5.6 ENERGY

5.6.1 INTRODUCTION

This section describes the existing regulatory and environmental settings, and analyzes the proposed Project's potential to result in impacts due to wasteful, inefficient, or unnecessary consumption of energy resources; or conflict with a plan for renewable energy or energy efficiency. Where significant impacts remain despite compliance with the existing regulatory framework, feasible mitigation measures are recommended to avoid or reduce the Project's potentially significant environmental impacts.

Proposed General Plan

Proposed General Plan-related information in this section is based on methodology and information discussed in **Section 5.6.3: Methodology for Evaluating Impacts** and **5.6.4: Environmental Setting**, respectively. Energy modeling for the proposed General Plan is included in the following study:

- *Proposed General Plan Energy Modeling*; see **Appendix 5.6-1 GP: Energy Modeling**

Barstow International Gateway Project (BIG)

BIG-related information in this section is based in part on the following studies:

- *Barstow International Gateway Air Quality Technical Report*; see **Appendix 5.3 BIG-1: Air Quality Technical Report**
- *BIG Energy Assessment*; see **Appendix 5.6 BIG-1: Energy Assessment**
- *Barstow International Gateway Greenhouse Gas Emissions Assessment*; see **Appendix 5.-1: Greenhouse Gas Emissions Assessment**
- *Barstow International Gateway CEQA Assessment –Transportation Analysis*; see **Appendix 5.15 BIG-1**: **CEQA Assessment –Transportation Analysis**
- *Barstow International Gateway Level of Service Assessment Technical Report*; see **Appendix 5.15 BIG-2***:* **Level of Service Assessment –Transportation Analysis**
- *Barstow International Gateway Utility Assessment Technical Report*; see **Appendix 5.17 BIG-1: Utility Assessment Technical Report**
- *Water Supply Assessment and Verification for Barstow International Gateway*; see **Appendix 5.17 BIG-2: Water Supply Assessment**

Summary of Findings – Proposed General Plan

The proposed General Plan includes policies that would support energy conservation, renewable energy use, and increased energy efficiency. Implementation of the proposed General Plan would not have the potential to result in wasteful or inefficient use of energy resources and would not conflict with plans for renewable energy or energy efficiency. Overall, energy impacts would be less than significant.

Summary of Findings – Barstow International Gateway

The BIG Project would require substantial energy, including electricity and diesel fuel, during construction due to lighting and construction equipment. BIG would also require substantial energy throughout operations due to incorporation of electric cargo-handling equipment. During construction, electricity would be needed for water extraction, concrete and asphalt batch plants, and construction trailers, with the majority coming from Southern California Edison (SCE). Diesel generators would power most mobile equipment, and renewable diesel fuel would be used for heavy-duty equipment.

Operationally, the BIG Project would require substantial electricity and fuel. Electrical demands include lighting, heating, ventilation, electric hostler charging, cranes, and more. A solar farm would help offset a portion of the electricity needs. Diesel fuel would be consumed by hybrid-electric cranes, heavy-duty trucks, and locomotives, while gasoline would be needed for worker commutes and vendor trips.

Measures to minimize or mitigate energy use, such as renewable diesel for equipment and the installation of solar panels, are included in this section. BIG aims to reduce overall diesel consumption by converting heavy-duty truck trips to train trips. Mitigation measures would aim to minimize wasteful and unnecessary energy use while complying with State and local energy efficiency regulations. Overall, the BIG project's construction and operational energy impacts would be reduced to less than significant levels through compliance with existing regulatory requirements and implementation of mitigation measures.

5.6.2 REGULATORY SETTING

Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (42 United States Code [U.S. Code], Chapter 91) serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, it has been regularly updated and amended through subsequent laws and regulations. This act is the foundation of most federal energy requirements.

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission (FERC) is an independent agency that regulates the interstate transmission of natural gas, oil, and electricity. FERC also regulates natural gas and hydropower projects. As part of that responsibility, FERC regulates the transmission and sale of natural gas for resale in interstate commerce, the transmission of oil by pipeline in interstate commerce, and the transmission and wholesale sales of electricity in interstate commerce. FERC also licenses and inspects private, municipal, and state hydroelectric projects; approves the siting and abandonment of interstate natural gas facilities, including pipeline, storage, and liquefied natural gas facilities; oversees environmental matters related to natural gas and hydroelectricity projects as well as major electricity policy initiatives; and administers accounting and financial reporting regulations and the conduct of regulated companies.

