4.6 ENERGY

This section evaluates energy impacts that would result from implementing the proposed Plan.

4.6.1 Existing Conditions

This section provides an overview of existing energy conditions applicable to the proposed Plan in the San Diego region.

STATE ENERGY RESOURCES AND USE

California maintains an energy system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. According to the US Energy Information Administration (USEIA), California consumed approximately 6,882 trillion British thermal units (BTUs) of energy in 2022 (USEIA 2025a). Per capita energy consumption, which is the total energy consumption of the state divided by the total population, is the second lowest in the country, with 176 million BTUs in 2022 (USEIA 2025a). Although California consumes more electricity than all other states except Texas and Florida, it uses less electricity per capita than any other state but Hawaii (USEIA 2025b). California imports more electricity than any other state and has historically received between one-fifth and one-third of its electricity supply from outside of the state; however, in 2023, in-state utility-scale electricity generation equaled about 90 percent of California's electricity sales, and the rest of the state's power supply came from out of state (USEIA 2025b).

California is second in the nation, after Texas, in total electricity generation from renewable resources (USEIA 2025b). Renewable resources, including eligible hydropower and small-scale (less than 1 megawatt) customer-sited solar photovoltaic (PV) systems, supplied 54 percent of California's total in-state electricity generation in 2023 (USEIA 2025b). Natural gas-fired power plants provided 39 percent of the state's total net generation, and nuclear power's share of California's total electricity generation was about 7 percent (USEIA 2025b). According to the California Energy Commission (CEC), per capita energy consumption, in general, is declining due to improvements in energy efficiency and design (CEC 2024a). However, despite this reduction in per capita energy use, the state's total overall energy consumption (i.e., non-per-capita energy consumption) is expected to increase over the next several decades due to growth in population, jobs, and vehicle travel (CEC 2024a).

REGIONAL ENERGY RESOURCES AND USE

In 2022, the San Diego region consumed 20,243 million kilowatt hours (kWh) of electricity, which is approximately 7 percent of the total electricity consumed in California, and 522 million therms of gas, or 4 percent of the state's total (CEC 2025a; CEC 2025b). The San Diego region is served by San Diego Gas and Electric (SDG&E), which provides energy service to 3.7 million customers (1.5 million accounts) in the region and portions of southern Orange County (SDG&E 2025). The utility has a diverse power production portfolio, composed of a variety of renewable and nonrenewable sources, and energy production typically varies by season and by year, with regional electricity loads tending to be higher in the summer because the higher summer temperatures drive increased demand for air-conditioning (OPR et al. 2018). In contrast, natural gas loads are higher in the winter because the colder temperatures drive increased demand for natural gas heating. In 2022, approximately 44.8 percent of the electricity SDG&E supplied was from eligible renewable sources (CEC 2024b). However, through SDG&E's EcoChoice mix, customers in SDG&E's service area may voluntarily choose to receive their electricity from 100 percent eligible renewable sources.

The cities of Chula Vista, Encinitas, Imperial Beach, La Mesa, and San Diego have formed the San Diego Community Power (SDCP) Community Choice Energy (CCE) Program. Additionally, the cities of Carlsbad, Del Mar, and Solana Beach have formed the Clean Energy Alliance (CEA), another CCE Program. SDCP and CEA work in partnership with SDG&E to deliver greenhouse gas (GHG) efficient electricity to customers within its member jurisdictions.

SDCP started providing service to commercial customers in June 2021, and service to residential customers began in 2022. In 2023, SDCP fully enrolled the City of National City and the unincorporated communities of San Diego County, and in 2024 SDCP began offering customer programs to nearly one million customers. SDCP plans to supply 100 percent renewable electricity by 2030 or 2035 (SDCP 2025). SDCP offers four plan options. PowerBase provides 45 percent renewable energy. This is typically the lowest-cost option. PowerOn provides at least 50 percent renewable energy and is the standard service for most consumers (with exceptions). Power100 provides 100 percent renewable and carbon-free energy. Power100 Green+ provides 100 percent renewable, carbon-free, Green-e® certified energy for businesses seeking LEED certification or require Green-e® certification to meet their corporate social responsibility goals (SDCP 2025).

The CEA (formed by Carlsbad, Del Mar, and Solana Beach) started delivering power to customers in May 2021. CEA offers four plan options. Clean Impact is CEA's minimum 50 percent renewable energy option, increasing annually to achieve 100 percent renewable energy by 2035. Clean Impact Plus is the default option, and offers 50 percent renewable/75 percent carbon-free energy content. Green Impact is CEA's 100 percent renewable energy option. CEA also offers an option for homes with eligible renewable energy systems (e.g., rooftop solar). Under this plan, customers are charged the applicable rate for the energy they use and receive credit for the energy they send to the grid (CEA 2025).

According to CEC's 2023 California Annual Retail Fuel Outlet Report Results (CEC-A15) in 2023, on-road motor vehicles in the county consumed approximately 1.1 billion gallons of gasoline and 107 million gallons of diesel fuel (CEC 2024c).

ANTICIPATED EFFECTS OF CLIMATE CHANGE

Climate change could lead to an increase in energy usage and energy instability due to outages and wildfires in California. As temperatures increase, electricity demand will increase to air condition buildings and transportation (e.g., personal vehicles, public transit), becoming more pronounced during peak hourly demand in the hottest months as compared to annual demand (Bedsworth et al. 2018). SDG&E's energy supply is growing to include renewable energy sources, increasing by more than 30% between 2010 and 2017; however, energy generation does not necessarily align with energy use, resulting in a "duck curve" that causes stress to the grid. Peak solar generation occurs midday whereas peak electricity demand occurs in the evening (Kalansky et al. 2018; Kennedy 2023). Additionally, the days with greatest electricity demand are humid, cloud covered days, which require higher air conditioning usage but also reduce solar electrical generation (Kalansky et al. 2018).

The SDG&E service area's primary climate change vulnerabilities come from sea level rise and wildfire, which are expected to be exacerbated by climate change. In San Diego Bay, a moderate sea level rise scenario (i.e., 1.6 feet; 0.5 meters) and a 100-year storm event could result in four substations being out of service for up to two weeks. Sea level rise is also expected to damage distribution lines from corrosion from more frequent fooding (Kalansky et al. 2018). In addition to sea level rise, installation of aboveground electrical distribution infrastructure to support development in the High and Very High FHSZs and WUIs, as the proposed Plan identifies, increases the risk of wildfire ignition, such as from downed lines, direct contact with vegetation, and line faults and equipment failures (WFCA 2024), especially in rural and high fire-risk areas. SDG&E has a fire prevention plan which accounts for the increased length of fire season and has installed a high-density weather station network that provides real time data on weather conditions that could result in unusual energy demand, put the power system at risk, or increase wildfire threats (Kalansky et al. 2018)

Energy use will be exacerbated by new residential development and expanded use of air conditioning, should the growth of energy demand from new housing stock outpace energy efficiency gains in the existing housing stock. By 2050, the San Diego region is expected to use at least 60 percent more electricity, with peak demand growing by over 70 percent (Young et al. 2024). Growing demand will likely not be offset by the decreased heating needs in winter, particularly because California's residential sector uses relatively little electricity for heating (Moser et al. 2012). Climate impacts on other sectors may also increase energy demand; for example, drought conditions may cause more pumping, conveyance, or treatment of water, which all require energy (EPA 2017).

4.6.2 Regulatory Setting

FEDERAL LAWS, REGULATIONS, PLANS, AND POLICIES

There is no overarching federal law specifically related to energy conservation. Additionally, in March 2025, the current administration announced that EPA will undertake 31 actions, focusing primarily on reconsidering actions adopted by previous administrations, including numerous actions and regulations related to the reduction of GHG emissions that could also affect energy consumption. These include, but are not limited to, reconsideration of regulations on power plants, the Endangerment Finding, and fuel economy standards, among others. As of the writing of this Draft EIR, none of these regulations have been repealed or replaced with newly adopted regulations. Therefore, these regulations are discussed below.

Federal Clean Air Act

The federal Clean Air Act (CAA), as amended, is the primary federal law that governs air quality nationwide. The CAA was enacted in 1963 and has been amended numerous times in subsequent years (1967, 1970, 1977, and 1990). On April 2, 2007, in *Massachusetts v. EPA*, 549 US 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the CAA. The court held that the administrator of the US Environmental Protection Agency (EPA) must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA administrator is required to follow Section 202(a) of the CAA (EPA 2025). Section 202(a) of the CAA requires the EPA administrator to set standards for air pollutant emissions from new motor vehicles or engines that, in the administrator's judgment, cause or contribute to air pollution that may endanger public health or welfare (42 US Code [USC] Section 7521). On December 7, 2009, the administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA (40 Code of Federal Regulations [CFR] 1):

- **Endangerment Finding:** The administrator found that the current and projected concentrations of the six key well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings are not intended to act as requirements on industry or other entities. However, this action was a prerequisite for implementing GHG emissions standards for vehicles and other sectors.

National Energy Act of 1978

The National Energy Act of 1978 included the Public Utility Regulatory Policies Act (Public Law 95-617), Energy Tax Act (Public Law 95-318), National Energy Conservation Policy Act (Public Law 95-619), Power Plant and Industrial Fuel Use Act (Public Law 95-620), and the Natural Gas Policy Act (Public Law 95-621).

The intent of the National Energy Act was to promote greater use of renewable energy, provide residential consumers with energy conservation audits to encourage slower growth of electricity demand, and promote fuel efficiency. The Public Utility Regulatory Policies Act created a market for nonutility electric power producers to permit independent power producers to connect to their lines and to pay for the electricity that was delivered.

The Energy Tax Act promoted fuel efficiency and renewable energy through taxes and tax credits. The National Energy Conservation Policy Act required utilities to provide residential consumers with energy conservation audits and other services to encourage slower growth of electricity demand.

Energy Policy Act of 1992

The Energy Policy Act of 1992 was passed to reduce the country's dependence on foreign petroleum and improve air quality. The act includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. The act requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in the act. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs. The act also defines alternative fuels, which include ethanol, natural gas, propane, hydrogen, electricity, and biodiesel.

Energy Policy Act of 2005

The Energy Policy Act of 2005, implemented by the U.S. Department of Energy, was intended to establish a comprehensive, long-term energy policy. The Energy Policy Act addresses energy production in the United States, including oil, gas, coal, and renewable forms of energy, and energy efficiency and tax incentives. Energy efficiency and tax incentive programs consist of credits for the construction of new energy-efficient homes and the production or purchase of energy-efficient appliances, and loan guarantees for entities that develop or use innovative technologies that avoid the production of GHGs.

