	<i>69</i>	<i>77</i>	<i>85</i>	<i>82</i>	<i>86</i>	<i>90</i>	<i>100</i>	<i>99</i>
<i>Total Carbon Free Electricity^(E)</i>	<i>61</i>	<i>77</i>	<i>61</i>	<i>71</i>	<i>63</i>	<i>54</i>	<i>56</i>	<i>64</i>
Sources: CEC 2024 (A) "Unspecified" power is power that could not be traced to a facility, and would include a mix of fuel types (B) Totals may not equal due to rounding (C) Fossil fuels include natural gas and coal. (D) Non-hydroelectric renewables include wind, solar, geothermal and biomass. (E) Carbon-free energy sources consist of nuclear, hydroelectric, and renewable fuels.								

Figure 3-2: California Energy Sources for Electricity Generation (2016 to 2023)

As shown in Table 3-4 and Figure 3-2, overall electricity consumption throughout the State has remained relatively constant over the 2016 to 2023 timeframe, from approximately 291 thousand GWh in 2016 to 281 thousand GWh in 2023 (an approximately 1 percent decrease). During this time, electricity production from natural gas and coal power plants decreased slightly from a combined total of approximately 40% to approximately 39% of the total energy supply. Biomass, geothermal, and nuclear sources have remained relatively constant at 2%, 5%, and 9%, respectively, while electricity generated from wind, and solar sources has increased. Electricity production from solar had one of the biggest relative increases in electricity production, increasing from approximately 8% to 17% between 2016 and 2023 (an approximately 113% increase). In 2023, over half of California's electricity was generated from carbon-free sources, including renewables, nuclear, and hydroelectric.

Similar to U.S. electricity generation, California electricity generation has shifted, with coal decreasing, renewables increasing, and nuclear and hydroelectric remaining relatively constant. However, while the direction of the shift in energy sources on the national and statewide level is the same, the state differs from U.S. energy consumption in the scale of this shift. For example, California's energy mix used for electricity generation contains over twice the amount of renewable fuels as the U.S.³ California also uses a lower percentage of fossil fuels, mainly due to its low coal consumption.

³ Whereas approximately 40% of electricity in California is from renewable sources, only 18% of electricity generated in the greater U.S. is from renewable sources.

Natural Gas

Annual natural-gas consumption in the State has fluctuated since the 1970s, but has generally remained at or around 2,100 billion cubic feet per year since the 1990s (U.S. EIA 2024h). Although California has historically accounted for approximately 7% of annual nationwide natural gas consumption, its reserves and production constitute less than 1% of the total United States (U.S. EIA n.d. and U.S. EIA 2025).

In 2023, California consumed about 2,087 billion cubic feet of natural gas, with the majority of that consumption attributable to the industrial sector (31%, including natural gas power plants) followed by the residential (22%) and commercial (12%) sectors (U.S. EIA 2024i). In 2020, approximately 88% of Californian homes used natural gas in some building system capacity, including clothes washer (77% of homes) and/or cooking appliance(s)⁴ (70% of homes) (U.S. EIA 2023f, U.S. EIA 2023g).

Transportation

California's transportation sector consumed 74.7 MMBtu of energy per capita in 2022, which ranked 36th in the nation (U.S. EIA n.d.). This means that California had the 16th best transportation energy per capita rate (i.e., most efficient) in the United States, including the District of Columbia. Much of the State's efficiency with regard to the amount of transportation energy consumed per capita can be attributed to the increase in vehicle fuel efficiency standards required by the State.

California's production of gasoline and diesel fuels supplies both in- and out-of-state demand; however, most gasoline and diesel fuel sold in California for motor vehicles is refined within the state to meet state-specific formulations required by CARB (i.e., these fuels typically are not imported from out of state). Crude oil extraction and production has been decreasing since the mid-1980s (from a peak of approximately 402 million barrels in 1986 to 124 million barrels in 2023) and is projected to continue to decline (CEC n.d.). According to taxable sales figures available from the California Department of Tax and Fee Administration, statewide gasoline sales have decreased from approximately 14,703 million gallons in 2014 to approximately 13,565 million gallons in 2023 (an approximately 7.5% reduction); however, this trend has not been linear. Gasoline sales increased from 2014 to 2017, remained relatively constant between 2017 and 2019, and decreased in the 2020 to 2023 timeframe. This decrease is most likely attributable to the shelter-in-place orders imposed due to the COVID-19 pandemic, but is also likely associated with vehicle turnover (i.e., from older, less fuel efficient cars to newer models) across the same timeframe (CDTFA n.d.). Statewide diesel fuel sales have generally increased, from approximately 2,776 million gallons in 2014 to approximately 2,982 million gallons in 2023 (an approximately 7% increase) (CDFTA n.d.).

In 2022, California reached a milestone 1 million ZEVs sold, accounting for 40% of all ZEVs operating in the U.S. (Office of Governor Gavin Newsom 2022). By November 2024, California reached another milestone 2 million ZEVs sold and in the third quarter of 2024, 26.4% of all new vehicle sales in the state were ZEVs (Office of Governor Gavin Newsom 2024). Most of the ZEVs sold to date have been electric vehicles; however, vehicles powered by hydrogen fuel cells have also been expanding in availability and use, with 14,429 hydrogen fuel cell vehicles actively registered in California as of April 2024 (CARB 2024).

Transportation fuels are not used equally across different vehicle types in the state. For example, whereas light-duty vehicles (e.g., cars and pick-up trucks) are mainly powered by gasoline and electricity, medium-

⁴ Cooking appliances includes natural gas ranges, cooktops, and ovens; natural gas outdoor grills are not included in this metric.

and heavy-duty vehicles (e.g., work trucks, semi-trucks, etc.) are generally powered by diesel. Natural gas can also be used as a fuel source in trucks and buses. Table 3-5 below shows a breakdown of state-wide vehicle population in 2022, by fuel type.

Table 3-5: California Transportation Fuels by Vehicle Type (2022)

Vehicle Type	Breakdown in Fuel Type				
	Gasoline	Diesel	Natural Gas	Electricity	Plug-in Hybrid ^(A)
Medium- and heavy-duty trucks	8.3%	88.7%	3.0%	0.0%	0.0%
Light heavy-duty trucks	53.7%	46.3%	0.0%	0.0%	0.0%
Buses	33.9%	47.6%	18.2%	0.3%	0.0%
Light-duty vehicles	96.1%	0.5%	0.0%	2.1%	1.3%
Source: EMFAC2021					
(A) Plug-in hybrid vehicles are powered by gasoline and electricity.					

Although each vehicle category may use several different fuel types, the majority of trucks in 2022 used diesel; most buses mostly used gasoline, diesel, and natural gas; and the majority of light duty vehicles used gasoline.

3.1.4.3 Local

Electricity

In 2024, Riverside County consumed approximately 17,418 GWh of electricity, about 6.2% of the state's electricity consumption. The non-residential sector made up approximately 50% of County-wide consumption while the residential sector made up approximately 50% of County-wide consumption (CEC 2025a).

Southern California Edison (SCE) is the electricity utility provider for the Planning Area. In the 2022 fiscal year, SCE sold approximately 84,218 GWh of electricity (SCE, 2023a); approximately 45% of the electricity that SCE delivered to customers came from carbon-free resources, including solar energy (approximately 17%), wind energy (approximately 10%), and geothermal energy (approximately 6%) (SCE, 2023b).

Natural Gas

Riverside County consumed approximately 427 million therms of natural gas in 2024, accounting for approximately 3.8% of statewide consumption. The non-residential sector made up approximately 35% of County-wide consumption, while the residential sector made up approximately 65% (CEC, 2025b).

SoCalGas provides natural gas service to the Planning Area. SoCalGas is the principal distributor of natural gas in Southern California and provides natural gas for residential, commercial, and industrial markets. The annual natural gas sale of SoCalGas to all markets in 2022 was approximately 5,026 million therms (CEC, 2023b).

Transportation

Retail fuel outlet survey data indicates Riverside County accounted for approximately 7.2% and 7.6% of total statewide gasoline and diesel sales, respectively, in 2024 (CEC n.d.).

3.2 ENERGY REGULATORY SETTING

3.2.1 FEDERAL ENERGY REGULATIONS

3.2.1.1 Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy and Policy Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards.

3.2.1.2 Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 was signed into law. In addition to setting increased Corporate Average Fuel Economy (CAFE) standards for motor vehicles, the act also includes the following provisions related to energy efficiency:

- Renewable fuel standards (RFS)
- Appliance and lighting efficiency standards
- Building energy efficiency

The federal legislation requires ever-increasing levels of renewable fuels to replace petroleum. The U.S. EPA is responsible for developing and implementing regulations to ensure transportation fuel sold in the United State contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel produces, and other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Energy Independence and Security Act of 2007 (EISA), the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

- EISA expanding the RFS program to include diesel, in addition to gasoline;
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA required the U.S. EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHG than the petroleum fuel it replaces (U.S. EPA, 2024b).

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

3.2.1.3 Federal Vehicle Standards

In 2009, the NHTSA issued a final rule regarding fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the U.S. EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of carbon dioxide (CO₂) in model year 2025, on an average industry fleetwide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the U.S. EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the U.S. EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6% to 23% over the 2010 baselines.

In August 2016, the U.S. EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018–2027 for certain trailers, and model years 2021–2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion metric tons (MT) and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (U.S. EPA and NHTSA, 2016).

In August 2018, The U.S. EPA and NHTSA released a notice of proposed rulemaking called Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule).

On September 27, 2019, the U.S. EPA and the NHTSA published the SAFE Vehicles Rule Part One: One National Program.” (84 Fed. Reg. 51,310 (Sept. 27, 2019)). The Part One Rule revoked California’s authority to set its own greenhouse gas emissions standards and set zero emission vehicle mandates in California.

In April 2020, the U.S. EPA and NHTSA issued the SAFE Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (Final SAFE Rule) that relaxed federal greenhouse gas emissions and fuel economy standards. The Final SAFE Rule relaxed federal greenhouse gas emissions and Corporate Average Fuel Economy (CAFE) standards to increase in stringency at approximately 1.5 percent per year from model year (MY) 2020 levels over MYs 2021–2026. The previously established emission standards and related “augural” fuel economy standards would have achieved approximately 4 percent per year improvements through MY 2025. The Final SAFE Rule affects both upstream (production and delivery) and downstream (tailpipe exhaust) CO₂ emissions (CARB 2020). NHTSA repealed and the U.S. EPA rescinded the SAFE Rule Part One in December 2021 and March 2022, respectively, at that time restoring California’s authority to implement its GHG standards and ZEV mandates (NHTSA 2024 and U.S. EPA 2023). However, in 2025 Congress revoked the EPA waiver that allows CA to set its zero emission

vehicle mandate, and the U.S. Department of Transportation is currently in the process of reviewing the CAFE standards.

3.2.2 STATE ENERGY REGULATIONS

3.2.2.1 Title 24 Energy Standards

Title 24 of the California Code of Regulations, known as the Building Standards Code, contains regulations that govern structural safety and sustainability of buildings in California. The code is organized into 12 different parts, including:

Part 6 of the Title 24 Building Standards Code is referred to as the Building Energy Efficiency Standards (BEES, or Energy Code). The CEC first adopted energy efficiency standards for residential and non-residential development in 1978 in response to a legislative mandate to reduce energy consumption in the State. The standards are updated on an approximately three-year cycle to allow for the consideration and inclusion of new energy efficiency technologies and methods. The current 2022 BEES were adopted in August 2021, went into effect on January 1, 2023, and focused on establishing or expanding standards for electric heat pumps, for single-family homes to be electric-ready, for solar photovoltaic system and battery storage, and for ventilation systems (CEC 2021). The California Building Standards Commission approved the 2025 BEES in December 2024, and the 2025 BEES are expected to take effect on January 1, 2026, as scheduled.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CalGreen Code). The purpose of the CalGreen Code is to “improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality” (CDHCD n.d.). The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC). CalGreen contains both mandatory and voluntary measures. For non-residential land uses there are 39 mandatory measures including, but not limited to, exterior light pollution reduction, wastewater reduction by 20 percent, and commissioning of projects over 10,000 square feet. Two tiers of voluntary measures apply to nonresidential land uses, for a total of 36 additional elective measures.