Fuel Economy Standards

Corporate Average Fuel Economy (CAFE) standards are federal regulations that are set to reduce energy consumed by on-road motor vehicles. The National Highway Traffic Safety Administration (NHTSA) regulates the standards, and the U.S. Environmental Protection Agency (U.S. EPA) measures vehicle fuel efficiency. The standards specify minimum fuel consumption efficiency standards for new automobiles sold in the United States (U.S.). On May 19, 2009, President Obama issued a Presidential Memorandum proposing a new national fuel economy program that adopts uniform federal standards to regulate both fuel economy and greenhouse gas (GHG) emissions. The program covers model year 2012 to model year 2016 and ultimately requires an average fuel economy standard of 35.5 miles per gallon (mpg) in 2016 (39 mpg for cars and 30 mpg for heavy-duty trucks). In response to the Presidential Memorandum, an October 2010 Regulatory Announcement developed with support from industry, the State of California, and environmental stakeholders was issued by the U.S. EPA and the U.S. Department of Transportation.

On August 28, 2012, the U.S. EPA and the NHTSA issued a joint final rule to establish 2017 through 2025 GHG emissions and CAFE standards. To further California's support of the national program to regulate emissions, the California Air Resources Board (CARB) submitted a proposal that would allow automobile manufacturer compliance with the U.S. EPA's average fuel economy regulations to show conformity with California's requirements for the same model years. The Final Rulemaking Package was filed on December 6, 2012, and the final rulemaking became effective on December 31, 2012. Building on Advanced Clean Cars (ACC) I, rulemaking for ACC II was finalized on November 30, 2022. This further accelerates California's transition to zero emission vehicles by setting a zero-emission vehicle sales target of 100 percent by 2035 instead of ACC I's target of 35 percent.

The NHTSA is responsible for establishing vehicle standards and for revising existing standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the U.S. On June 7, 2024, the NHTSA finalized their CAFE standards for model years 2030 to 2035 (49 U.S. Code § 32902). The final rule requires an industry-wide fuel average of approximately 50.4 mpg for passenger cars and light-duty trucks in model year 2031 and an industry fleet-wide average for heavy-duty pickup trucks and vans of roughly 2.851 gallons per 100 miles in model year 2035 (NHTSA, 2024).

In response to President Trump's Executive Order (EO) 14154 (Unleashing American Energy)[1], published on January 20, 2025, the U.S. EPA announced its intention to reconsider regulations and actions that rely on the Endangerment Finding on March 12, 2025. This includes the CAFE standards. On June 6, 2025, the NHTSA published an interpretive rule that establishes the NHTSA's authority to revise the CAFE standards without consideration of electric vehicles (EV). On July 29, 2025, the U.S. EPA released its proposal to rescind the 2009 Endangerment Finding and repeal all GHG emission standards for light-duty, medium-duty, and heavy-duty vehicles and engines pursuant to Clean Air Act Section 202(a) (U.S. EPA, 2025). The proposed rule would remove GHG-related provisions from 40 CFR Part 600 without affecting provisions

[1] An EO is a directive from the President of the United States that has the force of law and directs actions by government officials and agencies. EOs can be subject to judicial review and can be overturned by Congress or a new President.

related to CAFE standards and fuel economy labeling. (Vol. 90 Federal Register, No. 146, 36288.) Nonetheless, implementation of these standards remains uncertain.

Energy Policy Act of 2005

On August 8, 2005, President George W. Bush signed the National Energy Policy Act of 2005 (42 U.S. Code § 13201 et seq.) into law. The Energy Policy Act of 2005 sets equipment energy efficiency standards and seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on those resources. Under the Energy Policy Act of 2005, consumers and businesses can obtain federal tax credits for purchasing fuel efficient appliances and products, including hybrid vehicles; constructing energy-efficient buildings; and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary micro-turbine power plants, and solar power equipment.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act (EISA, Public Law 110-140) was signed into law by President George W. Bush on December 19, 2007. The Act's goal is to achieve energy security in the United States by increasing renewable fuel production, improving energy efficiency and performance, protecting consumers, improving vehicle fuel economy, and promoting research on GHG capture and storage. Under the EISA, the Renewable Fuel Standard (RFS) program was expanded in several key ways:

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

The RFS program lays the foundation for reducing GHG emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector.