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act was passed to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the energy performance of the federal government; and increase US energy security, develop renewable fuel production, and improve vehicle fuel economy. The Energy Independence and Security Act included the first increase in fuel economy standards for passenger cars since 1975. The act also included a new energy grant program for use by local governments in implementing energy efficiency initiatives, as well as a variety of green building incentives and programs.

Executive Orders

There are several federal executive orders (EOs) related to energy production, renewable energy, and energy reduction.

- **EO 13834: Efficient Federal Operations.** EO 13834 designates a federal chief sustainability officer to head an Office of Federal Sustainability along with chief sustainability officers to head each agency and report to the chair of the Council on Environmental Quality regarding implementation of sustainability goals.
- **EO 14154: Unleashing American Energy.** EO 14154 declares a national energy emergency per the National Emergencies Act. Under this pretense, EO 14154 directs agencies to use their statutory emergency powers to expedite development and authorization of energy projects, defined in the order as "crude oil, natural gas, lease condensates, natural gas liquids, refined petroleum products, uranium, coal, biofuels, geothermal heat, the kinetic movement of flowing water, and critical minerals." EO 14154 does not apply to solar, wind, battery electric, or other energy sources not contained in the definition of "energy."
- **EO 14156: Declaring a National Energy Emergency.** EO 14156 directs the heads of executive departments and agencies to identify and exercise any lawful emergency authorities available to them, as well as all other lawful authorities they may possess, to facilitate the identification, leasing, siting, production, transportation, refining, and generation of domestic energy resources, on, but not limited to, federal lands. If an agency determines that use of either federal eminent domain authorities or authorities afforded under the Defense Production Act (Public Law 81-774, 50 USC Section 4501 et seq.) are necessary to achieve this objective, the agency is directed to submit recommendations for a course of action to the President through the Assistant to the President for National Security Affairs.
- **EO 14260: Protecting American Energy from State Overreach.** EO 14260 aims to remove what the administration characterizes as "illegitimate impediments to the identification, development, siting,

production, investment in, or use of domestic energy resources—particularly oil, natural gas, coal, hydropower, geothermal, biofuel, critical mineral, and nuclear energy resources." EO 14260 directs "[t]he Attorney General, in consultation with the heads of appropriate executive departments and agencies, [to] identify all state and local laws, regulations, causes of action, policies, and practices…burdening the identification, development, siting, production or use of domestic energy resources," prioritizing state laws "purporting to address 'climate change' or involving 'environmental, social, and governance' initiatives, 'environmental justice,' carbon or 'greenhouse gas' emissions, and funds to collect carbon penalties or carbon taxes" (White House 2025).

- **EO 14261: Reinvigorating America's Beautiful Clean Coal Industry and Amending Executive Order 14241.** EO 14261 mandates the chair of the National Energy Dominance Council to entitle coal to the same benefits as other minerals (including the newly added uranium, copper, potash, and gold) designated in EO 14241, and calls upon multiple agencies (including the Department of State, Treasury, Interior, Energy, Agriculture, Labor, and Commerce, EPA, the Office of the US Trade Representative, the United States International Development Finance Corporation, and Export-Import Bank, among others) to support domestic coal production.
- **EO 14262: Strengthening the Reliability and Security of the United States Electric Grid**. During periods when the relevant grid operator forecasts that a temporary interruption of electricity supply is necessary to prevent a complete grid failure, EO 14262 directs the secretary of energy, in consultation with executive department and agency heads as the secretary of energy deems appropriate, to the maximum extent permitted by law, to streamline, systemize, and expedite the Department of Energy's processes for issuing orders under Section 202(c) of the Federal Power Act during the periods of grid operations described above, including the review and approval of applications by electric generation resources seeking to operate at maximum capacity.

Fuel Economy Standards

The National Highway Traffic Safety Administration (NHTSA) and EPA set the Corporate Average Fuel Economy Standards (CAFE) standards to improve the average fuel economy and reduce GHGs generated by cars and light-duty trucks. The most recent update was in 2024, and the CAFE standards were finalized for model years (MYs) 2027 through 2031. The final rule establishes standards that require an industry-wide fleet average of approximately 49 miles per gallon (mpg) for passenger cars and light trucks. The final rule establishes standards that would require an industry-wide fleet average of approximately 50.4 mpg in MY 2031 for passenger cars and light trucks and an industry fleet-wide average for heavy-duty pickup trucks and vans (HDPUVs) of roughly 2.851 gallons per 100 miles in MY 2035. The final CAFE standards increase at a rate of 2 percent per year for passenger cars in MYs 2027–2031 and 2 percent per year for light trucks in model years 2029–2031. The final HDPUV fuel efficiency standards increase at a rate of 10 percent per year in MYs 2030–2032 and 8 percent per year in MYs 2033–2035 (NHTSA 2024).

For further information on CAFE standards refer to Section 4.3, "Air Quality."

Medium- and Heavy-Duty Vehicle Program

EPA and NHTSA set fuel efficiency and GHG standards for medium- and heavy-duty trucks. In 2011, EPA and NHTSA finalized a joint rule that established a national program to reduce GHG emissions and improve fuel economy for new medium- and heavy-duty engines and vehicles. This rule—called the Phase 1 standards—requires fuel efficiency standards for engines in model years 2014 through 2018 (40 CFR Parts 85, 86, 1036, 1037, 1065, 1066, and 1068). In 2016, EPA and NHTSA adopted the Phase 2 standards, which require fuel efficiency standards for engines in model years 2018 through 2027 (40 CFR Parts 9, 22, 85, 86, 600, 1033, 1036, 1037, 1039, 1042, 1043, 1065, 1066, and 1068) (EPA 2016).

Construction Equipment Emission Standards

The Code of Federal Regulations established tiered emissions standards for construction equipment (i.e., nonroad diesel engines) to phase in cleaner-burning equipment that will reduce nitrogen oxides (NO_X) and particulate

matter emissions from exhaust. After 2014, all construction equipment manufactured in the United States is required to meet the highest tier of emission standards, Tier 4. EPA oversees implementation of these regulations (CFR Chapter 40, Parts 1039, 1065, and 1068).

Public Law No. 119-15

On June 12, 2025, Public Law 119-15, enacting House Joint Resolution 87, was signed into law. The law utilized the Congressional Review Act to nullify EPA's rule that had granted California a waiver to enforce stricter emissions standards for heavy-duty vehicles under the CAA. The disapproved rule included programs such as the Advanced Clean Trucks regulation and zero-emission requirements for airport shuttles. Passed under the Congressional Review Act, the law prevents EPA from implementing or reissuing the same or similar rules without new congressional authorization. This effectively blocks California, and other states that follow its standards, from enforcing these specific vehicle emission and warranty regulations. Impact EN-1 uses EMFAC2017 to calculate mobile source energy estimates in alignment with the approach taken in Section 4.8, "Greenhouse Gas Emissions and Climate Change." These analyses do not account for the Advanced Clean Trucks regulation had not yet been adopted at the time the EMFAC2017 methodologies were last updated, and thus were not factored into the modeling.

Public Law No. 119-16

Similarly on June 12, 2025, Public Law No. 119-16, enacting House Joint Resolution 88, became law. The law also relied on the Congressional Review Act to void the EPA's December 2024 waiver under the CAA that allowed California to implement and enforce the Advanced Clean Cars II (ACC II) regulation. ACC II included a zero-emission vehicle (ZEV) mandate targeting 100% new light-duty ZEV sales by 2035. P.L. No. 119-16 marks the first ever occurrence that waivers under the CAA have been revoked under the Congressional Review Act. The implications of this law on the State's capability to enforce its independent fuel economy standards are uncertain at this time, as the California Attorney General is pursuing legal action challenging P.L. No. 119-16. Whether this action will be successful is unknown, as is the possibility that a federal judge will issue a stay to halt the implementation of the ACC II regulation during the legal process. Notably, as discussed under the analysis of Project impacts in Section 4.6.4, "Environmental Impacts and Mitigation Measures," Impact EN-1 uses EMFAC2017 to calculate mobile source energy estimates in alignment with the approach taken in Section 4.8, "Greenhouse Gas Emissions and Climate Change." These analyses do not account for ACC II because ACC II had not yet been adopted at the time the EMFAC2017 methodologies were last updated, and thus were not factored into the modeling.

STATE LAWS, REGULATIONS, PLANS, AND POLICIES

The State of California has adopted several laws addressing various aspects of energy production, energy conservation, energy efficiency, and renewable energy. Much of this establishes a broad framework for the state's long-term GHG and energy reduction goals and climate change adaptation program. A summary of the key laws, regulations, plans, and policies that are relevant to the proposed Plan is provided below, organized by general categories. Additional air quality and climate change laws, regulations, plans, and policies affecting the energy sector are reviewed in Section 4.3, "Air Quality," and Section 4.8, "Greenhouse Gas Emissions."

Legislative GHG Reduction Targets

The State has passed legislation that establishes a broad framework for the long-term GHG reduction and climate change adaptation programs. The following bills are the primary laws related to GHG reduction targets that are also relevant to California's energy goals.

- **Assembly Bill (AB) 32, Health and Safety Code Section 38500 et seq.** AB 32 codified the 2020 reduction target of EO S-03-05 (i.e., by 2020, reach the GHG emissions levels of 1990). AB 32 also gave CARB authority to develop a scoping plan that describes the approach California will take to achieve GHG reduction targets.
- **Senate Bill (SB) 32, Health and Safety Code Section 38566.** SB 32 codified the 2030 reduction target of EO B-30-15 (i.e., by 2030, reach statewide GHG emission levels of 40 percent below 1990 levels). As part of SB 32, AB 197 of 2016 (Chapter 250, Statutes of 2016) required CARB, in implementing SB 32's 2030 GHG

reduction target, to (1) prioritize emissions reductions to consider the "social costs" of GHG emissions and (2) prioritize "direct emission reductions" at large stationary sources and at mobile sources. In 2017, CARB updated the Scoping Plan to achieve the 2030 reduction target.

- **AB 1279, The California Climate Crisis Act, Health and Safety Code Section 38562.2.** On September 16, 2022, the State legislature passed AB 1279, which codified stringent emissions targets for the state of achieving carbon neutrality and an 85 percent reduction in anthropogenic emissions level by 2045 relative to 1990 levels.

State Agency GHG Reduction Plans

CARB and other state agencies have adopted various GHG reduction plans. A description of these plans follows. These plans are discussed in further detail in Section 4.8, "Greenhouse Gas Emissions."