3.2.2.2 Senate Bill 375 (Sustainable Communities and Climate Protection Act)

In January 2009, California Senate Bill (SB) 375, known as the Sustainable Communities and Climate Protection Act, went into effect. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce GHG emissions and other air pollutants. SB 375 tasks CARB to set GHG reduction targets for each of California’s 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

In August 2010, CARB released the proposed GHG reduction targets for the MPOs. The proposed reduction targets for the Southern California Association of Governments (SCAG) region were 8% by year 2020 and 13% by year 2035. In September 2010 and February 2011, the 8% and the 13% targets were

adopted, respectively. SCAG's Regional Council adopted 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) on April 7, 2016, which updated the 2012 RTP/SCS

In March 2018, CARB established new regional GHG reduction targets for SCAG and other MPOs in the state (CARB n.d.). The new SCAG targets are an 8% reduction in per capita passenger vehicle GHG reductions by 2020 and a 19% reduction by 2035. On May 7, 2020, SCAG adopted "Connect SoCal", the 2020-2045 RTP/SCS, for federal transportation conformity purposes only. On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt Connect SoCal, and the addendum to the Connect SoCal Program Environmental Impact Report. Connect SoCal is designed to meet the regional GHG reduction targets for SCAG that were identified by CARB in 2018 (SCAG 2020a).

Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. It charts a path toward a more mobile, sustainable and prosperous region by making connections between transportation networks, between planning strategies and between the people whose collaboration can improve the quality of life for Southern Californians. Connect SoCal contains 10 primary goals, as detailed below:

1. Encourage regional economic prosperity and global competitiveness.
2. Improve mobility, accessibility, reliability, and travel safety for people and goods.
3. Enhance the preservation, security, and resilience of the regional transportation system.
4. Increase person and goods movement and travel choices within the transportation system.
5. Reduce greenhouse gas emissions and improve air quality.
6. Support healthy and equitable communities.
7. Adapt to a changing climate and support an integrated regional development pattern and transportation network.
8. Leverage new transportation technologies and data-driven solutions that result in more efficient travel.
9. Encourage development of diverse housing types in areas that are supported by multiple transportation options.
10. Promote conservation of natural and agricultural lands and restoration of habitats.

Connect SoCal's "Core Vision" centers on maintaining and better managing the transportation network for moving people and goods, while expanding mobility choices by locating housing, jobs, and transit closer together and increasing investment in transit and complete streets. The Core Vision includes: Sustainable Development, System Preservation and Resilience, Demand and System Management, Transit Backbone, Complete Streets, and Goods Movement (SCAG 2020b).

In April 2024, SCAG's Regional Council adopted Connect SoCal 2024, (2024 RTP/SCS) an update to Connect SoCal 2020 that planned development in the region through 2050 (SCAG 2024). Connect SoCal 2024 updates assumptions from Connect SoCal 2020. The Regional Growth Forecast in Connect SoCal 2024 projects a 30% higher household growth during the 2020s than was projected in Connect SoCal 2020. Connect SoCal 2024 also shifts the categories of regions that can accommodate jobs and housing from Priority Growth Areas (PGAs) to Priority Development Areas (PDAs). While PGAs and PDAs have substantial overlap, PDAs do not include Job Centers and High-Quality Transit Areas that helped compose the PGAs. Compared to Connect SoCal 2020's PGAs, SoCal 2024's PDAs include a greater

percentage of new households and a substantially lower percentage of new jobs in a larger total land area.⁵ Connect SoCal 2024 projects that approximately 66% of new households and 54% of new jobs between 2019 and 2050 will be located in PDAs. PDAs in Connect SoCal 2024 include Neighborhood Mobility Areas (NMAs), Transit Priority Areas (TPAs), Livable Corridors, and Spheres of Influence (SOIs). Connect SoCal 2024 is projected to achieve the region's targets for reducing greenhouse gases from automobiles and light-duty trucks by 19% per capita, from 2005 levels, by 2035.

3.2.2.3 Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard (RPS) Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The *2003 Integrated Energy Policy Report* recommended accelerating that goal to 20 percent by 2010, and the *2004 Energy Report Update* further recommended increasing the target to 33 percent by 2020. The state's *Energy Action Plan* also supported this goal. In 2006 under Senate Bill 107, California's 20 percent by 2010 RPS goal was codified. The legislation required retail sellers of electricity to increase renewable energy purchases by at least one percent each year with a target of 20 percent renewables by 2010. Publicly owned utilities set their own RPS goals, recognizing the intent of the legislature to attain the 20 percent by 2010 target.

On November 17, 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring "[a]ll retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." The following year, Executive Order S-21-09 directed CARB, under its AB 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020.

In October 2015, Governor Brown signed SB 350 to codify ambitious climate and clean energy goals. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure "half of the state's electricity from renewable sources by 2030."

The State's RPS program was further strengthened by the passage of SB 100 in 2018. SB 100 revised the State's RPS Program to require retail sellers of electricity to serve 50% and 60% of the total kilowatt-hours sold to retail end-use customers be served by renewable energy sources by 2026 and 2030, respectively, and requires 100% of all electricity supplied come from renewable sources by 2045.

3.2.2.4 Executive Order B-55-18, AB 1279, and SB 1020

On September 10, 2018, Governor Brown signed Executive Order B-55-18, to achieve carbon neutrality by moving California to 100% clean energy by 2045. This Executive Order also includes specific measures to reduce GHG emissions via clean transportation, energy efficient buildings, directing cap-and-trade funds to disadvantaged communities, and better management of the state's forest land.

On September 16, 2022, Governor Newsom signed into law AB 1279, the California Climate Crisis Act, and SB 1020, the Clean Energy, Jobs, and Affordability Act of 2022. AB 1279 codified California's 2045 carbon neutrality goal and established a GHG emission reduction target of 85% below 1990 levels.

⁵ Connect SoCal 2020 anticipated that from 2016 to 2045, approximately 64% of households and 74% of new jobs would occur in PGAs, which comprised approximately 4% of the SCAG region's total land area. Connect SoCal 2024 anticipated that from 2019 to 2050, approximately 66% of household growth and 54% of employment growth would occur in PDAs, which comprise approximately 8.2% the SCAG region's total land area. 36% of household growth was located in more than one priority area and outside environmental constraint areas in Connect SoCal 2020 compared to 39% in Connect SoCal 2024.

SB 1020 set targets for the retail sale of electricity of 90% clean electricity by 2035 and 95% by 2040, and 100% by 2045. It also set a target for 100% clean electricity for electricity serving state agencies by 2035.

3.2.2.5 Sustainable Freight Plan

The Sustainable Freight Plan was adopted by CARB in July 2016, and provides a recommendation on a high-level vision and broad direction to the Governor to consider for State agencies to utilize when developing specific investments, policies, and programs related to the freight transport system that serves our State's transportation, environmental, and economic interests (CARB 2016). The Sustainable Freight Plan includes recommendations on:

- A long-term 2050 vision and guiding principles for California's future freight transportation system.
- Targets for 2030 to guide the State toward meeting the Vision.
- Opportunities to leverage State freight transport system investments.
- Actions to initiate over the next five years to make progress towards the Targets and the Vision.
- Pilot projects to achieve on-the-ground progress in the near-term.
- Additional concepts for further exploration and development, if viable.

3.2.2.6 Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars (ACC) Program (formerly known as Pavley II) for model years 2017-2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the ZEV regulation. The Program combines the control of smog, soot, and global warming gases with requirements for greater numbers of zero-emission vehicles into a single package of standards. By 2025, new automobiles under California's ACC Program will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

Executive Order B-48-18, issued by Governor Brown in January 2018, establishes a target to have five million ZEVs on the road in California by 2030. This Executive Order is supported by the State's 2018 ZEV Action Plan Priorities Update, which expands upon the State's 2016 ZEV Action Plan. While the 2016 plan remains in effect, the 2018 update function as an addendum, highlighting the most important actions State agencies are taking in 2018 to implement the directives of Executive Order B-48-18.

EO N-79-20, issued by Governor Newsom in September 2020, set a goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. It also set a goal that 100 percent of medium- and heavy-duty vehicles in the state be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks. In addition, this EO set a goal to transition to 100 percent zero-emission off-road vehicles and equipment in the state by 2035 where feasible.

In August 2022, CARB approved the Advanced Clean Cars II program, which sets requirements for ZEV sales and codifies the light-duty vehicle goals in EO N-79-20. The regulation requires new light duty vehicle sales will be 35% zero emission or plug in hybrid electric vehicles in 2026, 68% in 2030, and 100% in 2035. In 2025, Congress revoked California's Clean Air Act waiver that allows for the enforcement of the Clean Cars II regulations. In response, in June 2025, Governor Newsom signed Executive Order N-27-25, which reaffirms California's commitment to accelerating zero emission technology consistent with the targets of EO N-79-20. CARB is in the process of developing light-duty vehicle emissions standards consistent with State and federal law (CARB 2025).

3.2.2.7 Advanced Clean Fleets Regulation

On April 28, 2023, CARB approved Advanced Clean Fleets (ACF), a rule that requires fleets of medium- and heavy-duty vehicles to transition to zero-emission vehicles. ACF applies to all drayage trucks, to high priority fleets, (i.e., fleets that have at least \$50 million in gross annual revenue or fleets that operate 50 or more medium- and heavy-duty vehicles), and to government fleets. The regulation places requirements on both the sale and operation of medium- and heavy-duty vehicles. Regarding the sale of vehicles, ACF requires manufacturers to sell only zero-emission medium- and heavy-duty vehicles starting in 2036. For the operation of vehicles, the regulation sets different timelines depending on the type of fleet. New drayage trucks must be zero-emission starting January 1, 2024. Existing diesel-powered drayage trucks may continue to operate until 2035, after which only zero-emission drayage trucks may operate. This structure will be implemented by the CARB Online System, which registers drayage trucks in the State.

High-priority fleets and federal fleets can choose between two options to meet the zero-emission requirements: a Model Year Schedule or a ZEV Milestone schedule. Under the Model Year Schedule, high-priority fleets and federal government fleets would purchase only zero-emission trucks starting in 2024 and would remove internal combustion powered trucks at the end of their useful life starting in 2025. Alternatively, the ZEV Milestone schedule sets requirements for a percentage of the total fleet to be zero-emission at specified years, depending on the type of vehicle. For example, under the ZEV Milestone option, box trucks and yard tractors would need to have zero-emission vehicles consist of 10% of the fleet by 2025, 50% of the fleet by 2031, and 100% by 2035. Specialty vehicles would have a longer timeline, and would need to reach 100% zero-emission vehicles by 2042. State and local government fleets may also choose the ZEV Milestone option. If state and local governments do not choose the ZEV Milestone option, new fleet purchases are required to be 50% zero-emission⁶ starting in 2024 and 100% zero-emission by 2027.⁷

3.2.3 CITY OF LAKE ELSINORE

3.2.3.1 General Plan

The City's proposed GPU contains several goals, policies, and implementation measures related to energy. These include supporting electric vehicles, transit, and active transportation, climate-resilient building and infrastructure standards, increased use of renewable, carbon free and distributed energy resources, and reduced fossil fuel use in new and existing buildings. Please refer to Appendix C for a complete list of goals, policies, and implementation measures regarding energy.