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

On April 9, 2025, President Trump issued EO 14270 (Zero-Based Regulatory Budgeting to Unleash American Energy) calling for the sunset of various environmental regulations. The order affects pieces of several landmark energy and environmental legislation, including the EISA of 2007.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act of 1968 authorized the U.S. Department of Transportation to regulate pipeline transportation of flammable, toxic, or corrosive natural gas and other gases as well as the transportation and storage of liquefied natural gas. The Pipeline and Hazardous Materials Safety Administration within the Department of Transportation develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's 2.6-million-mile pipeline transportation system.

State

California Code of Regulations Title 13 (Off-Road Regulation)

In 2022, the California Air Resources Board (CARB) amended California Code of Regulations (CCR) Title 13 § 2449.1 to add a requirement to off-road in-use fleets. Unless the fleet is comprised entirely of Tier 4 vehicles or operates in captive attainment areas, starting in January 2024, all in-use off-road fleets are required to use 99 or 100 percent renewable diesel where possible. If fleets cannot procure renewable diesel, owners must keep records describing the normal refueling methods, their documented attempts to procure renewable diesel and proof that shows they were not able to procure renewable diesel.

California Code of Regulations Title 20 (2006 Appliance Efficiency Regulations)

The California Energy Commission (CEC) adopted the Appliance Efficiency Regulations (Title 20, CCRs §§ 1601 through 1608) on October 11, 2006. The regulations were approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances such as computers, lights, and compressors. While these regulations are now often viewed as “business-as-usual,” they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

California Code of Regulations Title 24 (California Building Standards Code)

CCR Title 24, also known as the California Building Standards Code, includes regulations for how buildings are designed and constructed, and are intended to ensure the maximum structural integrity and safety of private and public buildings. Title 24 is composed of 12 "Parts." The Title 24 Parts relevant to energy are described below.

Title 24 Part 3 (California Electrical Code). The California Electrical Code contains electrical design and construction standards.

Title 24 Part 6 (California Energy Code). The California Building Standards Commission created the California Energy Code in 1978 as part of the California Building Standards Code (CCR Title 24) to establish statewide building energy efficiency standards to reduce California’s energy use. These standards include provisions applicable to most building types, including residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards (CEC, 2023a). These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air Conditioning Systems
- Heat Pumps
- Water Chillers
- Gas- and Oil-Fired Boilers
- Cooling Equipment
- Water Heaters and Equipment
- Pool and Spa Heaters and Equipment
- Gas-Fired Equipment Including Furnaces and Stoves/Ovens
- Windows and Exterior Doors
- Joints and Other Building Structure Openings (envelope)
- Insulation and Cool Roofs
- Lighting Control
- Devices

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating, indoor and outdoor lighting systems, as well as equipment in non-residential, high-rise residential, and hotel or motel buildings. Mandatory requirements for low-rise residential buildings cover indoor and outdoor lighting, fireplaces, space cooling and heating equipment (including ducts and fans), and insulation of the structure, foundation, and water piping. In addition to the mandatory requirements, the standards call for further energy efficiency that can be provided through a choice between performance and prescriptive compliance approaches. In buildings designed for mixed-use (e.g., commercial and residential), each section must meet the standards applicable to that type of occupancy; however, some exceptions may apply that require proportional consideration of different uses of the building. For instance, photovoltaic (PV) requirements only apply if covered occupancies account for at least 80 percent of the building's conditioned floor area.

The performance approach set forth under these standards provides for the calculation of an energy budget for each building and allows flexibility in building systems to meet the budget. The energy budget addresses space-conditioning (cooling and heating), lighting, and water heating. Compliance with the budget is determined using a CEC-approved computer software energy model. The alternative prescriptive standards require demonstrating compliance with specific minimum efficiency for components of the building such as building envelope insulation R-values, fenestration (areas, U-factor and solar heat gain coefficients of windows and doors) and heating and cooling, water heating and lighting system design requirements. These requirements vary depending on the building's location in the State's 16 climate zones.