- **AB 32 Scoping Plan.** The AB 32 Scoping Plan identifies specific measures to reduce GHG emissions to 1990 levels by 2020 and requires CARB and other state agencies to develop and enforce regulations and other initiatives to reduce GHG emissions. The AB 32 Scoping Plan, adopted in 2008, comprises the state's roadmap for meeting AB 32's reduction target. Specifically, the scoping plan articulates a key role for local governments by recommending that they establish GHG emissions-reduction goals for both their municipal operations and the community that are consistent with those of the state (i.e., approximately 15 percent below current levels) (CARB 2008). The AB 32 Scoping Plan was updated in 2014.
- **2017 Scoping Plan.** The 2017 Scoping Plan represents the state's roadmap to achieving long-term GHG reduction target of SB 32. Because energy is one of the state's largest contributors to GHG emissions, efforts to reduce energy-related emissions are a key component of the 2017 Scoping Plan. The actions outlined in the Scoping Plan Update also support California's efforts to build a state-of-the-art energy generation, supply, and distribution system that is clean, affordable, and reliable.
- **2022 Scoping Plan for Achieving Carbon Neutrality.** CARB adopted the *Final 2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 16, 2022. The 2022 Scoping Plan traces the state's pathway to achieve its goals of carbon neutrality and an 85 percent reduction in 1990 emissions by 2045, as codified by AB 1279 in September 2022 (CARB 2022a). These targets are in line with scientifically established levels to limit the rise in global temperature to no more than 2 degrees Celsius (°C), the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5°C (United Nations 2015). The 2022 Scoping Plan identifies the reductions needed by each GHG emission sector (e.g., transportation [including off-road mobile-source emissions], industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste) to achieve these goals. The 2022 Scoping Plan details a multitude of strategies for reducing GHG emissions in each of these sectors. Examples of strategies include achieving a per capita vehicle miles traveled (VMT) reduction of at least 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045 to reduce GHGs from the transportation sector, achieving three million all-electric and electric-ready homes by 2030 and seven million by 2035 with six million heat pumps installed statewide by 2030 to reduce GHG emissions in the commercial and residential building sector, and using long-term planning processes to support grid reliability and expansion of renewable and zero-carbon resource and infrastructure deployment to reduce energy sector GHG emissions. The 2022 Scoping Plan is the current scoping plan.
- **California State Priority Climate Action Plan.** California's State Priority Climate Action Plan (PCAP) was developed to achieve GHG reductions across the geographic extent of California from nearly every economic sector. The PCAP includes several elements: a 2021 statewide GHG emissions inventory, the state's overarching GHG targets codified by AB 32 and AB 1279, an overview of the state's approach to low-income and disadvantaged community benefits analysis, workforce considerations, and GHG reduction measures that target reduction in the transportation, industrial, energy, high global warming potential, agriculture, natural and working lands, and waste sectors. The PCAP supports statewide GHG reduction targets through implementation of the following reduction measures:

- **Transportation measures:**
  - Create a holistic, heavy-duty zero-emissions vehicle buydown program.
  - Install truck charging to support zero-emissions goods movement at California ports and warehouse districts.
  - Advance the deployment of clean off-road equipment.
  - Bolster investments in the state's sustainable port and freight infrastructure.
  - Support mobility projects uplifted by communities.
  - Allow for local deployment of ZEV infrastructure and low-income ZEV support.
- **Industrial measure:**
  - Accelerate industrial decarbonization by expanding the existing Industrial Decarbonization and Improvement to Grid Operations Program.
- **Energy measures:**
  - Expand decarbonization through the Energy Conservation Assistance Act.
  - Create a funding program to upgrade the capacity of distribution systems.
  - Expand the success of California's Self-Generation Incentive Program for behind the meter energy storage.
  - Bolster healthy landscapes and resilient communities through expanding the Biomass to Carbon Negative Biofuels Program.
  - Deploy equitable building decarbonization.
  - Implement bioenergy projects.
  - Enable renewable microgrids for rural communities and tribes.
- **High global warming potential gases measure:**
  - Expand F-gas Reduction Incentive Program.
- **Agriculture measures:**
  - Expand California's healthy soils practices.
  - Reduce methane emissions by expanding California's existing Dairy Digester Research and Development Program.
- **Natural and working lands measures:**
  - Bolster California's Forest Health Program.
  - Expand urban and community forest projects.
  - Expand the state's Wetland Restoration Program.
- **Waste measures:**
  - Food Waste Prevention and Edible Food Recovery Program.
  - Bolster organics recycling infrastructure.

Transportation Planning

- **SB 375, Chapter 728, Statutes of 2008.** SB 375 provides for a new planning process that integrates regional transportation, land use, GHG reduction, and housing planning. SB 375 requires regional transportation plans

(RTPs) to incorporate a sustainable communities strategy (SCS) that demonstrates how the region would achieve regional GHG emission reduction targets for passenger vehicles set by CARB. CARB revised SANDAG's GHG targets in 2018 to 15 percent reduction in passenger vehicle emissions per capita by 2020 and 19 percent by 2035 using a 2005 baseline.

In the *2022 Progress Report California's Sustainable Communities and Climate Protection Act*, CARB states that an RTP/SCS that meets the applicable SB 375 targets alone will not result in the GHG emission reductions necessary to meet state climate goals in 2030 nor in 2050 (CARB 2022b). CARB has also noted that greater reductions in VMT will be required to make up the 6 percent gap in GHG. Further, CARB states that California is still not reducing GHG emissions from personal vehicle travel as needed to meet climate commitments and as targeted under SB 375 (CARB 2022b).

Fuel Economy Standards and Electric Vehicles

- **EO N-79-20.** Signed by Governor Newsom on September 23, 2020, EO N-79-20 requires 100 percent of in-state sales of passenger cars and trucks are ZEVs by 2035; 100 percent of operating medium- and heavy-duty vehicles are ZEVs by 2045; and 100 percent of drayage trucks and off-road vehicles and equipment are ZEVs by 2035. The order also tasks CEC with providing an updated assessment of the infrastructure needed to support this level of ZEV adoption (CARB 2021). The Governor's Interagency Working Group on ZEVs developed the ZEV Action Plan, issued in 2013 and subsequently updated in 2016 and 2018, to identify actions that support the State's ZEV goals. Some actions in the ZEV Action Plan that are particularly relevant to the Clean Transportation Program include ensuring ZEVs are accessible to a broad range of Californians and making ZEV technologies commercially viable in the medium- and heavy-duty and freight sectors. Many recommendations in the ZEV Action Plan have been captured in the Clean Transportation Program since the inception of the program and continue to be program priorities (CARB 2021).
- **Advanced Clean Cars Program (passenger vehicles)**. AB 1493 of 2002 (known as Pavley I, Chapter 200, Statutes of 2002) provided the nation's first GHG standards for automobiles. AB 1493 required CARB to adopt vehicle standards that lowered GHG emissions from new light-duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards referred to as the Advanced Clean Cars (ACC) Program's Low Emission Vehicle III Regulation was adopted for vehicle model years 2017–2025 in 2012 (13 California Code of Regulations [CCR] Section 1900 et seq.).

  The ACC Program also includes the Zero Emission Vehicle Program and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of ZEVs, which include battery electric, fuel cell, and plug-in hybrid electric vehicles. The Clean Fuels Outlet regulation is intended to ensure that fuels, such as electricity and hydrogen, are available to meet the fueling needs of new advanced technology vehicles as they come to market. The ACC II Program was adopted by CARB in August 2022, and provides the regulatory framework for ensuring the sales requirement goal of EO N-79-20 to ultimately reach 100 percent ZEV sales in the state by 2035. EPA granted CARB its California's CAA waiver request on December 18, 2024.
- **Low Carbon Fuel Standard.** The Low Carbon Fuel Standard (LCFS) originally mandated that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 (17 CCR Section 95480 et seq.). In September 2018, to help achieve SB 32's emission reduction target, the LCFS regulation was amended to increase the statewide goal to a 20 percent reduction in carbon intensity of California's transportation fuels by 2030. The majority of the emissions benefits due to the LCFS come from the production cycle (upstream emissions) of the fuel rather than the combustion cycle (tailpipe). On November 8, 2024, CARB approved amendments to the LCFS regulation to maintain momentum for global, national, and local private sector investment toward increasing cleaner fuel and transportation options for consumers, accelerating the deployment of zero-emission infrastructure and clean fuel production to support clean vehicle regulations, and keeping the state on track to meet statutorily mandated air quality and climate targets (CARB 2025a). On January 3, 2025, CARB submitted the final proposed amendments to the LCFS regulation to the Office of Administrative Law (OAL) for review in accordance with Government Code Section

11349.1 (CARB 2025a). On February 18, 2025, OAL issued a routine disapproval of amendments to the LCFS regulation on technical grounds, not on the merits of the regulation. CARB staff have 120 days to make necessary revisions and resubmit the regulation for OAL approval (CARB 2025a). CARB staff made necessary revisions and resubmitted the regulation for OAL approval on May 16, 2025. On June 27, 2025, OAL approved this rulemaking and filed it with the Secretary of State with an effective date of July 1, 2025.

- **Medium- and heavy-duty vehicles.** In 2008, CARB approved the Phase 1 Tractor-Trailer Greenhouse Gas Regulation to reduce GHG emissions by requiring the use of aerodynamic tractors and trailers that are also equipped with low-rolling-resistance tires (13 CCR Section 2020 et seq.). The regulation applies to certain Class 8 tractors manufactured for use in California and is harmonized with the parallel EPA and NHTSA Phase 1 heavy-duty truck standards. CARB amended the Tractor-Trailer Greenhouse Gas Regulation in 2019 (Phase 2 standards) to align with EPA and NHTSA Phase 2 heavy-duty truck standards.
- **Advanced Clean Trucks**. The Advanced Clean Trucks regulation was adopted by CARB on April 28, 2023. The Advanced Clean Trucks regulation sets requirements for the transition of diesel trucks and vans to zero-emission trucks, which began in 2024. Per the Advanced Clean Trucks Regulation, manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines are required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales are required to be 55 percent of Class 2b–3 truck sales, 75 percent of Class 4–8 straight truck sales, and 40 percent of truck tractor sales (EPA 2024). CARB estimates that the regulation will lower related premature deaths (CARB 2020). Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, CARB expects that risks associated with exposure to the emissions will also be reduced. EPA granted the waiver request for the Advanced Clean Trucks Regulation on April 6, 2023 (EPA 2023).
- **Advanced Clean Fleets.** CARB's 2022 Advanced Clean Fleets regulation was developed to reduce diesel particulate matter through the transition of medium- and heavy-duty trucks to become fully electric by 2045. In January 2025, California withdrew its request for a waiver and authorization for the addition of the Advanced Clean Fleets regulation to its emissions control program (CARB 2025b). CARB is not enforcing the existing portions of the Advanced Clean Fleets regulation that require a federal waiver or authorization, such as the portions of the Advanced Clean Fleet regulation that apply to high-priority and drayage fleets. However, not all elements of the Advanced Clean Fleets regulation require a federal waiver or authorization (CARB 2025c). State and local government fleets will still be required to be fully electric by 2045.
- **Innovative Clean Transit.** The Innovative Clean Transit (ICT) regulation was adopted in 2018 and requires all public transit agencies to incrementally reduce fleet vehicle tailpipe emissions and prioritizes innovative first- and last-mile connectivity and improved mobility for transit riders. Additionally, the ICT regulation provides various exemptions and compliance options to provide safeguards and flexibility for transit agencies through this emission reduction schedule. The ICT regulation was developed to align with other State policies, including the Sustainable Communities and Climate Protection Program (SB 375) and SB 350. SB 375 creates initiatives for increased development of transit-oriented communities, better-connected transportation, and active transportation. SB 350 provides an opportunity for transportation electrification including wide use of zero-emission buses. Under SB 350 the California Public Utilities Commission (CPUC) is collaborating with CARB and CEC to implement requirements set forth by SB 350 to support widespread transportation electrification. Through the deployment of zero-emission technologies, the ICT regulation will provide significant benefits across the state, including:
  - reducing NO_x and GHG emissions for all Californians, especially transit-dependent and disadvantaged communities; the majority of these benefits will be in the state's most populated and impacted areas where transit buses are most prevalent
  - increasing the penetration of the first wave of zero-emission heavy-duty technologies into applications that are well suited to their use to further achieve emission reduction benefits
  - saving energy and reduce dependency on petroleum and other fossil fuels