⁶ State and local governments may meet the ACF requirements with near-zero-emission vehicles until 2035. After 2035, only zero-emission vehicle purchases would apply to the requirements.

⁷ If fleets have 10 or fewer vehicles or are in designated counties, zero-emission purchasing requirements would start later, in 2027.

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4 GREENHOUSE GAS SETTING AND REGULATORY FRAMEWORK

This chapter provides information on the environmental and regulatory GHG setting of the proposed GPU. Information on existing GHG conditions, relevant standards, and issues of concern were obtained from the U.S. EPA, CARB, and SCAQMD.

4.1 DEFINING CLIMATE CHANGE

Climate change is the distinct change in measures of climate for a long period of time. Climate change can result from natural processes and from human activities. Natural changes in the climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (i.e. changes in ocean circulation). Human activities can affect the atmosphere through emissions of gases and changes to the planet's surface. Emissions affect the atmosphere directly by changing its chemical composition, while changes to the land surface indirectly affect the atmosphere by changing the way the Earth absorbs gases from the atmosphere. The term "climate change" is preferred over the term "global warming" because "climate change" conveys the fact that other changes can occur beyond just average increase in temperatures near the Earth's surface.

Elements that indicate that climate change is occurring on Earth include, but are not limited to:

- Rising of global surface temperatures by 1.3°F over the last 100 years;
- Changes in precipitation patterns;
- Melting ice in the Arctic;
- Melting glaciers throughout the world;
- Rising ocean temperatures;
- Acidification of oceans; and
- Range shifts in plant and animal species

Climate change is intimately tied to the Earth's greenhouse effect. The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet, and without it, life as we know it on Earth would not exist. Human activities since the industrial revolution (approximately 275 years) have been influencing the natural greenhouse effect by increasing the gases in the atmosphere that "trap" energy, thereby contributing to an average increase in the Earth's temperature. Human activities that enhance the greenhouse effect are detailed below.

4.1.1 GREENHOUSE GASES

Gases that absorb and emit infrared thermal radiation (heat) in the atmosphere and affect regulation of the Earth's temperature are known as greenhouse gases (GHGs). There are many compounds present in the Earth's atmosphere which are GHGs, including but not limited to water vapor (H₂O), carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). GHGs allow solar radiation (sunlight) to enter the atmosphere freely. When solar radiation strikes the earth's surface, it is either absorbed by the atmosphere, land, and ocean surface, or reflected back toward space. The land and ocean surface that has absorbed solar radiation warms up and emits infrared radiation toward space. GHGs absorb some of this infrared radiation and "trap" the energy in the earth's atmosphere. Entrapment of too much infrared radiation produces an effect commonly referred to as the "greenhouse effect." Human activities since the

beginning of the Industrial Revolution (approximately 1750) have increased atmospheric GHG concentrations. Average global surface temperatures have risen as a result of GHG emissions. This increase in globally averaged surface temperatures is commonly referred to as “Global Warming,” although the term “Global Climate Change” is preferred because effects associated with increased GHG concentrations are not just limited to higher global temperatures (NOAA 2023).

GHGs that contribute to climate regulation are a different type of pollutant than criteria or hazardous air pollutants because climate regulation is global in scale, in terms of both causes and effects. Some GHGs are emitted to the atmosphere naturally by biological and geological processes such as evaporation (water vapor), aerobic respiration (carbon dioxide, or CO₂), and off-gassing from low-oxygen environments such as swamps or exposed permafrost (methane or CH₄). However, GHG emissions from human activities such as fuel combustion (e.g., CO₂) and refrigerant use (e.g., hydrofluorocarbons, or HFCs) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change. Human production of GHG has increased steadily since pre-industrial times (pre-1880), and atmospheric CO₂ concentrations have increased from a pre-industrial value of 280 parts per million (ppm) in the early 1800s to approximately 425 ppm in October 2025 (NOAA 2025). The effects of increased GHG concentrations in the atmosphere include increasing shifts in temperature and precipitation patterns and amounts, reduced ice and snow cover, sea level rise, and acidification of oceans. These effects in turn will impact food and water supplies, infrastructure, ecosystems, and overall public health and welfare.

The 1997 United Nations’ Kyoto Protocol international treaty set targets for reductions in emissions of four specific GHGs - CO₂, CH₄, nitrous oxide (N₂O), and sulfur hexafluoride (SF₆), and two groups of gases - HFCs and perfluorocarbons (PFCs). These are the primary GHGs emitted into the atmosphere by human activities. Water vapor is also a common GHG that regulates the Earth’s temperature; however, the amount of water vapor in the atmosphere can change substantially from day to day, whereas other GHG emissions remain in the atmosphere for longer periods of time. Black carbon consists of particles emitted during combustion; although a particle and not a gas, black carbon also acts to trap heat in the Earth’s atmosphere. The most common GHGs are described below.

- **Carbon Dioxide (CO₂).** CO₂ is released to the atmosphere when fossil fuels (oil, gasoline, diesel, natural gas, and coal), solid waste, and wood or wood products are burned.
- **Methane (CH₄).** CH₄ is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic waste in municipal solid waste landfills and the raising of livestock.
- **Nitrous Oxide (N₂O).** N₂O is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels.
- **Sulfur Hexafluoride (SF₆).** SF₆ is commonly used as an electrical insulator in high voltage electrical transmission and distribution equipment such as circuit breakers, substations, and transmission switchgear. Releases of SF₆ occur during maintenance and servicing as well as from leaks of electrical equipment.
- **Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs).** HFCs and PFCs are generated in a variety of industrial processes. Although the amount of these gases emitted into the atmosphere is small in terms of their absolute mass, they are potent agents of climate change due to their high global warming potential.

GHG can remain in the atmosphere long after they are emitted. The potential for a particular greenhouse gas to absorb and trap heat in the atmosphere is considered its global warming potential (GWP). The reference gas for measuring GWP is CO₂, which has a GWP of one. By comparison, CH₄ has a GWP of 28, which means that one molecule of CH₄ has 28 times the effect on global warming as one molecule of CO₂. Multiplying the estimated emissions for non-CO₂ GHG by their GWP determines their CO₂ equivalent (CO₂e), which enables a project's combined GWP to be expressed in terms of mass CO₂ emissions. The GWP and estimated atmospheric lifetimes of the common GHG are shown in Table 4-1.

Table 4-1: Global Warming Potential (GWP) of Common Greenhouse Gases (GHG)

GHG	Lifetime (years)	GWP ^(A)
Carbon Dioxide (CO ₂)	50-200	1
Methane (CH ₄)	12	28
Nitrous Oxide (N ₂ O)	114	265
HFC-23	270	12,400
HFC-134a	14	1,300
HFC-152a	1.4	138
PFC-14	50,000	6,630
PFC-116	10,000	11,100
Sulfur Hexafluoride (SF ₆)	3,200	23,500
Source: IPCC, 2014.		
(A) GWPs are based on the United Nations Intergovernmental Panel on Climate Change (IPCC) 5 th Assessment Report.		

4.1.2 CLIMATE CHANGE AND CALIFORNIA

The 2009 California Climate Adaptation Strategy prepared by the California Natural Resources Agency (CNRA) identified anticipated impacts to California due to climate change through extensive modeling efforts. General climate changes in California indicate that:

- California is likely to get hotter and drier as climate change occurs with a reduction in winter snow, particularly in the Sierra Nevada Mountain Range.
- Some reduction in precipitation is likely by the middle of the century.
- Sea levels will rise up to an estimated 55 inches.
- Extreme events such as heat waves, wildfires, droughts, and floods will increase.
- Ecological shifts of habitat and animals are already occurring and will continue to occur (CNRA, 2009).

It should be noted that changes are based on the results of several models prepared under different climatic scenarios; therefore, discrepancies occur between the projections and the interpretation. The potential impacts of global climate change in California are detailed below.

In January 2018, the CNRA adopted *Safeguarding California Plan: 2018 Update*, which built on nearly a decade of adaptation strategies to communicate current and needed actions the State government should take to build climate change resiliency. It identified hundreds of ongoing actions and next steps that

State agencies are taking to safeguard Californians from climate impacts within a framework of 81 policy principles and recommendations. The 2018 update also had two new chapters and incorporated a feature showcasing the many linkages among policy areas. A new “Climate Justice” chapter highlighted how equity is woven throughout the entire plan (CNRA, 2018). The CNRA updated Safeguarding California with the 2021 California Climate Adaptation Strategy, which focused on the following six priorities:

- Strengthening protections for climate vulnerable communities
- Bolstering public health and safety to protect against increasing climate risks
- Building a climate resilient economy
- Accelerating nature-based climate solutions and strengthen climate resilience of natural systems
- Making decisions based on the best available climate science; and
- Partnering and collaborating to leverage resources

The 2021 update contained goals and actions to address each priority, and integrated climate actions from statewide climate action plans, sector-based strategies, regionally focused strategies, and state stewardship plans. The CNRA released the Draft California Climate Adaptation Strategy in May 2024. The Draft update builds on the priorities and actions of the 2021 California Climate Adaptation Strategy, and includes additional new metrics and actions.

4.1.3 CARBON SEQUESTRATION

Carbon sequestration is the process by which plants absorb CO₂ from the atmosphere and store it in biomass like leaves and grasses. Agricultural lands, forests, and grasslands can all sequester carbon dioxide, or emit it. The key is to determine if the land use is emitting CO₂ faster than it is absorbing it. Young, fast-growing trees are particularly good at absorbing more than they release and are known as a sink. Agricultural resources often end up being sources of carbon release because of soil management practices. Deforestation contributes to carbon dioxide emissions by removing trees, or carbon sinks, that would otherwise absorb CO₂. Forests are a crucial part of sequestration in some parts of the world, but not much in the United States. Another form of sequestration is geologic sequestration. This is a manmade process that results in the collection and transport of CO₂ from industrial emitters (i.e. power plants) and injecting it into underground reservoirs.

4.2 EXISTING STATE GHG EMISSIONS LEVELS

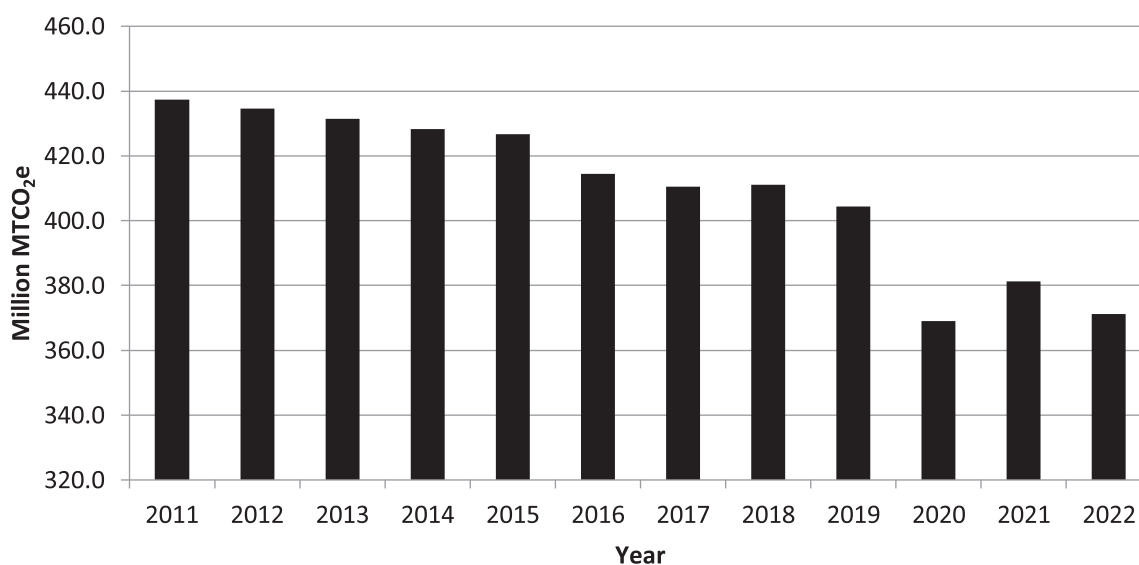
CARB prepares an annual statewide GHG emissions inventory using regional, state, and federal data sources, including facility-specific emissions reports prepared pursuant to the state’s Mandatory GHG Reporting Program (see Section 4.3.2). The statewide GHG emissions inventory helps CARB track progress towards meeting the state’s AB 32 GHG emissions target of 431 million metric tons of CO₂ equivalents (MTCO₂e), as well as establish and understand trends in GHG emissions.⁸

Statewide GHG emissions for the 2011 to 2022 period are shown in Table 4-2. Statewide GHG emissions have generally decreased over the last decade, with 2019 levels (418 million MTCO₂e) approximately 13.6% less than 2008 levels (484 million MTCO₂e) and below the State’s 2020 reduction target of 431 million MTCO₂e. The transportation sector (166 million MTCO₂e) accounted for more than one-third (approximately 40%) of the state’s total GHG emissions inventory (418 million MTCO₂e) in 2019.