California's Building Energy Efficiency Standards (CBEES) are updated on an approximately three-year cycle as technology and methods evolve. As a result of new law under Assembly Bill (AB) 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the standards went into effect in June 2001. The CEC then initiated an immediate follow-on proceeding to consider and adopt updated standards that could not be completed during the emergency proceeding. The 2013 Standards went into effect July 1, 2014. The 2016 CBEES went into effect on January 1, 2017, and improved upon the 2013 CBEES for new construction of, and additions and alterations to, residential and non-residential buildings. The 2019 CBEES were adopted on May 9, 2018, and took effect on January 1, 2020 (for building permit applications submitted on or after that date). The 2019 standards require solar photovoltaic systems for new homes; establish requirements for newly constructed healthcare facilities; encourage demand-responsive technologies and improving the thermal envelope of residential structures; update indoor and outdoor lighting making maximum use of light-emitting diode (LED) technology in non-residential buildings; and enable the use of highly efficient air filters to trap hazardous particulates and improve kitchen ventilation systems in residential and non-residential buildings. Under the 2019 standards, homes were estimated to use about 53 percent less energy and non-residential buildings will use about 30 percent less energy than buildings under the 2016 standards. The CBEES 2019 updates focused on several key areas that improved the energy efficiency of newly constructed buildings and additions and alterations to existing buildings and included requirements that enabled both demand reductions during critical peak periods and future solar electric and thermal system installations.

On August 11, 2021, the CEC adopted the 2022 Energy Code. In December, it was approved by the California Building Standards Commission for inclusion into the California Building Standards Code. Among other updates like strengthened ventilation standards for gas cooking appliances, the 2022 Energy Code includes updated standards in three major areas:

- New electric heat pump requirements for residential uses, schools, offices, banks, libraries, retail, and grocery stores, depending on the climate zone.
- The requirement of electric-ready requirements for all new residential construction including the addition of circuitry for electric heat pump, cooktop, and clothes drying appliances, to allow for the future conversion from natural gas to electricity.
- The expansion of solar photovoltaic and battery storage standards to additional land uses including high-rise multifamily residences (i.e., more than three stories), hotels and motels, tenant spaces, offices, (including medical offices and clinics), retail and grocery stores, restaurants, schools, and civic uses (including theaters auditoriums, and convention centers), and mandatory solar-ready requirements for all new construction that does not include rooftop PV.

The CEC adopted the 2025 Energy Code on September 11, 2024, further advancing the State's building decarbonization goals. The 2025 Energy Code requires electric heat pumps for space and water heating in most new residential and commercial buildings, expands solar photovoltaic and battery storage requirements to more building types, and mandates electric-ready infrastructure to support future appliance electrification. Projects whose permit applications are applied for on or after January 1, 2026, must comply with the 2025 Energy Code.

Title 24 Part 11 California Green Building Standards (CALGreen) Code. The CALGreen Code, commonly referred to as CALGreen, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development. CALGreen Code require new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. The CALGreen Code also provides voluntary tiers and measures that local governments may adopt which encourage or require additional measures in the five green building topics. The most recent update to CALGreen was published in July 2022 and took effect January 1, 2023, with a January 2023 errata and a supplemental intervening cycle update effective July 1, 2024 (ICC, 2023). As with the CBEES, the 2025 CALGreen Code was adopted on September 11, 2024, and becomes effective starting January 1, 2026.

2008 California Energy Action Plan Update

The 2008 Energy Action Plan Update provides a status update to the 2005 Energy Action Plan II, which is the State of California's principal energy planning and policy document (CPUC and CEC, 2008, p. 2). The Energy Action Plan Update continues the original Energy Action Plan (adopted in 2003), describes a coordinated implementation plan for State energy policies, and identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. First-priority actions to address California's increasing energy demands are energy efficiency, demand response (i.e., reduction of customer energy usage during peak periods in order to address system reliability and support the best use of energy infrastructure), and the use of renewable sources of power. If these actions are unable to satisfy the increasing energy and capacity needs, the plan supports clean and efficient fossil-fired generation.