- expanding ZEV industry to bring high quality green jobs to local communities and trained workforce to California
- providing other societal benefits by encouraging improved mobility and connectivity with zero-emission transportation modes and reduced growth in light-duty VMT.

The goal of this regulation is to continue CARB, CEC, and CPUC's partnership with transit agencies to maximize these benefits, while providing flexibility and sufficient time for transit agencies to address potential challenges and utilize available funds. This regulation strives to not just maintain but enhance transit service through increased mobility options and has built in technological and financial safeguards to ensure transit service or fares are not adversely impacted by the regulation (13 CCR 2023).

- **AB 126:** Approved by the Governor on October 7, 2023, AB 126 includes provisions to provide, upon appropriation by the legislature, funding in the form of grants, revolving loans, loan guarantees, loans, or other appropriate funding measures to various private and public entities to help attain the State's climate change policies. AB 126 is intended to facilitate the development and deployment of zero-emission technology and fuels in the marketplace where feasible and near-zero-emission technology and fuels elsewhere. Provisions related to electric vehicles (EVs) and EV infrastructure include: creation of the Air Quality Improvement Program (Health and Safety Code [HSC] Section 44274 [a]) to provide funding for zero-emission fuel projects where feasible and near-zero-emission fuel projects elsewhere to develop and improve zero-emission and near-zero-emission fuels (HSC Section 44272 [h][1]); and a program to provide funding for homeowners who purchase a plug-in EV to offset costs associated with modifying electrical sources to include a residential plug-in EV charging station (HSC Section 44272 [h][13]). Awardees of funding for EV charging infrastructure are required to report to the CEC "the source and greenhouse gas emissions intensity, on an annual basis, of the electricity used and dispensed by electric vehicle charging stations at the meter (HSC Section 44272[m]). Funding is also authorized to be provided toward incentives for medium- and heavy-duty vehicles and equipment mitigation, including electric, hybrid, and plug-in hybrid on-road and off-road medium- and heavy-duty equipment (HSC Section 44274[c][4]).

Renewable Energy

- **Renewables Portfolio Standard**. SB 1078 (Sher 2002) established California's Renewables Portfolio Standard (RPS). The program sets continuously escalating renewable energy procurement requirements for the state's load-serving entities. Generation must be procured from RPS-certified facilities. SB 2 (1X) of 2011 obligated all California electricity providers to obtain at least 33 percent of their energy from renewable resources by 2020. CPUC and CEC are jointly responsible for implementing the program. All electricity retail sellers had an interim target between compliance periods to serve at least 38.5 percent of their load with RPS-eligible resources by December 31, 2022. In general, retail sellers either met or exceeded the interim 38.5 percent target and are on track to achieve their compliance requirements. In 2018, SB 100 (Public Utilities Code Sections 399.11, 399.15, 399.30 and, Section 454.53) was signed into law, which again increases the RPS to 60 percent by 2030 and requires all the state's electricity to come from carbon-free resources by 2045.
- **SB 350 (Chapter 547, Statutes of 2015)**. SB 350 established the 2030 targets for the RPS: (1) an RPS of 50 percent and (2) a doubling of efficiency for existing buildings. In addition, SB 350 requires CPUC to establish an integrated resource planning (IRP) process to require that load-serving entities in the state develop their future energy portfolios to align with California's clean energy goals.
- **SB 100 (Chapter 312, Statutes of 2018)**. This bill establishes a new RPS target of 50 percent by 2026, increases the RPS target in 2030 from 50 to 60 percent, and establishes a goal of 100 percent zero-carbon energy sources by 2045.
- **SB 1020 (Chapter 361, Statutes of 2022)**. This bill superseded the goals of SB 100 by requiring that 90 percent of all retail sales of electricity to California end-use customers are procured from renewable energy and zero-carbon resources by December 31, 2035. The requirement increases to 95 percent by December 31,

2040, and to 100 percent by December 31, 2045. Under SB 1020, state agency facilities must use 100 percent renewable and zero-carbon energy resources by December 31, 2035.

- **Integrated Energy Policy Report.** SB 1389 (Chapter 568, Statutes of 2002) required CEC to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (PRC Section 25301[a]). This work culminated in the Integrated Energy Policy Report (IEPR). CEC adopts an IEPR every 2 years and an update every other year. The 2023 IEPR is the most recent IEPR, including the 2024 Draft Update to the 2023 IEPR. The 2023 IEPR provides a summary of priority energy issues currently facing the state, outlining strategies and recommendations to further the State's goal of ensuring reliable, affordable, and environmentally responsible energy sources. The report contains an assessment of major energy trends and issues in California's electricity, natural gas, and transportation fuel sectors. The report provides policy recommendations to conserve resources, protect the environment, ensure reliable, secure, and diverse energy supplies, enhance the state's economy, and protect public health and safety. Topics covered in the 2023 IEPR include the accelerated connection of clean energy, the California Energy Demand Forecast, the potential growth of hydrogen in the state, and updates to issues such as energy efficiency, gas utility decarbonization, and the Clean Transportation Program (CEC 2024d).

Building Efficiency

- **California Building Energy Efficiency Standards.** The energy consumption of new residential and nonresidential buildings in California is regulated by the California Energy Code's Building Energy Efficiency Standards (California Energy Code) (24 CCR Part 6). CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption. The 2022 California Energy Code went into effect on January 1, 2023. The 2022 California Energy Code advances the on-site energy generation progress started in the 2019 California Energy Code by encouraging electric heat pump technology and use, establishing electric-ready requirements when natural gas is installed, expanding solar photovoltaic (PV) system and battery storage standards, and strengthening ventilation standards to improve indoor air quality. CEC estimates that the 2022 California Energy Code will save consumers $1.5 billion and reduce GHGs by 10 $MMTCO_2e$ over the next 30 years (CEC 2021). The 2025 Building Energy Efficiency Standards (2025 California Energy Code) were adopted on September 11, 2024, and will go into effect on January 1, 2026, for nonresidential development. According to CEC, the 2025 California Energy Code puts particular emphasis on replacing end-of-life rooftop heating, ventilation, and air-conditioning units of a certain size with high efficiency systems; establishing electric-ready requirements for commercial kitchens; and updating solar and storage standards for assembly buildings to make clean energy available for on-site use while minimizing exports to the electrical grid (CEC 2024b). On June 30, 2025, the Governor signed AB 130, which institutes a six-year freeze on updates to state and local residential building standards, running from October 1, 2025, through June 1, 2031, with exceptions only for emergency measures, energy/fire safety, accessibility, and wildland-urban code updates. During this period, local jurisdictions may not adopt new residential building code amendments unless they are confirmed by the Building Standards Commission as emergency or health-and-safety necessities. The law also guarantees that model-home building standards remain locked in for up to 10 years or until the design significantly changes, ensuring long-term planning stability and guarding builders against sudden code shifts.

- **California Green Building Standards Code.** California has adopted the Green Building Standards Code (CALGreen) (24 CCR Part 11), which identifies both mandatory and voluntary aggressive energy efficiency standards for new residential and nonresidential buildings. The standards are updated every 3 years. The current version is the 2022 CALGreen Code. The 2022 CALGreen Code advances the on-site energy generation progress started in the 2019 California Energy Code by encouraging electric heat pump technology and use, establishing electric-ready requirements when natural gas is installed, expanding solar PV system and battery storage standards, and strengthening ventilation standards to improve indoor air quality. The 2025 CALGreen Code was adopted on September 11, 2024, and will go into effect on January 1, 2026 for nonresidential

development. The 2025 version proposes increased requirements for EV charging infrastructure (i.e., a higher percentage of parking spaces that must be equipped with EV chargers and more stringent requirements for the types of chargers that must be installed) in both residential and nonresidential buildings. The 2025 CALGreen Code also includes required analysis of embodied carbon in building materials, which was not required under the 2022 CALGreen Code. Lastly, the 2025 CALGreen Code includes updates to energy efficiency standards aimed at further reducing energy consumption in buildings and promoting the use of renewable energy sources (CEC 2024e). CALGreen requirements are complementary with the California Energy Code discussed above. Discussed above, AB 130 freezes the 2022 residential building code, including the CALGreen Code, until 2031; however, the requirements of the 2025 nonresidential CALGreen Code will be applied to new nonresidential development effective January 1, 2026.

- **AB 130:** AB 130 of 2025 imposes a moratorium on changes to California building codes affecting residential units, including both state and local amendments, through 2031, with limited exemptions. Essentially, AB 130 would prohibit CEC or any other adopting agency from considering, approving, or adopting any proposed building standards affecting residential units, unless a certain condition is met, including that the CEC deems those changes necessary as emergency standards to protect health and safety. The 2025 California Building Code will proceed as planned with an effective date of January 1, 2026 for nonresidential development, and the 2031 California Building Code cycle is anticipated to be unaffected.