⁸ CARB approved use of 431 million MTCO₂e as the state’s 2020 GHG emission target in May 2014. Previously, the target had been set at 427 million MTCO₂e.

Table 4-2: 2011 – 2022 Statewide GHG Emissions (Million MTCO₂e)

Scoping Plan Sector	Year											
	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22
Agriculture	34	35	34	34	33	32	32	32	31	32	31	30
Commercial/Residential	46	39	39	36	37	38	38	38	41	39	39	40
Electric Power	89	99	94	90	86	71	64	65	60	60	62	60
High GWP	15	16	17	18	19	19	20	21	21	21	21	21
Industrial	86	81	83	85	83	81	81	82	81	73	74	73
Recycling and Waste	8	8	8	8	8	8	8	8	8	9	8	8
Transportation	159	157	157	158	161	165	166	165	162	136	146	140
Total Million MTCO₂e^(A)	438	436	432	428	427	414	410	411	404	369	381	371



Source: CARB, 2022a

(A) Totals may not equal due to rounding. CARB inventory uses GWPs based on the United Nations' ICC's 4th Assessment Report.

4.2.1 EXISTING PLANNING AREA GHG EMISSIONS

Please refer to the Greenhouse Gas Emissions Forecast, Targets, and Reduction Measures Memorandum for the City of Lake Elsinore Climate Action and Adaptation Plan memorandum prepared by Ascent for further information regarding the Planning Area 2022 GHG emissions inventory.

4.3 FEDERAL, STATE, AND LOCAL CLIMATE CHANGE REGULATIONS

4.3.1 FEDERAL GHG REGULATIONS

4.3.1.1 U.S. EPA GHG Tailoring Rule and GHG Reporting System

On December 7, 2009, the U.S. EPA issued an endangerment finding that current and projected concentrations of the six Kyoto GHG (CO₂, CH₄, N₂O, SF₆, HFCs, and PFCs) in the atmosphere threaten the public health and welfare of current and future generations. This finding came in response to the Supreme Court ruling in *Massachusetts v. EPA*, which found that GHG are pollutants under the federal Clean Air Act. As a result, the U.S. EPA issued its GHG Tailoring Rule in 2010, which applies to facilities that have the potential to emit more than 100,000 MTCO₂e. In 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA* (No. 12-1146), finding that the U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a permit pursuant to the Clean Air Act's Prevention of Significant Deterioration or Title V operating permit programs. The U.S. EPA's Greenhouse Gas Reporting Program requires facilities that emit 25,000 MTCO₂e or more of GHG to report their GHG emissions to the U.S. EPA to inform future policy decision makers.

On July 29, 2025, the U.S. EPA proposed to rescind the 2009 endangerment finding. Without the endangerment finding, the U.S. EPA would not have the authority to regulate GHG emissions, and therefore the U.S. EPA also proposes to rescind its GHG regulations for light-, medium-, and heavy-duty on-highway vehicles. The proposed rule to rescind the endangerment finding is currently pending.

4.3.2 STATE CLIMATE CHANGE REGULATIONS

4.3.2.1 Executive Order S-3-05

Executive Order S-3-05 was issued by California Governor Arnold Schwarzenegger and established targets for the reduction of greenhouse gas emission at the milestone years of 2010, 2020, and 2050. Statewide GHG emissions must be reduced to 1990 levels by year 2020 and by 80 percent beyond that by year 2050. The Order requires the Secretary of the California Environmental Protection Agency (Cal-EPA) to coordinate with other State departments to identify strategies and reduction programs to meet the identified targets. A Climate Action Team (CAT) was created and is headed by the Secretary of Cal-EPA who reports on the progress of the reduction strategies. The latest CAT Biennial Report to the Governor and Legislature was completed in April 2016.

4.3.2.2 Assembly Bill 32 – California Global Warming Solutions Act and Related GHG Reduction Goals

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Climate Solutions Act of 2006. AB 32 establishes the caps on Statewide greenhouse gas emissions proclaimed in Executive Order S-3-05 and established the timeline for meeting State GHG reduction targets. The deadline for meeting the 2020 reduction target is December 31, 2020.

As part of AB 32, CARB determines 1990 GHG emissions levels and projected a "business-as-usual" (BAU)⁹ estimate for 2020, to determine the amount of GHG emission reductions that would need to be achieved. In 2007, CARB approved a Statewide 1990 emissions level and corresponding 2020 GHG

⁹ BAU is a term used to define emissions levels without considering reductions from future or existing programs or technologies.

emissions limit of 427 million MTCO₂e (CARB, 2007). In 2008, CARB adopted its Climate Change Scoping Plan, which projects 2020 Statewide GHG emissions levels of 596 million MTCO₂e and identifies numerous measures (i.e., mandatory rules and regulations and voluntary measures) that will achieve at least 174 million MTCO₂e of GHG reductions and bring Statewide GHG emissions to 1990 levels by 2020 (CARB, 2009).

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase renewable electricity to 50 percent.
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner.
- Reduce petroleum use in cars and trucks by up to 50 percent.
- Reduce emissions of short-lived climate pollutants.
- Manage farms, rangelands, forests and wetlands to increasingly store carbon.

By directing State agencies to take measures consistent with their existing authority to reduce GHG emissions, Executive Order B-30-15 establishes coherence between the 2020 and 2050 GHG reduction goals set by AB 32 and seeks to align California with the scientifically established GHG emissions levels needed to limit global warming below two degrees Celsius.

To reinforce the goals established through Executive Order B-30-15, Governor Brown went on to sign SB 32 and AB 197 on September 8, 2016. SB 32 made the GHG reduction target (to reduce GHG emissions by 40 percent below 1990 levels by 2030) a requirement, as opposed to a goal. AB 197 gives the Legislature additional authority over CARB to ensure the most successful strategies for lowering emissions are implemented, and requires CARB to, “protect the State’s most impacted and disadvantaged communities ...[and] consider the social costs of the emissions of greenhouse gases.”

On September 16, 2022, Governor Newsom signed into law AB 1279, the California Climate Crisis Act, that codified California’s 2045 carbon neutrality goal and established a GHG emission reduction target of 85% below 1990 levels by 2045.

4.3.2.3 Scoping Plan

The CARB Scoping Plan is the comprehensive plan primarily directed at identifying the measures necessary to reach the GHG reduction targets stipulated in AB 32. The key elements of the 2008 Plan were to expand and strengthen energy efficiency programs, achieve a Statewide renewable energy mix of 33 percent, develop a cap-and-trade program with other partners (including seven States in the United States and four territories in Canada) in the Western Climate Initiative, establish transportation-related targets, and establish fees (CARB, 2009). CARB estimated that implementation of these measures will achieve at least 174 million MTCO₂e of reductions and reduce Statewide GHG emissions to 1990 levels by 2020 (CARB, 2009).

On February 10, 2014, CARB released the public draft of the “First Update to the Scoping Plan.” “The First Update” built upon the 2008 Scoping Plan with new strategies and recommendations, and identified opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. “The First Update” defined CARB’s climate change priorities over the next five years, and set the groundwork to reach post-2020 goals set forth in Executive Orders S-3-05 and B-16-12. It also highlighted California’s progress toward meeting the

2020 GHG emission reduction goals defined in the 2008 Scoping Plan. “The First Update” evaluated how to align the State’s long-term GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. “The First Update” to the Scoping Plan was approved by the Board on May 22, 2014.

The second update to the scoping plan, the *2017 Climate Change Scoping Plan Update* (CARB, 2017), was adopted by CARB in December 2017. The primary objective for the *2017 Scoping Plan Update* is to identify the measures required to achieve the mid-term GHG reduction target for 2030 (i.e., reduce emissions by 40 percent below 1990 levels by 2030) established under Executive Order B-30-15 and SB 32. The *2017 Scoping Plan Update* identifies an increased need for coordination among State, Regional, and local governments to realize the potential for GHG emissions reductions that can be gained from local land use decisions.

The third update to the scoping plan, the *2022 Scoping Plan* (CARB 2022b), was released in May 2022 and adopted by CARB in December 2022. The plan presents a scenario for California to meet the State goal of reducing GHG emissions 40% below 1990 levels by 2030 and to achieve carbon neutrality by 2045 (CARB 2022b). Specifically, the *2022 Scoping Plan*:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California’s dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California’s most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands (NWL) to the state’s GHG emissions, as well as their role in achieving carbon neutrality.
- Relies upon the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits taking action.
- Identifies key implementation actions to ensure success.

Unlike the previous scoping plans, the *2022 Scoping Plan* relies more heavily on the implementation, adoption, and use of existing technologies to reduce GHG emissions over the coming decades, as opposed to technologies that need to be developed. Examples of existing technologies the *2022 Scoping Plan* relies upon include the use of renewable energy and energy storage systems (as opposed to polluting alternatives) for the electrical grid and transitioning the transportation sector’s mobile sources to zero-emission technologies for light- and heavy-duty vehicles. The *2022 Scoping Plan* also differs from its predecessors in that it takes into account carbon sources and sinks from California’s NWL and identifies the need for active carbon capture and sequestration (CCS) technologies for some emissions sectors, such as petroleum refining and the production / processing of stone, clay, glass, and cement.

The continued implementation of existing plans, policies, and regulations adopted for the purposes of reducing GHG emissions remain critical for achieving the State’s 2030 and 2045 GHG reduction goals. For example, the *2022 Scoping Plan* identifies a goal of achieving a per capita VMT reduction of at least 25 percent below 2019 levels by 2030 and a 30 percent below 2019 levels by 2045, which is related to the

implementation of SB 375 and recommendations provided by the Scoping Plan's Environmental Justice Advisory Committee. The *2022 Scoping Plan* also acknowledges that, "local governments are also frequently the sources of innovative and practical climate solutions that can be replicated in other areas. Their efforts to reduce GHG emissions within their jurisdictions are vital to achieving the state's near-term air quality and long-term climate goals... and can also provide important co-benefits such as improved air quality, local economic benefits, healthier and more sustainable communities, and improved quality of life" (CARB 2022b).

4.3.2.4 Low Carbon Fuel Standard Regulation

CARB initially approved the LCFS regulation in 2009, identifying it as one of the nine discrete early action measures in the 2008 Scoping Plan to reduce California's GHG emissions. The LCFS regulation is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. The LCFS regulation defines a Carbon Intensity, or "CI," reduction target (or standard) for each year, which the rule refers to as the "compliance schedule."