California Energy Commission California Energy Demand Forecast

The CEC assesses and forecasts the State's energy systems and trends. This includes forecasts for electricity consumption, retail sales, and peak demand for each of the five major electricity planning areas and the whole State. The CEC Forecast include three demand scenarios (low, mid, and high) to capture a reasonable range of demand outcomes over the next 14 years.[2]

- **Low-Demand.** The low-demand energy scenario includes lower economic or demographic growth and assumes higher rates and higher self-generation impacts.
- **Mid-Demand.** The mid-demand energy scenario uses input assumptions at levels between low and high scenarios. These scenarios are referred to as the baseline cases, meaning they do not include the additional achievable energy efficiency savings.
- **High-Demand.** The high-demand energy scenario incorporates relatively high economic or demographic growth and climate change impacts as well as relatively low electricity rates and self-generation impacts.

The most recent update to CEC Forecasts was in 2023 for the mid-demand scenario.

California Public Utilities Commission

In September 2008, the California Public Utilities Commission (CPUC) adopted the Long-Term Energy Efficiency Strategic Plan, which provides a framework for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision, as well as goals for each economic sector, identifying specific near-term, mid-term, and long-term strategies to assist in achieving these goals. This plan sets forth the following four goals, known as Big Bold Energy Efficiency Strategies, to achieve reductions in energy demand:

- All new residential construction in California will be zero net energy by 2020.
- All new commercial construction in California will be zero net energy by 2030.

[2] The latest low-demand scenario forecast as of this analysis is from CEC's 2021-2035 forecast while baseline scenarios have been updated annually.

- Heating, Ventilation and Air Conditioning will be transformed to ensure that its energy performance is optimal for California's climate.
- All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

With respect to the commercial sector, the Long-Term Energy Efficiency Strategic Plan notes that commercial buildings, which include schools, hospitals, and public buildings, consume more electricity than any other end-use sector in California. The commercial sector's five-billion-plus square feet of space accounts for 38 percent of the State's power use and over 25 percent of natural gas consumption. Lighting, cooling, refrigeration, and ventilation account for 75 percent of all commercial electric use, and space heating, water heating, and cooking account for over 90 percent commercial natural gas use. In 2006, schools and colleges were in the top five facility types for electricity and natural gas consumption, accounting for approximately 10 percent of State's electricity and gas use.

The CPUC and CEC have adopted the following goals to achieve zero net energy levels by 2030 in the commercial sector:

- **Goal 1:** New construction will increasingly embrace zero net energy performance (including clean, distributed generation), reaching 100 percent penetration of new starts in 2030.
- **Goal 2:** 50 percent of existing buildings will be retrofit to zero net energy by 2030 through achievement of deep levels of energy efficiency and with the addition of clean distributed generation.
- **Goal 3:** Transform the commercial lighting market through technological advancement and innovative utility initiatives.

Renewable Portfolio Standard

Established in 2002, California's Renewables Portfolio Standard (RPS) requires electricity providers (i.e., utilities, cooperatives, and community choice aggregators) to ensure that renewable energy constitutes a specified minimum portion of their electric load. Since then, the State Legislature has modified, increased, and accelerated the RPS several times. Relevant RPS laws and EOs are summarized below.

Senate Bill (SB) 1078. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017.

SB 107. SB 107 (Chapter 464, Statutes of 2006) changed the 20 percent renewable target date to 2010.

EO S-14-08. In November 2008, the Governor signed EO S-14-08, which expands the State's Renewable Portfolio Standard to 33 percent renewable power by 2020.

EO S-21-09. In September 2009, the Governor continued California's commitment to the Renewable Portfolio Standard by signing EO S-21-09, which directs the CARB under its AB 32 authority to enact regulations to help the State meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020. In addition, CARB is to design emissions reduction measures, adopt regulations requiring the reporting and verification of GHG emissions, including accounting for GHG emissions from all electricity consumed in the State, and develop emissions reduction measures, including limits on emissions of GHGs applied to electricity and natural gas providers serving customers in California by 2020.

SB 2 (1X). In April 2011, the Governor signed SB 2 (1X), which legislated the prior EO S-14-08 renewable standard, which required California energy providers to buy 33 percent of their energy from clean, renewable energy sources by 2020.