California Energy Commission

- **Warren-Alquist Act**. The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC. The act established a statewide policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. CEC is responsible for the certification of electrical generation facilities as eligible renewable energy resources and adopting regulations for the enforcement of RPS procurement requirements of public owned utilities, while CPUC implements and administers RPS compliance rules for California's retail sellers of electricity, which include large and small investor-owned utilities electric service providers, and community choice aggregators.
- **State of California Energy Action Plan**. CEC is responsible for preparing the state energy plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 2003 California Energy Action Plan (2008 update). The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs, and encouragement of urban design that reduces VMT and accommodates pedestrian and bicycle access.
- **California Energy Efficiency Action Plan** The CEC updates its plan to increase energy efficiency in existing buildings every three years. The most recent update is the 2021 Energy Efficiency Action Plan, which is covered in two documents: the 2021 California Building Decarbonization Assessment and the 2021 Integrated Energy Policy Report. The 2021 California Building Decarbonization Assessment is the initial report addressing the mandates codified in AB 3232 (Friedman, Chapter 373, Statutes of 2018). The report analyzes scenarios to reduce GHG emissions by at least 40 percent by 2030 and identifies several strategies that will lead to significant emission reductions related to electricity and natural gas use in buildings, as well as from refrigerants. The strategies include electrification, electricity generation decarbonization, energy efficiency, refrigerant leakage reduction, distributed energy resources, decarbonizing the gas system, and demand flexibility. The assessment shows that California can achieve significantly more than a 40 percent reduction by 2030 through these strategies. The Final 2021 Integrated Energy Policy Report covers a broad range of topics, including building decarbonization, energy efficiency, challenges with decarbonizing California's gas system, quantifying the benefits of the Clean Transportation Program, and the California Energy Demand Forecast. Development of the 2025 Building Energy Action Plan is underway, and will be published in late 2025.

LOCAL

SANDAG Regional Energy Strategy

The SANDAG Regional Energy Strategy (RES) serves as the energy policy blueprint for the San Diego region through 2050 to support decision-making as the region strives to meet the energy needs of the growing population (SANDAG 2014). It establishes long-term goals in topic areas such as energy efficiency, renewable energy, distributed generation, transportation fuels, land use and transportation planning, border energy issues, and the green economy. SANDAG and local governments identified six early actions to focus on in the near term:

- Pursue a comprehensive building retrofit program to improve efficiency and install renewable energy systems.
- Create financing programs to pay for projects and improvements that save energy.
- Use the SANDAG-SDG&E Local Government Partnership to implement the RES at the local level. SANDAG will work with local governments to identify opportunities and implement energy savings at government facilities and throughout their communities.
- Support land use and transportation planning strategies that reduce energy use and GHGs.
- Support use of existing unused reclaimed water to decrease the amount of energy needed to meet the water needs of the San Diego region.

In 2014, a technical update of the RES was completed to inform the development of the 2021 Regional Plan. This technical update demonstrates progress toward attaining the RES goals, updates existing conditions and future projections data, and recommends priorities for moving forward.

Local General Plans

Many of the local agencies in the San Diego region have general plan goals, objectives, and policies that specifically address energy use and conservation. The policies set forth in local general plans would have an effect on energy conservation and renewable energy use in for new development within the region.

These goals and policies include improvements in energy efficiency for new residential and commercial land uses and measures to reduce VMT through land use and transportation planning. Measures included in the general plans would improve energy efficiency, promote renewable energy use, and minimize wasteful, inefficient energy consumption in the region. As a result of requirements, incentive programs, and educational and outreach programs, general plans would build on federal and state efforts to improve energy efficiency associated with future land uses and transportation projects.

Climate Action Plans

As discussed in more detail in Section 4.8, "Greenhouse Gas Emissions," climate action plans (CAPs), GHG reduction plans, and sustainability plans are developed to identify the nature of GHG emissions and to implement policies, actions, and measures to reduce existing and future GHG emissions. Measures included in CAPs would improve energy efficiency, promote renewable energy use, and minimize wasteful, inefficient energy consumption in the region.

Many jurisdictions have already adopted GHG reduction plans: City of Carlsbad (2024), City of Chula Vista (2017), City of Coronado (2022), City of Del Mar (2016), City of El Cajon (2020), City of Encinitas (2020), City of Escondido (2021), City of Imperial Beach (2019), City of La Mesa (2024), City of Lemon Grove (2020), National City (2011), City of Oceanside (2019), Port of San Diego (2013). City of San Diego (2022), San Diego Regional Airport Authority (2020), City of San Marcos (2020), City of Santee (2019), City of Solana Beach (2024), and City of Vista (2021). The City of Poway is the only jurisdiction in the San Diego region that has not developed and has not committed to developing a CAP or GHG reduction plan. Table 4.8-5 in Section 4.8, "Greenhouse Gas Emissions," summarizes GHG reduction planning efforts in the San Diego region. In addition to the efforts of the 18 cities and the County of San Diego, the San Diego Unified Port District and the San Diego County Water Authority have developed GHG inventories and CAPs.

Community Choice Energy

AB 117 enacted Community Choice Aggregation (CCA) in 2002. Under AB 117, all electrical corporations must cooperate fully with community choice aggregators investigating, pursuing, or implementing community choice aggregator programs. The San Diego region has two CCAs: CEA and SDCP. See Section 4.6.1, "Existing Conditions," for further details regarding the region's two CCAs. CCAs are required to meet the compliance requirements, including those established for regulations, such as the RPS and IRP, which guide California's energy utilities toward meeting the state's renewable energy goals (e.g., SB 1020 and AB 179).

4.6.3 Significance Criteria

Appendix G of the CEQA Guidelines provides criteria for determining the significance of a project's environmental impacts in the form of initial study checklist questions. Unless otherwise noted, the significance criteria specifically developed for this EIR are based on the Appendix G checklist questions.

Checklist questions for energy are provided in Section VI of Appendix G of the CEQA Guidelines. Checklist items were not modified for this analysis. Therefore, implementation of the proposed Plan would have a significant energy impact if it would:

EN-1 Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy during project construction or operations.

EN-2 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.6.4 Environmental Impacts and Mitigation Measures

EN-1 RESULT IN A POTENTIALLY SIGNIFICANT ENVIRONMENTAL IMPACT DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY DURING PROJECT CONSTRUCTION OR OPERATIONS

Analysis Methodology

This section discusses the construction and operational impacts related to energy from regional growth and land use change(s), and planned transportation network improvements.

Construction

Construction activities would occur through 2050 at various locations throughout the region. While the regional GHG inventory and projections (see Appendix E to this EIR) did not provide a direct estimate of construction energy consumption, typical construction energy were captured from GHG emission estimates for the construction and mining subcategory of the off-road transportation sector:

Energy consumption from other categories, such as energy consumption associated with on-road construction trucks as well as worker commute vehicles, are not explicitly presented in the regional GHG inventory and projections. Instead, construction truck activity is included in the On-Road Transportation – Heavy-Duty Trucks and Other Vehicles section of Appendix E, and construction worker trips are embedded within the On-Road-Transportation – Passenger Car and Light-Duty Vehicles section of Appendix E. The location, size, magnitude, and duration of construction activities within the region due to proposed Plan implementation are unknown at this time. However, construction activities, as compared to operational energy demand, would be inherently short term. Construction energy use related to on-road vehicles and electricity are calculated as part of the operational analysis, as further discussed below. Construction energy use related to off-road equipment is combined with operational energy consumption to calculate total and per capita annual energy use to inform this analysis.

Operations

Estimates of baseline and projected operational energy consumption developed as part of the regional GHG inventory and projections were used for the analysis of regional growth and land use change(s) (see Appendix E to

this EIR). The following operational energy sources related to regional growth and land use change were quantified as part of this analysis.

- **Electricity and Natural Gas.** Electricity (in gigawatt-hours [GWh]) and natural gas (million therms) used by regional land uses (commercial, residential, industrial) for heating, cooling, lighting, and other end uses.
- **Water-related Electricity.** Water-related electricity (GWh) refers to energy associated with upstream supply, conveyance, and treatment of water. Electricity used for local water distribution and water end use is captured by the building electricity and natural gas sources.

Operational energy use for baseline and projected transportation network improvements and programs was estimated as part of the regional GHG inventory and projections, as well as separate calculations prepared based on the regional GHG inventory (i.e., electricity from EV usage) (see Appendices E and F to this EIR). The following operational energy sources related to transportation network improvements and programs were quantified as part of this analysis.

- **On-Road Vehicle Gasoline and Diesel.** Gasoline and diesel fuel consumption (million gallons) associated with operation of the transportation network, including passenger cars, light-duty trucks, medium- and heavy-duty trucks, and buses.
- **Rail Diesel.** Includes combustion of diesel fuels in internal combustion engines from both passenger and freight rail.

There were several GHG emission sources included in the regional GHG inventory and projections (see Appendix E to this EIR) that have energy consumption associated with them. However, activity data for these sources were not separately provided in the inventory and projections. Therefore, energy consumption values could not be estimated for this analysis.

- **Other fuels.** Includes distillate (other than in power production), coal, kerosene, gasoline (other than in transportation), liquefied petroleum gas (LPG), residual fuel oil (other than in power production), and wood (wet). Cement manufacturing is estimated to contribute 26% of the Other Fuels category, primarily from coal and petroleum coke use.
- **Off-road transportation.** Includes fuel consumption in cargo handling equipment, industrial equipment, large spark ignition fleets (forklifts), airport ground support equipment, recreational vehicles, lawn and garden equipment, transport refrigeration units, military tactical support equipment, and other portable equipment. Note that the construction/mining subcategory was used as a proxy for energy use in construction equipment.
- **Aviation.** Includes jet fuel and aviation gasoline consumption from commercial operations at the San Diego International Airport and McClellan-Palomar Airport, as well as San Diego County municipal and Private airfields.
- **Marine vessels.** Includes fuel consumption by ocean-going vessels, pleasure craft, recreational vessels, and commercial harbor craft, largely attributed to the Port of San Diego.

These sources would result in additional baseline and horizon year energy consumption not captured by the quantified energy consumption provided in this analysis. According to the regional GHG inventory and projections, these sources account for approximately 12% of the proposed Plan's total GHG emissions in 2035 and approximately 14% in 2050 (see Appendix E to this EIR). Assuming the emission ratios between sectors are similar to the energy ratios between sectors (e.g., vehicles and building energy account for the majority of activity), these sources would only account for a minor fraction of the proposed Plan's energy use. This small additional energy consumption is therefore not discussed further in the impact analysis.

The determination of whether implementing transportation projects and land use changes reflected in the proposed Plan would result in wasteful, inefficient, or unnecessary energy consumption is based on whether the proposed Plan would result in a decrease in per capita energy consumption. Consistent with Appendix F and Appendix G to the CEQA Guidelines, a per capita analysis is appropriate for the proposed Plan, as that analysis would determine whether the energy use under the proposed Plan is more efficient relative to the 2022 baseline year. The analysis

combines electricity (GWh), natural gas (million therms), on-road vehicle fuel consumption (million gallons), and construction equipment diesel consumption (million gallons) into a common unit of energy usage (trillion BTU). Energy consumption from all operational sources was quantified using industry standard emission and conversion factors. A full list of assumptions and energy calculations can be found in Appendix F to this EIR.