The LCFS regulation initially required a reduction of at least 10 percent in the CI of California's transportation fuels by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. The 2015 rulemaking included many amendments, updates, and improvements to the program, including a compliance schedule that maintained the 2009 LCFS regulation's target of a 10 percent reduction in average carbon intensity by 2020 from a 2010 baseline. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector (CARB, 2020).

4.3.2.5 Senate Bill 350 (Clean Energy & Pollution Reduction Act) and Senate Bill 100

In October 2015, Governor Brown signed SB 350 to codify ambitious climate and clean energy goals. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure "half of the state's electricity from renewable sources by 2030."

The State's RPS program was further strengthened by the passage of SB 100 in 2018. SB 100 revised the State's RPS Program to require retail sellers of electricity to serve 50% and 60% of the total kilowatt-hours sold to retail end-use customers be served by renewable energy sources by 2026 and 2030, respectively, and requires 100% of all electricity supplied come from renewable sources by 2045.

4.3.2.6 Assembly Bill 1493

With the passage of AB 1493 (Pavley I) in 2002, California launched an innovative and proactive approach for dealing with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards apply to automobiles and light trucks from 2009 through 2016. Although litigation was filed challenging these regulations and the U.S. EPA initially denied California's related request for a waiver, a waiver was granted. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 among light-duty vehicles.

In January 2012, CARB approved the Advanced Clean Cars (ACC) program (formerly known as Pavley II) for model years 2017 through 2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the ZEV regulation. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards.

4.3.2.7 Executive Order B-30-15, Senate Bill 32, Assembly Bill 197 (Statewide Interim GHG Targets)

California EO B-30-15 (April 29, 2015) set an “interim” statewide emission target to reduce greenhouse emissions to 40% below 1990 levels by 2030, and directed state agencies with jurisdiction over GHG emissions to implement measures pursuant to statutory authority to achieve this 2030 target and the 2050 target of 80 percent below 1990 levels. Specifically, the EO directed CARB to update the Scoping Plan to express this 2030 target in metric tons. AB 197 (September 8, 2016) and SB 32 (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40% below 1990 levels by 2030 as detailed in EO B-30-15. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-55-18

Governor Brown issued EO B-15-18 on September 10, 2018, which directs the State to achieve carbon neutrality as soon as possible and no later than 2045, and achieve and maintain net negative emissions thereafter.

4.3.3 CITY OF LAKE ELSINORE

4.3.3.1 General Plan

The City’s proposed GPU contains several goals, policies, and implementation measures related to GHG. These include supporting electric vehicles, transit, and active transportation, increased use of renewable, carbon free and distributed energy resources, capture and sequester more carbon, and reduce community-wide and municipal GHG emissions. Please refer to Appendix C for a complete list of goals, policies, and implementation measures regarding GHG.

4.3.3.2 Climate Action and Adaption Plan

Please refer to the Greenhouse Gas Emissions Forecast, Targets, and Reduction Measures Memorandum for the City of Lake Elsinore Climate Action and Adaptation Plan memorandum prepared by Ascent for further information regarding the GHG Strategies Summary and Analysis of Targets Attainment.

5 ENERGY IMPACT ANALYSIS

This chapter evaluates the direct and indirect energy impacts that could result from implementation of the proposed GPU.

5.1 THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, the proposed GPU could result in potentially significant impacts related to energy resources if it would:

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

5.2 ANALYSIS METHODOLOGIES

The proposed GPU would not directly result in the construction or operation of any specific project; however, the proposed GPU's land use plan allows for new residential and nonresidential development projects. Energy consumption for electricity and natural gas was estimated by Ascent as part of the CAAP development process (Ascent 2025, see Attachment A). Energy consumption estimates used growth scaling factors (e.g., population and employment) and activity growth factors (e.g., electricity consumption per housing unit), and incorporated adjustments for legislation and Title 24 Energy Standards (Ascent 2025). Off-road fuel was estimated by Ascent using CARB's Off-Road Web Query Tool for Riverside County and scaling to the Planning Area. On-road fuel was estimated by MIG using EMFAC Model 2025 (Version 2.0.0) and the boundary-based VMT estimated by Fehr & Peers (see Attachment A).

5.3 WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES

5.3.1 CONSTRUCTION ENERGY CONSUMPTION

Electricity Use. Temporary electric power would be required at various construction sites throughout the city as growth occurs under GPU. Electricity would be consumed by lighting and electronic equipment (e.g., computers) located in trailers used by construction crews, and by small, off-road equipment (e.g., compressors) used during development activities. However, the electricity used for such activities would be temporary and would have a negligible contribution to the overall energy consumption in the Planning Area.

Natural Gas Use. Substantial natural gas consumption is not anticipated to occur during construction activities that could occur with GPU implementation. Fuels used for construction would generally consist of diesel and gasoline, which are discussed below. Potential natural gas use during construction activities associated with GPU growth would not substantially contribute to overall energy consumption in the Planning Area, and would not be unnecessary, inefficient, or wasteful.

Diesel and Gasoline Fuel Use. Diesel and gasoline fuels, also referred to as petroleum in this subsection, would be consumed during construction activities as the city grows under the GPU. Fuel use by construction equipment would be the primary energy resource consumed during development activities, and VMT associated with the transportation of construction materials (e.g., deliveries) and worker trips would also result in petroleum consumption. Whereas on-site, heavy-duty construction equipment and delivery trucks

would predominantly use diesel fuel, construction workers would generally rely on gasoline-powered vehicles to travel to and from construction sites. State regulations such as the Low Carbon Fuel Standard would reduce the carbon intensity of transportation-related fuels, and all construction projects would be required to comply with CARB's Airborne Toxic Control Measures, which restrict heavy-duty diesel vehicle idling to five minutes. Since petroleum use during construction would be temporary at each location and required to conduct development activities, it would not be unnecessary, wasteful, or inefficient.

As summarized above, the proposed GPU would not result in the unnecessary, inefficient, or wasteful use of energy resources during construction activities. This would be a **less than significant impact**.

5.3.2 OPERATIONAL ENERGY CONSUMPTION ESTIMATES

Electricity and natural gas consumption was estimated by Ascent as part of the CAAP development. Development facilitated under the GPU would require electricity for multiple uses, including, but not limited to: building heating and cooling, lighting, appliance use (e.g., washer, dryer, microwave, etc.), and other electronics (e.g., televisions). Table 5-1 summarizes changes in electricity consumption that would occur over the next approximately 20 years of growth envisioned by the GPU.

Table 5-1: Operational Change in Building Sector Electricity Consumption (2022 vs. 2045)

Metric	Electricity Consumption (MWh/yr)		
	2022	2045 ^(A)	Change
Total Electricity Consumption	415,252	849,931	+434,679
Service Population (SP) ^(B)	106,607	192,687	+86,080
Electricity Consumption Efficiency (MWh/yr/SP)	3.9	4.4	+0.5
Source: Ascent 2025 (see Table A-9)			
(A)The 2045 conditions represent legislative-adjusted conditions under the GPU growth forecast, without consideration of the CAAP measures (Ascent 2025).			
(B)Service population is the sum of the number of residents and number of jobs in the Planning Area.			

As shown in Table 5-1, electricity consumption from the building sector¹⁰ in the Planning Area is expected to more than double (i.e., a 105% increase or an increase of approximately 434,679 MWh/yr) in 2045 when compared to 2022 conditions; however, on an efficiency basis, electricity consumption would only increase by approximately 13% from 3.9 MWh/yr/Service Population (SP) to 4.4 MWh/yr/SP. Although growth would be occurring within the Planning Area under the GPU, new development and land use turnover would be required to comply with statewide mandatory energy requirements outlined in Title 24, Part 6 and 11, which would decrease estimated electricity consumption in new and/or retrofitted structures. In addition, the GPU contains policies that would promote energy efficiency, such as:

- Policy COSP-37: Reduce energy use and increase energy efficiency in existing and new residential, commercial, industrial, and public structures.
- Implementation Action PRO-COSP-2: Update local codes to incentivize building owners to upgrade residential appliances, including water and space heaters, to increase energy efficiency

¹⁰ In addition to electricity consumption from the building sector, approximately 54,509 MWh of electricity would be required for water and wastewater in 2045 under business-as-usual conditions (Ascent 2025, see Table A-5). Since the 2022 data for electricity consumption from the water and wastewater sectors is not available, it is not included in the analysis.

- Implementation Action PRO-COSP-3: Evaluate and adopt changes to the building code or other municipal codes and policies to decarbonize the building stock while also maximizing energy efficiency.
- Implementation Action PRO-COSP-30: Identify incentives to encourage new buildings to exceed State energy efficiency requirements and/or meet or exceed the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) Program or equivalent standards.
- Implementation Action PRO-COSP-33: Develop new and retrofit existing City facilities to be zero net energy
- Implementation Action PRO-COSP-39: Require regular energy audits of existing City-owned and operated structures, identifying levels of existing energy use and potential conservation and efficiency measures.
- Implementation Action PRO-COSP-52: Provide information on the cost savings potential and other benefits of energy audits and energy-efficient retrofits to encourage their preparation for buildings throughout the city.
- Implementation Action PRO-COSP-53: Use education and incentives to promote and sustain energy conserving design and practices.

For these reasons, the electrical energy that would be consumed by the proposed GPU is not considered unnecessary, inefficient, or wasteful.

Natural gas consumption from development associated with the GPU would be required for various purposes, such as space and water heating in buildings. Table 5-2 summarizes estimated changes in natural gas consumption over the next approximately 20 years of growth envisioned by the GPU.

Table 5-2: Operational Change in Building Sector Natural Gas Consumption (2022 vs. 2045)

Metric	Natural Gas Consumption (Therms)		
	2022	2045 ^(A)	Change
Total Natural Gas Consumption	10,980,232	11,741,987	+761,755
Service Population (SP)	106,607	192,687	+86,080
Natural Gas Consumption Efficiency (Therms/yr/SP)	103.0	60.9	-42.1
Source: Ascent 2025 (see Table A-9)			
(A) The 2045 conditions represent legislative-adjusted conditions under the GPU growth forecast, without consideration of the CAAP measures (Ascent 2025).			

Based on the demand calculations shown in Table 5-2, natural gas consumption from the building sector of the Planning Area is expected to increase by approximately seven percent in 2045 (i.e., approximately 761,755 therms as compared to 2022 conditions.¹¹ On an efficiency basis, however, natural gas consumption is estimated to decrease by approximately 41% from 103.0 therms/yr/SP to 60.9 therms/yr/SP percent.

Although growth would occur within the Planning Area over the next approximately 20 years, new development and land use turnover would be required to comply with statewide mandatory energy requirements outlined in Title 24, Part 6 and 11, which would decrease the rate at which natural gas

¹¹ In addition to electricity consumption from the building sector, approximately 198,533 gallons of natural gas would be required for off-road equipment in 2045 under business-as-usual conditions (Ascent 2025, see Table A-3). Since the 2022 data for natural gas consumption from off-road vehicles is not available, it is not included in the analysis.

consumption would occur in new and/or retrofitted structures (compared to older buildings that were built to prior building code standards that are less energy efficient). In addition, the GPU contains policies that would reduce natural gas consumption, such as:

- Policy COSP-37: Reduce energy use and increase energy efficiency in existing and new residential, commercial, industrial, and public structures
- Policy COSP-39: Reduce the use of fossil fuels as an energy source in new and existing buildings.
- PRO-COSP-29: Identify incentives and other means to encourage new and existing buildings to include battery energy storage systems, especially buildings with solar energy installations and municipal buildings that provide essential community services.
- PRO-COSP-31: Seek and identify resources to assist low-income homeowners and small business owners with identifying financing options for installation of rooftop solar energy systems, energy storage, and electrification of existing buildings.