SB 350. SB 350 (CLI, 2015) extended the RPS to 50 percent by 2030, with interim targets of 40 percent by 2024 and 45 percent by 2027. The bill also requires that 65 percent of RPS procurement must be derived from long-term contracts (10 years or more) starting in 2021.

SB 100. SB 100 (CLI, 2018) increased California's renewable electricity portfolio to 60 percent by 2030, with interim targets of 44 percent by 2024 and 52 percent by 2027. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

SB 1020. SB 1020 (CLI, 2022) provides additional goals for the path to the 2045 goal of 100 percent clean electricity retail sales. It creates a target of 90 percent clean electricity retail sales by 2035 and 95 percent clean electricity retail sales by 2040.

League to Save Lake Tahoe, Mountain Area Preservation, et al. v. County of Placer et al., (75 Cal. App. 5th 63)

Recent case law (*League to Save Lake Tahoe, Mountain Area Preservation, et al./California Clean Energy Committee v. County of Placer, et al*. (Sierra Pacific Industries, et al., Real Parties in Interest) (2022) 75 Cal. App. 5th 63) has indicated that an EIR analysis of a project's impacts on energy resources must include an analysis discussing whether the proposed project incorporates any renewable resources and the potential to increase renewable energy use.

State CEQA Guidelines Appendix F: Energy Conservation

In 1975, largely in response to the oil crisis of the 1970s, the California State Legislature adopted AB 1575, which created the CEC. The CEC's statutory mission is to forecast future energy needs, license thermal power plants of 50 megawatts (MW) or larger, develop energy technologies and renewable energy resources, plan for and direct State responses to energy emergencies, and promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended PRC § 21100(b)(3) to require EIRs to mitigate significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy by a project. In addition, CEQA Guidelines § 15126.4, which was adopted in 1998, requires that an EIR describe feasible mitigation measures which could minimize adverse impacts, including where relevant, inefficient and unnecessary consumption of energy. Thereafter, the State Resources Agency created State CEQA Guidelines Appendix F – Energy Conservation, which provides guidance on analysis of a project's energy use.

State CEQA Guidelines Appendix F assists EIR preparers in determining whether a project would result in the inefficient, wasteful, and unnecessary use of energy. Pursuant to State CEQA Guidelines Appendix F, an EIR must include a "discussion of the potential energy impacts of proposed projects…" However, because lead agencies have not consistently included such analysis in their EIRs, California's Natural Resources Agency amended State CEQA Guidelines Appendix F in 2009 "to ensure that lead agencies comply with the substantive directive in § 21100(b)(3)." State CEQA Guidelines Appendix F lists environmental impacts and mitigation measures that an EIR may include CEQA requires that EIRs include a "discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy." (Public Resources Code [PRC] § 21100(b)(3)) Potential impacts that may be discussed include:

- A project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of a project including construction, operation, maintenance, or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of a project on local and regional energy supplies and on requirements for additional capacity.
- The effects of a project on peak and base period demands for electricity and other forms of energy.
- The degree to which a project complies with existing energy standards.
- The effects of a project on energy resources.
- A project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Energy Storage

California has set ambitious long-term goals for energy storage beyond 2026 to support its clean energy and climate goals. The State aims to reach 100 percent carbon-free electricity by 2045, which will require substantial investment in renewable energy sources like wind and solar, as well as energy storage technologies to balance the variability of these sources.

The California Independent System Operator (CAISO) has a total energy storage capacity of more than 3,160 MW as of June 2022 (CAISO, 2022). This includes both large-scale and distributed energy storage systems, such as batteries, pumped hydroelectric storage, and thermal storage. CAISO is responsible for managing the electricity grid for much of California, and it has set a target of adding 3,300 MW of additional energy storage capacity by 2024 to support the integration of more renewable energy sources like wind and solar. As part of SB 100, load serving entities were required to procure no less than 1.3 gigawatts (GW) of energy storage capacity by 2020, and 3 GW by 2030. As of October 2024, CAISO has a total energy storage capacity of 13,391 MW (CEC, 2025a).