Impact Analysis

2035

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

As shown in Table 2-1, in Section 2.0, "Project Description," of this Draft EIR, from 2022 to 2035, the region is forecasted have an increase of 117,056 people (4%), 137,242 housing units (11%), and 67,297 jobs (4%). The 2035 regional SCS land use pattern is shown in Figure 2-4. Approximately 93.3% of the forecasted regional population increases between 2022 and 2035 are in the cities of San Diego (51.3%), Chula Vista (26.1%), and San Marcos (15.8%). Those same three jurisdictions would accommodate approximately 71.4% of new housing units in the region between 2022 and 2035, while the cities of San Diego, San Marcos, and Oceanside would accommodate more than 69.5% of new jobs in the region between 2022 and 2035.

Construction

Construction activities related to growth and land use changes and planned transportation improvements would require the use of energy-consuming equipment for site preparation, grading, building assembly, and equipment installation. The transportation of workers and materials to and from project sites would require the consumption of diesel and gasoline fuels. Medium- and heavy-duty trucks and vans with Gross Vehicle Weight Ratings between 8,500 and 33,000 pounds would typically be used. Energy consumption estimates for on-road construction vehicles and worker commute vehicles are included in operational estimates for transportation network improvements and programs. Also, the use of electricity during construction for temporary buildings, lighting, and other sources is estimated as part of operational energy consumption for regional growth and land use change.

A wide variety of equipment powered through the combustion of liquid fuels may be used. Typical construction equipment would include pavers, trenchers, mixers, cranes, dumpers/tenders, excavators, graders, tractors, trucks, forklifts, dozers, loaders, and scrapers. Internal combustion engines that consume diesel and gasoline typically power these types of equipment and can have outputs ranging from 5 to 750 horsepower. Off-road equipment with diesel engines of 25 horsepower or larger is regulated by CARB for purposes of emissions reductions (13 CCR Section 2449). These regulations require operators to limit idling during operation and to upgrade older equipment with modern engines, which additionally provides benefits for the reduction of fuel consumption.

Construction activities would occur over the duration of the proposed Plan at various locations throughout the proposed Plan Area. The location, size, magnitude, and duration of individual construction activities is unknown at this time. However, construction activities, as compared to operational energy demand, would be short term in nature. The significance determination regarding construction energy is covered under *Operations* because both construction and operational energy are summed to a total and per capita annual energy consumption.

Operations

With respect to operations of the land use changes and planned transportation improvements, baseline energy consumption was calculated for 2022 and compared to years 2035 and 2050.

As shown in Table 4.6-1, total energy use would decrease under the proposed Plan for 2035 compared to the 2022 baseline year. During the same time, the regional population would increase. As a result of the total energy increase and population increase, per capita energy use would decrease from 2022 to 2035.

The decrease in total and per capita energy use is due in part to regulations and programs implemented on the state and regional levels to reduce energy use and emissions of GHGs. These programs include the ACC II regulation, energy efficiency standards for buildings, and water conservation measures. Notably, as stated in Section 4.6.2, House Joint Resolution 88 was signed by the President on June 12, 2025, to formally rescind the

State's ability to enforce the ACC II regulation. Notwithstanding legal uncertainties discussed in Section 4.6.2, for the purpose of this analysis, it is assumed that California will continue to implement the ACC II regulation. Regardless, the proposed Plan's focus on directing future residential and employment growth in areas with a high concentration of transportation options, including fast and frequent transit, Complete Corridors, Flexible Fleets, bikeways and walkways, and shared mobility strategies (i.e., carpool and vanpool), have an important role in reducing per capita energy use because implementation of these strategies would collectively decrease per capita vehicle miles traveled and associated fossil fuel use.

Lastly, as stated in Chapter 2, "Sustainable Community Strategy," of the proposed Plan, the land use pattern incorporated in the proposed Plan results in nearly 80% of future residential development and employment growth occurring in areas with a high concentration of transportation options. Thus, The land use pattern included in the proposed Plan focuses on smart growth and transit-oriented strategies that would, in tandem with the transportation improvement projects of the proposed Plan, result in a reduction in transportation fuel usage.

2035 Conclusion

Implementation of regional growth and land use change and transportation network improvements and programs would not result in an increase in overall per capita energy consumption, or otherwise use energy in an inefficient, wasteful, or unnecessary manner, because per capita energy use would decrease from 2022 to 2035. The decrease in total and per capita energy use is due to a combination of proposal Plan attributes and regulations and programs implemented on the state and regional levels to reduce energy use and emissions of GHGs. Therefore, this impact (EN-1) in the year 2035 would be less than significant.

2050

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

As shown in Table 2-1 in Section 2.0 "Project Description," of this Draft EIR, from 2036 to 2050, the region is forecasted to decrease by 4,112 people (-0.1%), increase by 65,577 housing units (4.8%), and increase by 103,460 jobs (6.2%). The 2050 regional SCS land use pattern is shown in Figure 2-5. The majority of the forecasted regional population decrease between 2036 and 2050 is attributed to the unincorporated jurisdictions, the City of Carlsbad, and the City of El Cajon. Approximately 78.8% of new housing units would be developed in the City of San Diego (51.6%), City of Chula Vista (17.1%), and unincorporated jurisdictions. Similarly, these same three jurisdictions would accommodate approximately 70.3% of new jobs between 2036 and 2050.

As shown in Table 4.6-1, total energy use would increase under the proposed Plan from 2036 to 2050 (using the estimates for 2035 as a representative for 2036) by 2 trillion BTU. This is attributable to the transition of housing development to electricity with a decreased reliance on natural gas. During the same time, the regional population would decrease by 4,112 people (-0.1%), while housing units are projected to increase by 65,577 (4.8%) and jobs (wage and salary) by 103,460 (6.2%). As a result of the total energy increase and shifts in population and jobs, per capita energy use would increase from 2036 to 2050 by 1 million BTU/person (2% greater). The increase in total and per capita energy use is due in part to decreased population by 2050 from 2036. Nevertheless, total per capita energy use would decrease between 2022 and 2050 by 11.8%. This could occur due to the increase in multi-family development under the proposed Plan, as multi-family units are more energy efficient than single-family housing on a per unit basis in terms of electricity and natural gas consumption (Pesantez et al. 2023).

2050 Conclusion

Implementation of regional growth and land use change and transportation network improvements and programs would not result in an increase in overall per capita energy consumption, or otherwise use energy in an inefficient, wasteful, or unnecessary manner. Although between 2036 and 2050, per capita energy would increase by 2% or 1 million BTU/person, because per capita energy use would decrease from 2022 to 2050. Therefore, this impact (EN-1) in the year 2050 would be less than significant.

Table 4.6-1 Total and per Capita Energy Use Under the Proposed Plan: 2022, 2035, 2050

Category	2022 (Baseline) Energy Use	2022 (Baseline) Trillion BTU	2035[1] Energy Use	2035[1] Trillion BTU	2050 Energy Use	2050 Trillion BTU
Regional Growth and Land Use Change						
Electricity (GWh)	17,471	60	21,742	74	23,732	81
Natural Gas (million therms)	622	62	537	54	534	53
Total Regional Growth and Land Use Change	--	**122**	--	**128**	--	**134**
Transportation Network Improvements and Programs						
Vehicles, Gasoline (million gallons)	874	105	645	78	602	72
Vehicles, Diesel (million gallons)	116	16	103	14	106	15
Vehicles, Compressed Natural Gas (million gallons)	10	<1	14	<1	15	<1
Rail, Diesel (million gallons)	3	<1	1	<1	<1	<1
Construction Equipment, Diesel (million gallons)	15	2	15	2	15	2
Total Transportation Network Improvements and Programs	--	**124**	--	**94**	--	**89**
Total Energy Use	--	**245**	--	**222**	--	**224**
Per Capita Energy Use (metric million BTU/person)	75		65		66	
Total Population	3,287,306		3,404,362		3,400,250	
Total Energy Use, Percent Change 2022 to Plan Year	--		-9.5%		-8.8%	
Per Capita Energy Use, Percent Change 2022 to Plan Year	--		-12.6%		-11.8%	

Notes:

GWh = gigawatt-hours, BTU = British thermal units.

Totals may not equal the sum of the numbers because of independent rounding.

1 kWh = 3,412 BTU; 1 therm = 99,976 BTU; 1 gallon, gasoline = 120,286 BTU; 1 gallon, diesel = 137,381 BTU.

[1] Energy consumption in 2035 is also utilized as a representative for 2036, as energy consumption and related emissions between the two years are highly similar.

Source: Calculations prepared by Ascent in 2025 (included as Appendix F to the EIR).

Impacts of the Proposed Plan with Future Climate Change

With future climate change, growth and land use change and transportation network improvements could potentially result in increased inefficient energy use. The proposed Plan will increase energy efficiency through land use planning strategies and transportation network improvements, achieving a decrease in per capita energy use even as population, employment, and housing units are projected to grow under the proposed Plan. However, climate change may result in increased demand for energy on a per capita basis; for example, projected hotter temperatures in the San Diego region may result in people using air conditioning more often.

The proposed Plan's impacts would be worsened by climate change. The proposed Plan would increase energy demand by stimulating population and housing growth, exacerbated by climate change.

MITIGATION MEASURES

No mitigation measures are required for this impact.

EN-2 CONFLICT WITH OR OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY

Analysis Methodology

This analysis evaluates whether implementation of the proposed Plan would obstruct State and local renewable energy and energy efficiency plans, and policies, discussed above in Section 4.6.2, "Regulatory Setting." The applicable State and local plans that address renewable energy and energy efficiency are the SANDAG's Regional Energy Strategy, SANDAG's Priority Climate Action Plan, local CAPs, the 2022 Scoping Plan, and applicable sections of general plans The discussion below examines proposed Plan consistency with adopted plans and policies related to renewable energy and energy efficiency.

Impact Analysis

2035

Regional Growth and Land Use Change

As shown in Table 2-1, in Section 2.0, "Project Description," of this Draft EIR, from 2022 to 2035, the region is forecasted have an increase of 117,056 people (4%), 137,242 housing units (11%), and 67,297 jobs (4%). The 2035 regional SCS land use pattern is shown in Figure 2-4. Approximately 93.3% of the forecasted regional population increases between 2022 and 2035 are in the cities of San Diego (51.3%), Chula Vista (26.1%), and San Marcos (15.8%). Those same three jurisdictions would accommodate approximately 71.4% of new housing units in the region between 2022 and 2035, while the cities of San Diego, San Marcos, and Oceanside would accommodate more than 69.5% of new jobs in the region between 2022 and 2035.