For these reasons, natural gas consumption by proposed land uses in the GPU is not considered to be unnecessary, inefficient, or wasteful.

Vehicle fuel consumption associated with GPU implementation would occur over the next approximately 20 years and would primarily be attributable to people traveling to or from the city for work, shopping, school, or other reasons. The amount of diesel and gasoline vehicle fuel consumption from on-road vehicles¹² in the Planning Area under existing 2025 and forecasted 2045 growth conditions were estimated using VMT data modeled by Fehr & Peers and fuel efficiency data from EMFAC2025 are shown in Table 5-3.

Table 5-3: Estimated Vehicle Fuel Consumption Changes (2025 vs. 2045)

Fuel / Metric	2025	2045 ^(A)	Change ^(B)
Total Fuel Consumption			
Total Diesel Consumption (gal/yr)	45,475,596	34,460,409	-11,015,187
Total Gasoline Consumption (gal/yr)	81,402,588	19,987,202	-61,415,386
Total Electricity Consumption (MWh/yr)	55,171	1,279,532	1,224,362
Fuel Consumption per Service Population			
Service Population	104,235	192,687	+88,452
Diesel Consumption Efficiency (gal/yr/SP)	436	179	-257
Gasoline Consumption Efficiency (gal/yr/SP)	781	104	-677
Electricity Consumption Efficiency (MWh/yr/SP)	0.5	6.6	+6.1
Source: Fehr & Peers 2025, MIG, 2026 (See Appendix G)			
(A) The 2045 conditions represent legislative-adjusted conditions under the GPU growth forecast, without consideration of the CAAP measures (Ascent 2025).			
(B) Totals may not equal due to rounding.			

As shown in Table 5-3, annual on-road diesel and gasoline fuel consumption in 2045 with the GPU is anticipated to be approximately 34,460,409 and 19,987,202 gallons, respectively, while annual electricity

¹² In addition to fuel consumption from on-road vehicles, approximately 3.3 million gallons of diesel, 635 thousand gallons of gasoline would be required for off-road equipment in 2045 under business-as-usual conditions (Ascent 2025, see Table A-3). Out of the total diesel and gasoline values from off-road vehicles, approximately 468 thousand gallons of diesel and 7.6 thousand gallons of gasoline would be attributable to construction and mining equipment. Since the 2022 data for diesel and gasoline consumption from off-road vehicles is not available, it is not included in the analysis.

consumption is anticipated to be approximately 1,279,532 MWh. Compared to 2025, this represents approximately 11,015,187 fewer gallons of diesel fuel consumed annually, approximately 61,415,386 fewer gallons of gasoline fuel consumed annually, and approximately 1,224,362 more MWh of electricity consumed annually.¹³ On a service population basis, overall diesel and gasoline consumption is expected to decrease by approximately 59% and 87% respectively (from 436 gallons of diesel/yr/SP and 781 gallons of gasoline/yr/SP in 2025 to 179 gallons of diesel/yr/SP and 104 gallons of gasoline/yr/SP in 2045). In contrast, overall electricity consumption is expected to increase by approximately 1,155% (from 0.5 MWh/yr/SP in 2025 to 6.6 MWh/yr/SP in 2045). Total petroleum consumption and consumption per service population would decrease under the proposed GPU. This reduction is primarily associated with mandated increases in fuel efficiency and fleet turnover, as well as efforts to support and accelerate the number of plug-in hybrids and ZEVs in California. In addition, the GPU land use plan includes increased density, which typically generates lower amounts of vehicle trips and VMT, while GPU policies and CAAP strategies promote alternative transportation modes that also decrease gasoline fuel consumption.

The increase in electricity consumption per service population is associated with the projected increase in EV usage and additional EV infrastructure which is in line with the state's ZEV goals. The increase in EVs and decrease in petroleum usage would have a beneficial effect in terms of energy consumption because, as state regulations require an increasing share of renewable and carbon free electricity. Vehicle fuel consumption as part of operation of the proposed GPU would not be considered unnecessary as the GPU would include additional housing to meet the needs of the Planning Area. As described above, fuel consumption would become more efficient over time and, as the state transitions to EVs, would utilize renewable or carbon-free energy. Therefore, vehicle fuel consumption would not be inefficient or wasteful.

The consumption of diesel, gasoline, electric, and natural gas in buildings and vehicles would be necessary for the safe, secure, and functional operation of sustainable and balanced residential and non-residential land use activities. The GPU supports redevelopment of existing land uses with newer, more efficient development. Additionally, the GPU supports higher density development that reduces VMT and fuel consumption as compared to other types of development and contains policies that support energy efficiency and VMT reduction. As shown in the above efficiency metrics, the use of energy resources in the Planning Area would become more efficient over time with the growth and change in land uses envisioned by the GPU and the application of more stringent regulations that reduce energy usage. For these reasons, electricity, natural gas, and vehicle fuel consumption by proposed land uses in the GPU is not considered to be unnecessary, inefficient, or wasteful. This impact is considered **less than significant**.

5.4 CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY

The GPU would not conflict with nor obstruct a state or local plan adopted for the purposes of increasing renewable energy or energy efficiency. The Title 24 Building Code contains energy efficiency standards for residential and non-residential buildings. These standards address electricity and natural gas efficiency in lighting, water, heating, and air conditioning, as well as the effects of the building envelope (e.g., windows, doors, walls, and roofs, etc.) on energy consumption. The latest update to these standards, codified in the 2025 Title 24 Building Code, establishes mandatory standards that apply to various building systems, components, and uses. The City would enforce the 2025 Title 24 Building Code during design review and project approval processes. Other state plans, such as increasing the RPS portfolio, and increasing fuel

¹³ These estimates are based on average fuel economy and VMT per fuel type in Riverside County during the 2025 and 2045 calendar years.

efficiency and the number of electric vehicles on the road, would be implemented at the state level. The GPU would not impede the implementation of any of these actions.

Additionally, the CAAP would align with state plans to reduce GHG emissions, in part through renewable energy. The CAAP projects it would achieve its 2030 and 2045 GHG targets, which are based on SB 32 and AB 1279, respectively, and consistent with the 2017 and 2022 Scoping Plans. Policies for renewable energy and energy efficiency (e.g., BE-1: Energy Efficiency and Decarbonization, BE-2: Renewable Energy and BE-3: Energy Education) contribute to this consistency.

Since the GPU would comply with applicable State standards and would not impede any plan related to increasing renewable energy or energy efficiency, this impact would be **less than significant**.

6 GREENHOUSE GAS IMPACT ANALYSIS

This chapter evaluates the GHG impacts that could result from implementation of the proposed GPU. Unlike air quality, which is influenced by local and regional factors and is therefore considered on the local or regional scale, the effects of global climate change are the result of GHG emissions worldwide; individual projects do not generate enough GHG emissions to influence global climate change. Thus, the analysis of GHG emissions is by nature a cumulative analysis focused on whether an individual project's contribution to global climate change is cumulatively considerable.

6.1 THRESHOLDS OF SIGNIFICANCE

In accordance with Appendix G of the State CEQA Guidelines, a project could result in a potentially significant GHG impact if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or;
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG; or

The following sections provide context for the evaluation of the GPU's GHG emissions and identify the specific thresholds of significance used in this Report.

In order to provide guidance to local lead agencies on determining the significance of GHG emissions in their CEQA documents, the SCAQMD convened the first GHG Significance Threshold Working Group (Working Group) meeting on April 30, 2008 (SCAQMD 2008). To date, the Working Group has convened a total of 15 times, with the last meeting taking place on September 28, 2010 (SCAQMD 2010). Based on the last Working Group meeting, the SCAQMD identified an interim, tiered approach for evaluating GHG emissions intent on capturing 90 percent of development projects where the SCAQMD is not the lead agency. The following describes the basic structure of the SCAQMD's tiered, interim GHG significance thresholds:

Tier 1 consists of evaluating whether or not the project qualifies for applicable CEQA exemptions.

Tier 2 consists of determining whether or not a project is consistent with a greenhouse gas reduction plan. If a project is consistent with a greenhouse gas reduction plan, it would not have a significant impact.

Tier 3 consists of using screening values at the discretion of the Lead Agency; however, the Lead Agency should be consistent for all projects within its jurisdiction. The following thresholds were proposed for consideration:

- a. 3,000 MTCO₂e/yr for all land use types; or
- b. 3,500 MTCO₂e/yr for residential; 1,400 MTCO₂e/yr for commercial; 3,000 MTCO₂e/yr for mixed use projects.

Tier 4 has three options for projects that exceed the screening values identified in Tier 3:

Option 1: Reduce emissions from business-as-usual by a certain percentage (currently undefined).

Option 2: Early implementation of applicable AB 32 Scoping Measures.

Option 3: For plan-level analyses, analyze a project's emissions against an efficiency value of 6.6 MTCO₂e/yr/SP by 2020 and 4.1 MTCO₂e/yr/SP by 2035. For project-level analyses, analyze a project's emissions against an efficiency value of 4.8 and 3.0 MTCO₂e/yr/SP for the 2020 and 2035 calendar years, respectively.

The GPU plans for growth through 2045, ten years after the SCAQMD's latest Tier 4 interim efficiency target year (2035) identified above. Therefore, to evaluate the GPU's GHG emissions against future GHG reduction goals, the plan-level efficiency target has been adjusted based on the anthropogenic GHG reduction targets of AB 1279, which sets a target of 85% below 1990 levels by 2045. The resulting, interpolated efficiency target for the year 2045 is 1.0 MTCO₂e/yr/SP.

6.2 GHG EMISSIONS QUANTIFICATION METHODOLOGY

The proposed GPU would not directly result in the construction or operation of any specific project; however, the proposed GPU's land use plan allows for new residential and nonresidential development projects. GHG emissions under existing, 2030, and 2045 conditions were estimated by Ascent as part of the CAAP development process. Emissions forecasts were adjusted based on growth scaling factors and existing legislation (Ascent 2025, see Attachment A).

6.3 PROJECT GHG EMISSIONS

6.3.1 GHG EMISSIONS ESTIMATES

Construction Impacts. The growth from implementation of the GPU would result in construction activities that would generate GHG emissions primarily from fuel combustion in equipment during demolition, site preparation, grading, building construction, paving, and architectural coating activities and in worker, vendor, and haul trips to and from future development projects. Construction activities would occur intermittently at different sites within the Planning Area over the next approximately 20 years. Construction activities would cease to emit GHG upon completion, unlike operational emissions that would be continuous year after year until the project is decommissioned. As described under Impact AQ-2, the timing and methods of construction activities that would occur for future development projects is unknown. Due to these unknown variables, construction emissions were not estimated for the proposed GPU. However, construction equipment was incorporated into the off-road vehicle and equipment sector of Ascent's emissions forecasts (see Table 6-1 below).

Operational Impacts. Growth from the GPU would result in additional operational GHG emissions, primarily from mobile and energy sources, with off-road vehicles, solid waste, water, and wastewater also contributing to GHG emissions. Potential operational GHG emissions resulting from operation of the land uses proposed by the GPU were estimated

Ascent prepared the Planning Area's emissions forecasts for 2030 and 2045 under business-as-usual conditions (i.e., without the implementation CAAP GHG reduction strategies, but under GPU growth projections), as shown in Table 6-1 below. These emissions forecasts include adjustments for legislation that would reduce GHG emissions, such as fuel efficiency standards and renewable electricity requirements (Ascent 2025, see Table 5).