A major objective of the proposed Plan is to reduce GHG emissions from passenger cars and light-duty trucks. Therefore, many transportation network improvements and programs that would be implemented under the proposed Plan would complement these existing and future local efforts to reduce GHG emissions and underlying energy consumption from the on-road transportation sector. The proposed Plan would improve overall regional energy efficiency by complying with all California Energy Code and CALGreen requirements for new construction, as well as by decreasing transportation-related fossil fuel consumption through methods such as facilitating additional active transportation projects and developing complete corridors, as detailed in Chapter 2, "Sustainable Communities Strategy," of the Regional Plan. By facilitating more compact land use development patterns to reduce energy consumption and prioritizing energy efficiency in new structures, the proposed Plan would specifically align with the overarching goals of improved energy efficiency and reduced reliance on fossil fuels.

The proposed Plan would not conflict with the goals of the 2022 Scoping Plan as the land use development pattern would, in conjunction with the transportation improvement projects, result in a regional reduction in per capita VMT for passenger and light-duty vehicles, as discussed in Impact TRA-2 in Section 4.16, "Transportation." In the 2022 Scoping Plan, CARB calls for a statewide VMT reduction, which would directly result in a decrease in

gasoline and diesel fuel usage, which the proposed Plan would achieve in alignment with the targets of SB 375. Therefore, because the proposed Plan would reduce per capita fossil fuel usage, it would not conflict with the energy goals of the 2022 Scoping Plan as it pertains to on-road vehicle energy.

The RES establishes long-term energy-focused goals through 2050 in topic areas such as energy efficiency, renewable energy, distributed generation, transportation fuels, land use and transportation planning, border energy issues, and the green economy. As identified in Section 4.6.2, SANDAG and local governments identified early actions to focus on in the near term which include pursuing a comprehensive building retrofit program to improve efficiency and install renewable energy systems and supporting land use and transportation planning strategies that reduce energy use and GHGs. As described above, the proposed Plan would decrease transportation-related fossil fuel consumption through methods such as developing a SCS land use pattern that includes mixed-use development and transit-oriented development served by complete corridors. By facilitating more compact land use development patterns to reduce per-capita energy consumption by reducing per-capita VMT and prioritizing energy efficiency in new and existing structures, the proposed Plan would align with the overarching goals of improved energy efficiency and reduced reliance on fossil fuels identified in the RES.

The land uses constructed under the proposed Plan would also be subject to the energy and GHG reduction policies of general plans and CAPs, if applicable. Many local general plans and CAPs include policies that encourage energy conservation and energy efficiency in new buildings. Typically, CAPs include various measures and actions to reduce GHG emissions by sector including, but not limited to, transportation, energy, solid waste, water and wastewater, and carbon sequestration. Common measures to reduce emissions from the transportation sector include the promotion of near-zero and zero emission vehicles and associated infrastructure, the deployment of TDM strategies such as iCommute and commuter benefits programs, and the development of Complete Streets that include pedestrian and bicycle programs, among others.

Other examples of local CAP measures that reduce GHG emissions include renovations to existing buildings to be more energy efficient, deployment of solar PV to existing and new residential and nonresidential buildings, additional waste diversion goals exceeding statewide requirements, capture and control of landfill gas emissions, improved water efficiency in existing and new residential and nonresidential development, and tree planting to increase carbon sequestration. These implementing actions would be outside of the scope of the proposed Plan, and therefore their implementation would not be impeded or obstructed by implementation of the regional growth and land use changes and programs included in the proposed Plan. SANDAG has historically supported development of local CAPs and expects to continue with this support, therefore, the proposed Plan would not conflict with a local CAP (see Appendix G for a more detailed analysis). The projected land use pattern included in the proposed Plan would not conflict with the applicability of those local plans and policies to future development within the region.

Implementation of the proposed Plan's regional growth and land use changes would not conflict with or obstruct State and local plans related to energy efficiency or renewable energy, including the PCAP2022 Scoping Plan, RES, local CAPs, and applicable sections of local general plans. The land uses constructed under the proposed Plan would also be subject to the renewable energy policies of a general plan and CAP, if applicable. The projected land use pattern included in the proposed Plan would not conflict with the applicability of those policies to future development within the proposed Plan Area. Thus, the proposed Plan's regional growth and land use changes would not conflict with or obstruct a State or local plan for increasing renewable energy or energy efficiency.

Transportation Network Improvements and Programs

As discussed above, the Warren-Alquist Act established a State policy to reduce wasteful, uneconomical and unnecessary uses of energy. As shown in Table 4.6-1, total gasoline consumption, the primary on-road vehicle fuel in the region, would decrease between 2022 and 2035. As explained in the impact analysis of Impact EN-1, the proposed Plan would not result in wasteful, inefficient, or unnecessary use of energy. Therefore, the proposed Plan's transportation network improvements and programs are consistent with the Warren-Alquist Act policies.

The proposed Plan's transportation network improvements and programs would not conflict with the goals of the 2022 Scoping Plan as the transportation network improvements and programs would, in conjunction with the land

use development pattern, result in a regional reduction in per capita VMT for passenger and light-duty vehicles. In the 2022 Scoping Plan, CARB calls for a statewide VMT reduction, which would directly result in a decrease in gasoline and diesel fuel usage, which the proposed Plan would achieve in alignment with the targets of SB 375. Therefore, because the proposed Plan would reduce per capita fossil fuel usage, Plan's transportation network improvements and programs would not conflict with the energy goals of the 2022 Scoping Plan as it pertains to on-road vehicle energy.

Implementation of the proposed Plan's transportation network improvements and programs would also not conflict with or obstruct state and local plans for increasing renewable energy, including and local general plans and CAPs (see Appendix G of the EIR for an evaluation of the proposed Plan's consistency with local CAPs). City and County policies included in their general plans and CAPs to improve the region's EV infrastructure would continue to apply with implementation of the proposed Plan.

Thus, the planned transportation network improvements in the proposed Plan would not conflict with a State or regional plan related to the increased use of renewable energy or energy efficiency. These improvements would also align with the goals of the RES which includes supporting land use and transportation planning strategies that reduce energy use and GHGs

2035 Conclusion

Regional growth and land use change and transportation network improvements and programs would not conflict with or obstruct a State or regional plan related to the increased use of renewable energy or energy efficiency. Therefore, this impact (EN-2) in the year 2035 is less than significant.

2050

Regional Growth and Land Use Change

As shown in Table 2-1 in Section 2.0 "Project Description," of this Draft EIR, from 2036 to 2050, the region is forecasted to decrease by 4,112 people (-0.1%), increase by 65,577 housing units (4.8%), and increase by 103,460 jobs (6.2%). The 2050 regional SCS land use pattern is shown in Figure 2-5. The majority of the forecasted regional population decrease between 2036 and 2050 is attributed to the unincorporated jurisdictions, the City of Carlsbad, and the City of El Cajon. Approximately 78.8% of new housing units would be developed in the City of San Diego (51.6%), City of Chula Vista (17.1%), and unincorporated jurisdictions. Similarly, these same three jurisdictions would accommodate approximately 70.3% of new jobs between 2036 and 2050.

The proposed Plan is specifically designed to reduce regional VMT and use of fossil fuel consumption in the transportation and building sectors. As GHG emissions are an inherent result of the generation and consumption of fossil-fuel related energy, plans that reduce fossil-fuel related energy consumption, require all-electric development, increase renewable energy generation, and improve energy efficiency are considered an energy-related plans in addition to a GHG-related plan.

A major objective of the proposed Plan is to reduce GHG emissions from passenger cars and light-duty trucks. Therefore, many transportation network improvements and programs that would be implemented under the proposed Plan would complement these existing and future local efforts to reduce GHG emissions from the on-road transportation sector. The proposed Plan would improve overall regional energy efficiency by decreasing transportation-related fossil fuel consumption and would specifically align with the overarching goals of improved energy efficiency and reliance on renewable energy systems.

The proposed Plan would not conflict with the goals of the 2022 Scoping Plan as the land use development pattern would, in conjunction with the transportation improvement projects, result in a regional reduction in per capita VMT for passenger and light-duty vehicles, as discussed in Impact TRA-2 in Section 4.16, "Transportation." In the 2022 Scoping Plan, CARB calls for a statewide VMT reduction, which would directly result in a decrease in gasoline and diesel fuel usage, which the proposed Plan would achieve in alignment with the targets of SB 375. Therefore, because the proposed Plan would reduce per capita fossil fuel usage, it would not conflict with the energy goals of the 2022 Scoping Plan as it pertains to on-road vehicle energy.

The RES establishes long-term energy-focused goals through 2050 in topic areas such as energy efficiency, renewable energy, distributed generation, transportation fuels, land use and transportation planning, border energy issues, and the green economy. As described above, the proposed Plan would decrease transportation-related fossil fuel consumption through methods such as developing a SCS land use pattern that includes mixed-use development and transit-oriented development served by complete corridors. By facilitating more compact land use development patterns to reduce per-capita energy consumption by reducing per-capita VMT and prioritizing energy efficiency in new and existing structures, the proposed Plan would align with the overarching goals of improved energy efficiency and reduced reliance on fossil fuels identified in the RES.

The land uses constructed under the proposed Plan would also be subject to the energy and GHG reduction policies of a general plan and CAP, if applicable. Many local general plans and CAPs include policies that encourage the energy conservation and energy efficiency in new buildings. Typically, CAPs include various measures and actions to reduce GHG emissions by sector including, but not limited to, transportation, energy, solid waste, water and wastewater, and carbon sequestration. Common measures to reduce emissions from the transportation sector include the promotion of near-zero and zero-emission vehicles and associated infrastructure, the deployment of TDM strategies such as iCommute and commuter benefits programs, and the development of Complete Streets that include pedestrian and bicycle programs, among others.

Other examples of local CAP measures that reduce GHG emissions include renovations to existing buildings to be more energy efficient, deployment of solar PV to existing and new residential and nonresidential buildings, additional waste diversion goals exceeding statewide requirements, capture and control of landfill emissions, improved water efficiency in existing and new residential and nonresidential development, and tree planting to increase carbon sequestration. These implementing actions would be outside of the scope of the proposed Plan and SANDAG's direct authority and therefore, their implementation would not be impeded or obstructed by implementation of the regional growth and land use changes and programs included in the proposed Plan. SANDAG has historically invested in the development of local CAPs and expects to continue with this support, therefore, the proposed Plan would not conflict with a local CAP (see Appendix G for a more detailed analysis).The projected land use pattern included in the proposed Plan would not conflict with the applicability of those plans and policies to future development within the proposed Plan Area.