Table 6-1: Legislative-Adjusted Business-as-Usual Scenario Forecast Results

Sector	2030 Emissions (MTCO ₂ e)	2045 Emissions (MTCO ₂ e)
On-road transportation	258,720	86,072
Building energy	130,739	51,908
Off-road vehicles and equipment	23,380	35,938
Solid waste	24,090	33,439
Water	6,931	0
Wastewater	580	622
Total	444,439	207,979
Service Population	135,891	192,687
MTCO₂e/yr/SP	3.3	1.1
Source: Ascent 2025, see Table 4		

As shown in Table 6-1 above, the legislative-adjusted business-as-usual GHG emissions would exceed the interpolated efficiency target for the year 2045 is 1.0 MTCO₂e/yr/SP. However, the CAAP includes GHG reduction strategies, shown below in Table 6-2, and their associated GHG reductions.

Table 6-2: CAAP GHG Reductions by Strategy (MTCO₂e/year)

Strategy	Measure Number	Measure Name	2030	2045
Building Energy				
BE-1: Energy Efficiency and Decarbonization	BE-1.1	Encourage building operations that minimize electricity use.	5,207 (9%)	38,726 (26%)
	BE-1.2	Support efforts to reduce energy burden and track energy consumption.		
	BE-1.3	Develop building performance standards that adhere to or go beyond CALGreen Tier 1 values.		
	BE-1.4	Retrofit existing residential and non-residential buildings to use electric heating and cooling technology.		
	BE-1.5	Replace fixtures with energy efficient options.		
BE-2: Renewable Energy	BE-2.1	Facilitate the transition of residential electricity use to 100% renewable energy sources.	31,430 (52%)	0 (0%)
BE-3: Energy Education	BE-3.1	Develop educational campaigns and programs that inform community members about renewable energy and electrification benefits and opportunities.	Not quantified	Not quantified
Sector Sub-Total			36,547	38,726
Transportation				
TR-1: Active Transportation	TR-1.1	Expand active transportation infrastructure by implementing the infrastructure, programmatic, and policy recommendations included in the Active LE Plan.	110 (<1%)	451 (<1%)

Strategy	Measure Number	Measure Name	2030	2045
TR-2: Transit	TR-2.1	Increase opportunities for residents to access alternative transportation and reduce financial barriers to transit ridership.	1,588 (3%)	2,399 (2%)
	TR-2.2	Upgrade transit facilities and operations to better accommodate residents.		
TR-3: Zero-Emission Vehicles and Equipment	TR-3.1	Increase the adoption of EV's through financial incentives and vehicle replacement policies.	0 (0%)	78,322 (52%)
	TR-3.2	Expand EV charging infrastructure.		
	TR-3.3	Transition away from fossil-fuel powered equipment.		
TR-4: Smart Growth	TR-4.1	Encourage smart-growth strategies that increase connectivity and density.	853 (1%)	1,254 (1%)
	TR-4.2	Reduce the space dedicated to vehicles.		
Sector Sub-Total			2,551	82,426
Water				
W-1: Water Conservation	W-1.1	Reduce water consumption through regulation and assisting residents to upgrade to efficient fixtures.	7 (<1%)	0 (0%)
	W-1.2	Increase awareness of water loss through education and audits.		
	W-1.3	Replace lawn irrigation equipment to prevent water loss.		
W-2: Recycled Water	W-2.1	Encourage the use of recycled water by increasing access to recycled water systems and informational materials.	849 (1%)	0 (0%)
Sector Sub-Total			856	0
Solid Waste				
SW-1: Recycling and Composting	SW-1.1	Increase the diversion of organic waste for commercial, residential, and municipal facilities.	20,475 (34%)	29,856 (20%)
	SW-1.2	Support the use of sustainable materials.		
	SW-1.3	Expand access to recycling and compost materials and programs.		
	SW-1.4	Enable the proper disposal of non-organic waste.		
SW-2: Local Produce	SW-2.1	Improve access to local healthy produce.	Not quantified	Not quantified
Sector Sub-Total			20,475	29,856

Strategy	Measure Number	Measure Name	2030	2045
Green Community				
GC-1: Green Jobs	GC-1.1	Enhance economic resilience by investing in green job development.	Not quantified	Not quantified
GC-2: Urban Tree Canopy	GC-2.1	Expand urban canopy to reduce the urban heat island effect.	133 (<1%)	323 (<1%)
GC-3: Green Construction Materials	GC-3.1	Reduce emissions associated with construction by requiring materials be low-carbon or recycled.	Not quantified	Not quantified
Sector Sub-Total			133	323
Total GHG Reductions			60,653	151,331
Source: Ascent 2025				

Additionally, Fehr & Peers analyzed vehicle miles traveled (VMT) reduction measures in support of the CAAP. The reduction estimates were quantified using the RIVCOM model and the calculation methodologies in the California Air Pollution Control Officers Association's (CAPCOA's) Handbook for Analyzing Greenhouse Gas Emission Reduction, Assessing Climate Vulnerabilities, and Advancing Health and Equity (Ascent 2025, see Attachment C) The VMT measures are listed below:

- Measure AT.1: End of Trip Bike Facilities
- Measure LU.1: Increase Residential Density
- Measure LU.2: Increase Job Density
- Measure LU.4: Integrate Affordable Housing Development
- Measure RD.2: Improved Pedestrian Network
- Measure CM.1: Commute Trip Reduction Program (Voluntary)
- Measure CM.3: Commute Trip Reduction Marketing
- Measure CM.4: Employee Ridesharing Program
- Measure CM.5: Employee Vanpool
- Measure PT.1: Subsidized Transit Pass Program
- Measure PT.2: Expanded Local Transit Coverage
- Measure PT.3: Expanded Local Transit Frequency
- Measure ND.1: Community-Based Travel Planning
- Measure PT.6: Provide Transit Shelters
- Measure PT.7: Park and Ride Expansion
- Measure RD.1: Improve Bike Facilities

The above VMT measures have the potential to reduce VMT by approximately 16,447 to 32,881 VMT/day by 2030 and by approximately 25,897 to 51,889 VMT/day by 2045, which would reduce GHG emissions from mobile source emissions.

Table 6-3: GHG Emissions with Implementation of GHG Strategies

Sector	2022	2030	2045
On-road transportation	280,785	256,169	31,916
Building energy	162,526	99,309	13,182
Off-road vehicles and equipment	19,336	22,259	7,668
Solid waste	18,224	3,615	3,583
Water	6,982	580	622
Wastewater	487	5,608	0
Total Emissions	488,339	387,540	56,971
Emissions removals through increased carbon sequestration	0	-133	-323
Effective total emissions, including carbon sequestration reductions	488,339	387,407	56,648
Percent Change from 2022 Levels	N/A	-21%	-88%
Efficiency Threshold Comparison			
Service Population	106,607	135,891	192,687
MTCO₂e/yr/SP	4.6	2.9	0.3
Meets Efficiency Threshold?	N/A	N/A	Yes
Comparison of Projected GHG Emissions to CAAP Targets			
CAAP Target Emissions Levels	N/A	388,224	57,278
CAAP Targets (percent reduction from 2022 levels)	N/A	21%	88%
Difference between CAAP Targets and GHG Emissions with Implementation of GHG Strategies	N/A	-4,438	-630
Target Met?	N/A	Yes	Yes
Source: Ascent 2025			

As shown in Table 6-3 above, with the incorporation of the CAAP GHG reduction strategies, the GPU would not exceed the 1.0 MTCO₂e/yr/SP efficiency threshold for 2045 and would achieve an 88% reduction in GHG emissions compared to existing (2022) conditions. However, the timing of development under the GPU is uncertain and the implementation of the GHG reduction strategies cannot be guaranteed to align with the projects that would occur under the GPU. Because of this uncertainty, Impact GHG-1 is considered a **potentially significant impact** that requires mitigation.

6.3.1.1 GHG Emissions Mitigation Measures

To reduce the proposed Project's potential operational GHG emissions levels, MIG recommends the proposed Project incorporate Mitigation Measure GHG-1 (Require a Project-level Greenhouse Gas Emissions Assessment for New Discretionary Development Projects).

Mitigation Measure GHG-1: Require a Project-level Greenhouse Gas Emissions Assessment for New Discretionary Development Projects. Prior to a discretionary approval by the City for development projects subject to CEQA (meaning non-exempt CEQA projects) project applicants shall prepare and submit to the City for review and approval a technical assessment evaluating potential project-specific greenhouse gas (GHG) emissions impacts. The assessment shall evaluate the project's consistency with adopted state-wide GHG emissions reduction goals, such as Senate Bill 32, Assembly Bill 1279, or an interpolated GHG emission reduction goal for

2045 that is based on regional data (e.g., an interpolated SCAQMD efficiency metric of 1.0 MTCO₂e/yr/SP). If GHG emissions levels are determined to have the potential to be inconsistent with the State GHG reduction goals or the proposed CAAP, the City shall require that applicants for new development projects incorporate strategies, such as the CAAP GHG reduction strategies, to reduce GHG emissions during operational activities. The specific strategies identified for a project shall be included as conditions of approval, and be incorporated into all appropriate planning documents for the project.

As there is uncertainty regarding the level of GHG emissions reductions that could be achieved by Mitigation Measure GHG-1, potential impacts would remain significant, adverse and unavoidable.

6.4 CONSISTENCY WITH APPLICABLE GHG REDUCTION PLANS

The State has numerous plans, policies, and regulations that are intended to directly or indirectly reduce GHG emissions and support attainment of the GHG emissions reduction targets established by AB 32, SB 32, and AB 1279, however, in general, most State programs and regulations intended to directly or indirectly reduce GHG emissions do not apply to the proposed GPU. For example, State regulations for reducing the carbon content of transportation fuels apply to fuel manufacturers and distributors and State regulations for increasing the renewable energy content in retail electric sales apply to retail sellers of electricity. Although these regulations do not apply to the proposed GPU, the GPU would nonetheless benefit from the state's implementation of these regulations. The plans, policies, and regulations that are most relevant to the GPU include the Title 24 Building Energy Efficiency Standards (BEES) and CalGreen Code and the 2022 Climate Change Scoping Plan.

6.4.1 TITLE 24 BEES AND CALGREEN CODE

The Title 24 BEES and the CalGreen code both establish mandatory renewable energy and energy efficiency standards that apply to various building systems, components, and uses. The CAAP includes policies that acknowledge and reinforce these requirements, such as the following:

- Strategy BE-1: Energy Efficiency and Decarbonization
 - Measure BE-1.1 (Encourage building operations that minimize electricity use)
 - Measure BE-1.2 (Support efforts to reduce energy burden and track energy consumption)
 - Measure BE-1.3 (Develop building performance standards that adhere to or go beyond CALGreen Tier 1 values)
 - Measure BE-1.4 (Retrofit existing residential and non-residential buildings to use electric heating and cooling technology)
 - Measure BE-1.5 (Replace fixtures with energy efficient options)
- Strategy BE-2: Renewable Energy
 - Measure BE-2.1 (Facilitate the transition of residential electricity use to 100% renewable energy sources)
 - Measure BE-3-1: Energy Education (Develop educational campaigns and programs that inform community members about renewable energy and electrification benefits and opportunities).
- Strategy TR-3: Zero-Emission Vehicles and Equipment
 - Measure TR-3.1 (Increase the adoption of EV's through financial incentives and vehicle replacement policies)
 - Measure TR-3.2 (Expand EV charging infrastructure)
 - Measure TR-3.3 (Transition away from fossil-fuel powered equipment)

Additionally, GPU policies support the Title 24 BEES and the CalGreen code requirements, such as the following:

- COSP-37 to reduce energy use and increase energy efficiency in existing and new residential, commercial, industrial, and public structures
- COSP-38 to increase the use of renewable, carbon-free, and distributed energy resources
- COSP-39 to reduce the use of fossil fuels as an energy source in new and existing buildings
- PRO-COSP-27 to budget for clean fuel and zero emission vehicles in the City's long-range capital expenditure plans
- PRO-COSP-30 to identify incentives to encourage new buildings to exceed State energy efficiency requirements and/or meet or exceed the U.S. Green Building Council's LEED Program or equivalent standards.
- PRO-COSP-31 to identify resources to assist low-income homeowners and small business owners with identifying financing options for installation of rooftop solar energy systems, energy storage, and electrification of existing buildings.
- PRO-COSP-39: to require regular energy audits of existing City-owned and operated structures, identifying levels of existing energy use and potential conservation and efficiency measures.