Implementation of the proposed Plan's regional growth and land use changes would not conflict with or obstruct State and local plans for increasing renewable energy, including the PCAP, 2022 Scoping Plan, RES, local CAPs, and applicable sections of local general plans. The land uses constructed under the proposed Plan would also be subject to the renewable energy policies of a general plan and CAP, if applicable. existing CAPS currently do not extend to 2050, but renewable energy measures in these CAPs would likely continue beyond the CAP horizon years. The projected land use pattern included in the proposed Plan would not conflict with the applicability of those policies to future development within the proposed Plan Area. Thus, the proposed Plan's regional growth and land use changes would not conflict with or obstruct a State or local plan for increasing renewable energy or energy efficiency.

Transportation Network Improvements and Programs

Similar to the analysis of Impact EN-2 for the year 2035, implementation of the proposed Plan's transportation network improvements and programs through 2050 would not conflict with or obstruct State and local plans for increasing energy efficiency, including the Warren-Alquist Act, the Requirements for In-Use Off-Road Diesel-Fueled Fleets, and ACC II regulation. As discussed above, the Warren-Alquist Act established a statewide policy to reduce wasteful, uneconomical and unnecessary uses of energy. As shown in Table 4.6-1, total gasoline consumption, the primary on-road vehicle fuel in the region, would decrease between 2022 and 2050. As explained in the impact analysis of EN-1, the proposed Plan would not result in wasteful, inefficient, or unnecessary use of energy. Therefore, the proposed Plan's transportation network improvements and programs are consistent with the Warren-Alquist Act policies.

The proposed Plan's transportation network improvements and programs would not conflict with the goals of the 2022 Scoping Plan as the transportation network improvements and programs would, in conjunction with the land

use development pattern, result in a regional reduction in per capita VMT for passenger and light-duty vehicles. In the 2022 Scoping Plan, CARB calls for a statewide VMT reduction, which would directly result in a decrease in gasoline and diesel fuel usage, which the proposed Plan would achieve in alignment with the targets of SB 375. Therefore, because the proposed Plan would reduce per capita fossil fuel usage, the proposed Plan's transportation network improvements and programs would not conflict with the energy goals of the 2022 Scoping Plan as it pertains to on-road vehicle energy.

Implementation of the proposed Plan's transportation network improvements and programs would also not conflict with or obstruct State and local plan for increasing renewable energy, including the LCFS and local general plans and CAPs (see Appendix G of the EIR for an evaluation of the proposed Plan's consistency with local CAPs). City and County policies included in their general plans and CAPs to improve the region's EV infrastructure would continue to apply with implementation of the proposed Plan.

Thus, the planned transportation network improvements in the proposed Plan would not conflict with a State or regional plan related to the increased use of renewable energy or energy efficiency. These improvements would also align with the goals of the RES which includes supporting land use and transportation planning strategies that reduce energy use and GHGs

2050 Conclusion
Regional growth and land use change and transportation network improvements and programs would not conflict with or obstruct a State or regional plan related to the increased use of renewable energy or energy efficiency. Therefore, this impact (EN-2) in the year 2050 is less than significant.

Impacts of the Proposed Plan with Future Climate Change
With future climate change, growth and land use change and transportation network improvements would cause similar impacts to State or regional plan related to the increased use of renewable energy or energy efficiency.

MITIGATION MEASURES

No mitigation measures are required.

4.6.5 Cumulative Impacts Analysis

C-EN-1 MAKE A CUMULATIVELY CONSIDERABLE CONTRIBUTION TO ADVERSE EFFECTS ON ENERGY

The area of geographic consideration for cumulative energy impacts is the Southern California and northern Baja region. Land use changes and the transportation system would influence the demand for future energy development or the location and need for new or additional energy infrastructure across the Southern California and northern Baja region. The provision of energy can be linked to jurisdictions, but often service providers and their infrastructure cover large areas. Thus, it is necessary to consider the Southern California and northern Baja region as a whole and the overall amount of development that would generate additional pressure and demand on energy use and generation facilities.

A hybrid approach to the cumulative energy analysis allows for an overarching discussion of regional impacts associated with general patterns of regional urbanization, growth, and land use changes that would create new or additional energy use, modify demand for the provision of energy, or dictate where new or expanded energy infrastructure is located. Discussion of specific projects also allows for consideration of individual large-scale existing and probable future projects with known impacts on energy resources.

Growth, land use change, and transportation system improvements occurring throughout the Southern California and northern Baja regions would impact energy demand, development, and supply. Cumulative energy impacts would result if there were an increase in overall per capita energy consumption or inefficient, wasteful, or unnecessary energy use; or obstruction of State or local renewable energy and energy efficiency plans, regulations, and policies.

Utilities that operate in Southern California and the Northern Baja region have adopted long-term plans that forecast the demand for services and identify specific facilities projects required to meet projected demand and needs, such as the San Diego Gas & Electric Company (SDG&E) *Final 2024 Renewables Portfolio Standard Procurement Plan* (SDG&E 2025). Additionally, the SANDAG Regional Energy Strategy (RES) serves as the energy policy blueprint for the San Diego region through 2050 to support decision-making as the region strives to meet the energy needs of the growing population (SANDAG 2014). In 2014, a technical update of the RES was completed to inform the development of the 2021 Regional Plan. The SCAG 2024-2050 RTP/SCS (Connect SoCal 2024) serves as the long-range transportation plan for the Southern California region which include the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. CEC developed the California Energy Demand 2024-2040 Revised Forecast in accordance with SB 1389 (Bowen and Sher, Chapter 568, Statutes of 2002), which requires CEC to assess and forecast of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices with the purpose of developing energy policies to conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety (PRC Section 25301(a)). These plans are considered and relied on for this cumulative analysis.

Impacts of the Proposed Plan

As detailed above in Impact EN-1, total energy use and per capita energy use in 2035 and 2050 would be less than total energy use and per capita energy use in 2022. Therefore, the proposed Plan would not result in an increase in overall per capita energy consumption or otherwise use energy in an inefficient, wasteful, or unnecessary manner in 2035 or 2050, and the impact would be less than significant (Impact EN-1).

As detailed in Impact EN-2, the proposed Plan would comply with the State and local plans aimed at reducing energy consumption and promoting renewable energy. Thus, this impact would be less than significant in 2035 and 2050 (Impact EN-2).

Impacts of Related Projects

Multiple energy projects in various stages of planning, permitting, and construction are ongoing in the Southern California and northern Baja region. Some of these include the Cobalt Solar Project (Phase 2 of the Crimson Solar Project), California (CDFW 2025); Palen Solar (DOI 2024), Victory Pass Solar in Riverside County (BLM 2025); Pio Pico Energy Center in San Diego County (CEC 2018); Comino Solar project in Kern County (BLM 2024); and Black Rock 5 & 6 Geothermal Power Project in Imperial County (CEC 2024f). Additionally, a multitude of current and ongoing electric system and natural gas infrastructure upgrade projects are planned throughout the region. All energy projects requiring CEC approval or licensing must go through the CEC permitting process, which is a certified regulatory program under CEQA. The CEC license/certification subsumes all requirements of State, local, or regional agencies otherwise required before new infrastructure is constructed.

Other projects that would result in energy consumption during construction and operation in the region include the California High-Speed Rail Train (HST) Los Angeles–San Diego Segment, Navy Old Town Revitalization Project, Midway Rising Specific Plan, San Diego International Airport Development Plan, City of San Diego Pure Water North City Project, and San Diego Unified Port District Port Master Plan Update.

The HST environmental document states that, while the project would have a potentially significant effect related to long-term electric power consumption when viewed on a system-wide basis, it represents a more energy-efficient mode of transportation than travel by aircraft or car, such that the HST system would result in an overall reduction in total energy consumption. The EIR/EIS states that the HST system would reduce energy consumption overall and any localized energy impacts would be avoided through proper planning and design of power distribution systems and their relationship with the overall power grid (HSRA 2005). Energy impacts were found to be less than significant for the City of San Diego Pure Water North City Project (City of San Diego 2018), and were not addressed in the Navy Old Town Revitalization Draft EIS (Navy 2021).

Impacts of Projections in Adopted Plans

The Connect SoCal 2024 EIR identified that implementation of Connect SoCal 2024 would contribute to a cumulatively considerable increase in impacts related to wasteful, inefficient, or unnecessary consumption of energy resources conflicts with or obstruction of plans for renewable energy or energy efficiency (SCAG 2024).

The CEC California Energy Demand 2024-2040 Revised Forecast report updates forecasts for electricity and end-user natural gas in California and for major utility planning areas within the state. The forecast includes estimates of additional achievable energy efficiency, electricity consumption, peak demand, and natural gas consumption savings. While there is no associated environmental analysis, the forecast does show the continued increase in demand for energy supplies in the state through 2040 (CEC 2024a).

The PCAP identifies measures that could be carried out by 2030 to reduce GHGs and improve air quality in the region. While stakeholders in the region are working to reduce GHG emissions from all sectors, the PCAP focuses on specific measures where stakeholders and partners have the authority and jurisdiction for implementation. The focus of GHG reduction strategies in the PCAP is in the transportation, building energy, energy supply, and water sectors.

Cumulative Impacts and Impact Conclusions

2035

The proposed Plan would not result in an increase in overall per capita energy consumption or otherwise use energy in an inefficient, wasteful, or unnecessary manner in 2035. Additionally, the proposed Plan would result in a decrease in total and per capita energy use, including a decrease in fossil fuel energy. In addition, regional growth and land use change and transportation network improvements and programs would not conflict with or obstruct a State or regional plan related to the increased use of renewable energy or energy efficiency in 2035. Because the proposed Plan does not make a significant incremental contribution to these cumulative energy impacts, and because related projects and adopted plans are expected to efficiently use energy and be consistent with State and local renewable energy and energy efficiency plans, cumulative energy impacts would not be significant, and the proposed Plan would not result in cumulatively considerable impacts in 2035. Impacts would be less than significant.

2050

The proposed Plan would not result in an increase in overall per capita energy consumption or otherwise use energy in an inefficient, wasteful, or unnecessary manner in 2050 because the proposed Plan would result in a decrease of total and per capita energy use, including a decrease in fossil fuel energy. In addition, regional growth and land use change and transportation network improvements and programs would not conflict with or obstruct a State or regional plan related to the increased use of renewable energy or energy efficiency in 2050. Because the proposed Plan does not make a significant incremental contribution to these cumulative energy impacts, and because related projects and adopted plans are expected to efficiently use energy and be consistent with State and local renewable energy and energy efficiency plans, cumulative energy impacts would not be significant, and the proposed Plan would not result in cumulatively considerable impacts in 2050. Impacts would be less than significant.

MITIGATION MEASURES

No mitigation measures are required.