Future development projects would be reviewed for consistency with GPU policies and would comply with all mandatory, applicable BEES and CalGreen Code requirements in effect at the time a building permit application is submitted. Thus, the Project would not conflict with the Title 24 BEES or the CALGreen code.

6.4.2 CARB SCOPING PLAN

The 2022 Climate Change Scoping Plan is a state-level plan intended to integrate policies, programs, and investments to achieve the State's climate change goals. The plan primarily relies upon the ability of State agencies, primarily CARB and the CEC, to uphold and implement existing legislation and develop new plans and strategies to sequester, trap, and store emitted carbon emissions. Once developed, GHG reductions achieved by the State's plans, policies, and regulations would be realized at the local level. Although the plan's framework is statewide in nature, it does discuss potential voluntary actions that could be undertaken at a local level to support the State's climate goals,¹⁴ including the preparation of a climate action plan. The proposed project's consistency with the Scoping Plan's priority GHG reduction strategies for local government climate action is evaluated in Table 6-4 below.

Table 6-4: Project Consistency with CARB's Scoping Plan

Scoping Plan Priority Area	Scoping Plan Priority Strategy	Project Consistency
Transportation Electrification	Convert local government fleets to ZEVs and provide EV charging at public sites.	Consistent. GPU Implementation Action PRO-COSP-27 requires budgeting for clean fuel and zero emission vehicles in the City's long-range capital expenditure plans to transition the existing fleet of gasoline- and diesel- powered vehicles. GPU Implementation Action PRO-COSP-16 would expand installation and operation of electric vehicle charging stations on City properties,

¹⁴ This discussion is located in Scoping Plan Appendix D.

		including curbside in areas of the community where other options are limited.
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans).	Consistent. Measure TR-3.1 of the CAAP would increase the adoption of EVs through financial incentives and vehicle replacement policies and Measure 3.2 of the CAAP would expand EV charging infrastructure. GPU Implementation Action PRO-COSP-1 would require new developments were EV-ready and would facilitate the installation of EV chargers. GPU Implementation Action PRO-COSP-2 would update local codes to require new development to install electric vehicle charging infrastructure beyond the minimum State requirements and GPU Implementation Action PRO-COSP-16 would expand installation and operation of electric vehicle charging stations on City properties.
VMT Reduction	Reduce or eliminate minimum parking standards.	Consistent. Measure TR-4.2 of the CAAP would reduce the space dedicated to vehicles.
	Implement Complete Streets policies and investments, consistent with general plan circulation element requirements.	Consistent. Measure TR-1.1 of the CAAP would expand active transportation infrastructure by implementing the infrastructure, programmatic, and policy recommendations included in the Active LE Plan. Measures TR-2.1 of the CAAP would increase opportunities for residents to access alternative transportation and reduce financial barriers to transit ridership. Measure TR-2.2 of the CAAP would upgrade transit facilities and operations to better accommodate residents. The CAAP's VMT reduction measures AT.1 and RD.1 would invest in bicycle infrastructure by providing secure end-of-trip bike facilities and improving bicycle roadway infrastructure, respectively. The CAAP's VMT reduction measure RD.2 would improve infrastructure for the pedestrian network. GPU Implementation Action PRO-PSNAQ-117 would ensure long-term planning efforts include improvements to multi-modal transportation networks that include biking lanes and pedestrian-friendly streets.
	Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or	Consistent. Measure TR-2.1 of the CAAP would increase opportunities for residents to access alternative transportation and reduce financial barriers to transit ridership. Measure TR-2.2 of the CAAP would upgrade transit facilities and operations to better accommodate residents. Measure TR-4.1 of the CAAP would encourage smart-growth strategies that increase

	eliminating fares, microtransit, etc.	connectivity and density. The CAAP's VMT reduction measures LU.1 and LU.2 would increase residential and job density, respectively. The CAAP's VMT reduction measures PT.2 and PT.3 would expand the coverage and frequency of local transit. The CAAP's VMT reduction measure PT.6 and PT.7 would increase public access to transit through the supporting infrastructure of transit structures and park and ride spaces, respectively.
	Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking.	Consistent The CAAP's VMT reduction measures CM.4 and CM.5 would provide rideshare and vanshare programs, respectively. GPU Implementation Action PRO-PSNAQ-109 would encourage investment in low-carbon public transportation systems, including electric buses and bike-sharing programs.
	Implement parking pricing or transportation demand management pricing strategies.	Consistent with transportation demand management pricing strategies. The CAAP's VMT reduction measure PT.1 would implement a program that subsidizes transit passes.
	Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing the allowable density of a neighborhood).	Consistent. Measure TR-4.1 of the CAAP would encourage smart-growth strategies that increase connectivity and density.
	Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert "greenfield" land to urban uses (e.g., green belts, strategic conservation easements).	Consistent. GPU Policy PSNAQ-68 would support the preservation and restoration of natural landscapes. Measure TR-4.1 of the CAAP would encourage smart-growth strategies that increase connectivity and density.
Building Decarbonization	Adopt all-electric new construction reach codes for residential and commercial uses.	Consistent. GPU Policy COSP-39 would reduce the use of fossil fuels as an energy source in new and existing buildings. GPU Implementation Action PRO-COSP-3 would involve evaluating and adopting changes to the building code or other municipal codes and policies to decarbonize the building stock while also maximizing energy efficiency. GPU Implementation Action PRO-COSP-33 would develop new and retrofit

		existing City facilities to be zero net energy. Measure BE-1.3 of the CAAP would develop building performance standards that adhere to or go beyond CALGreen Tier 1 values.
	Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers)	Consistent. Measure BE-1.5 of the CAAP would replace fixtures with energy efficient options. Measure W-1.1 of the CAAP would involve regulation and assisting residents to upgrade to efficient fixtures for water consumption. Measure BE-3.1 of the CAAP would develop educational campaigns and programs that inform community members about renewable energy and electrification benefits and opportunities. GPU Implementation Action PRO-COSP-2 would update local codes to incentivize building owners to upgrade residential appliances, including water and space heaters, to increase energy efficiency and reduce GHG emissions. GPU Implementation Action PRO-COSP-30 would identify incentives to encourage new buildings to exceed State energy efficiency requirements and/or meet or exceed the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) Program or equivalent standards.
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings such as appliance rebates, existing building reach codes, or time of sale electrification ordinances.	Consistent. Measure BE-1.4 of the CAAP would involve retrofitting existing residential and non-residential buildings to use electric heating and cooling technology. Measure BE-3.1 of the CAAP would develop educational campaigns and programs that inform community members about renewable energy and electrification benefits and opportunities. GPU Policy COSP-39 would reduce the use of fossil fuels as an energy source in new and existing buildings. GPU Implementation Action PRO-COSP-33 would develop new and retrofit existing City facilities to be zero net energy. GPU Implementation Action PRO-COSP-30 would identify incentives to encourage new buildings to exceed State energy efficiency requirements and/or meet or exceed the U.S. Green Building Council's LEED Program or equivalent standards.
	Facilitate deployment of renewable energy production and distribution and energy storage on privately owned land uses	Consistent. Measure BE-2.1 of the CAAP would facilitate the transition of residential electricity use to 100% renewable energy sources. Measure BE-3.1 of the CAAP would develop educational campaigns and programs that inform community members about

	(e.g., permit streamlining, information sharing)	renewable energy and electrification benefits and opportunities. GPU Implementation Action PRO-COSP-29 would identify incentives and other means to encourage new and existing buildings to include battery energy storage systems. GPU Implementation Action PRO-COSP-31 would seek and identify resources to assist low-income homeowners and small business owners with identifying financing options for installation of rooftop solar energy systems, energy storage, and electrification of existing buildings. GPU Implementation Action PRO-COSP-56 would support the development of local-serving renewable energy projects that expand the availability of local renewable energy.
	Deploy renewable energy production and energy storage directly in new public projects and on existing public facilities (e.g., solar photovoltaic systems on rooftops of municipal buildings and on canopies in public parking lots, battery storage systems in municipal buildings)	Consistent. GPU Implementation Action PRO-COSP-29 would identify incentives and other means to encourage new and existing buildings to include battery energy storage systems, especially buildings with solar energy installations and municipal buildings that provide essential community services. GPU Implementation Action PRO-COSP-55 would seek to participate in utility sponsored renewable energy programs that allow the city to receive a significant portion of energy from renewable sources.
Sources: CARB 2022 and Ascent 2025		

As shown above in Table 6-4, the GPU and CAAP would be consistent with the strategies in Appendix D of CARB's Scoping Plan. Additionally, the GPU would meet the GHG reduction targets for AB 32 emissions sectors that are applicable to Lake Elsinore under the 2017 Scoping Plan and 2022 Scoping Plan (i.e., 21 percent below 2022 levels by 2030 and 88 percent below 2022 levels by 2045) (Ascent 2025). For these reasons, the Project would not conflict with or otherwise obstruct implementation of CARB's Scoping Plan.

6.4.3 SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS RTP/SCS

Connect SoCal is a growth strategy and transportation plan that demonstrates how the SCAG region will meet its GHG reduction target through the year 2045. Many of the measures included in the RTP/SCS are focused on the expansion of, and access to, mass transit (e.g., light rail, commuter rail, bus rapid transit, etc.), planning growth around livable corridors, and locating new housing and job growth in high quality transit areas. Collectively, these land use plans, in conjunction with measures at the state-level to improve fuel efficiency standards, are designed to meet CARB's SB 375 goal for the SCAG region (reducing per capita GHG emissions in the region by 8% by 2020 and 19 percent by 2035, as compared to 2005 levels). The GPU would not conflict with or interfere with the implementation of Connect SoCal because it includes numerous policies that support the plan's mobility, community development, environmental, and economic implementation strategies that rely on local jurisdiction support. For example, GPU Implementation Action PRO-PSNAQ-117 would ensure long-term planning efforts include improvements to multi-modal

transportation networks that include biking lanes and pedestrian-friendly streets and the CAAP Measure TR-2.2 would upgrade transit facilities and operations to better accommodate residents, which would be consistent with Connect SoCal mobility strategies. The CAAP's VMT reduction measure LU.4 to integrate affordable housing, reduction measures LU.1 and LU.2 to increase density, and CAAP Measure TR-4 to encourage smart growth and increase connectivity and density would be consistent with Connect SoCal community development strategies. GPU Implementation Measure PRO-COSP-1 would increase electric vehicle charging infrastructure and GPU Implementation Measure PRO-COSP-27 would increase clean fuel and zero emission vehicles in the City's fleet, consistent with Connect SoCal environmental implementation strategies, and the CAAP's VMT reduction measures CM.4, CM.5, and PT.1 would increase employee mobility through carpool and vanpool programs and transit subsidies, consistent with Connect SoCal economic implementation strategies. See also Chapter 4.11, Land Use and Planning, and Chapter 4.17, Transportation, for additional information regarding the GPU's consistency with SCAG RTP/SCS planning strategies. For these reasons, the Project would not conflict with or otherwise obstruct implementation of Connect SoCal. This impact would be **less than significant**.

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7 REPORT PREPARERS AND REFERENCES

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Attachment A: Energy Consumption Estimates

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Insert Energy Appendix