The Integrated Resource Plan. CAISO develops a coordinated grid management plan to integrate the generation and storage capacities of load serving entities, called the Integrated Resource Plan (IRP). The IRP is a comprehensive planning document that outlines CAISO's forecasts for electricity demand, supply, and transmission needs over a 20-year planning horizon, as well as its strategies for integrating renewable energy resources and other grid services to meet those needs. The plan is developed in collaboration with load serving entities, regulators, and other stakeholders and is updated periodically to reflect changes in the energy landscape and evolving policy goals. Overall, the IRP plays a critical role in ensuring the reliability and resilience of California's electricity grid as the State continues to transition to a cleaner and more sustainable energy system.

When an individual Battery Energy Storage (BES) facility or generation infrastructure (i.e., solar panels) comes online in California, it is typically included in the IRP through a process known as the Interconnection Queue. The Interconnection Queue is managed by CAISO, which oversees the operation of the State's electricity grid.

The Interconnection Queue. The Interconnection Queue is an application process that functions as a waiting list of proposed electricity generation and storage projects that are seeking to connect to the grid. When a new BES facility or generation infrastructure is proposed, the developer submits an application to CAISO to request an interconnection to the grid. CAISO evaluates the application to ensure that the facility meets technical and operational requirements, such as voltage regulation and frequency response, and that it can be integrated effectively into the grid.

Once the BES facility or generation infrastructure is approved by CAISO, it is assigned a point of interconnection on the grid, and its output is added to the IRP as a resource that can provide electricity and other grid services, such as frequency regulation or ramping support. The facility is then dispatched by CAISO based on its bids into the day-ahead and real-time electricity markets, and its output is used to help balance supply and demand on the grid in real-time.

Overall, the Interconnection Queue is an important mechanism for integrating new BES facilities and other electricity resources into the California grid, and for ensuring that the grid remains reliable and resilient as the State continues to transition to a cleaner and more sustainable energy system.

California Air Resources Board Advanced Clean Truck Regulation

CARB adopted the Advanced Clean Truck (ACT) Regulation in June 2020 requiring heavy-duty truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, every new truck sold in California is required to be zero-emission. This rule puts California on the path for an all zero-emission cross-dock intermodal drayage fleet in ports and rail yards by 2035, and zero-emission "last-mile" delivery trucks and vans by 2040. The ACT Regulation accelerates the transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8. The regulation has two components including a manufacturer sales requirement, and a reporting requirement:

- **Zero-emission Truck Sales:** Manufacturers who certify Class 2b through 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 need 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.
- **Company and Fleet Reporting:** Large employers including retailers, manufacturers, brokers and others would be required to report information about shipments and shuttle services. Fleet owners, with 50 or more heavy-duty trucks, would be required to report about their existing fleet operations. This information would help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

The ACT Regulation was granted a separate waiver in 2023 by the Biden administration. On May 22, 2025, the U.S. Senate passed a Congressional Review Act measure to revoke the waiver granted by the U.S. EPA in 2023 and block California from implementing the ACT Regulation. On June 12, 2025, President Trump formally nullified California's ACT rule (Congressional Resolution H.J. Res 87).

California Air Resources Board Statewide Truck and Bus Regulation

In December 2008, CARB adopted the Statewide Truck and Bus Regulation that requires installation of particulate matter retrofits on all on-road heavy-duty trucks and buses beginning January 1, 2012, and replacement of older trucks starting January 1, 2015 (13 CCR § 2025). As of January 1, 2023, all vehicles need to have 2010 model year engines or equivalent.

Pavley Rule (Assembly Bill 1493)

In California, the Pavley statutes for automobile efficiency (AB 1493), with the granting of the federal waiver on June 30, 2009, are expected to reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016, all while improving fuel efficiency and reducing motorists' costs.

Local

San Bernardino County Regional Greenhouse Gas Reduction Plan

In 2021, San Bernardino Council of Governments released the *San Bernardino County Regional Gas Reduction Plan* (Regional Greenhouse Gas Reduction Plan). This plan summarizes the actions that 23 jurisdictions within the County of San Bernardino (County) (including the City of Barstow [City]) selected to reduce jurisdictional GHG emissions, as well as state-mandated actions. The GHG reduction measures selected by jurisdictions for this report are non-binding unless the decision-making body of a jurisdiction decides to formally adopt them. The GHG reduction measures include energy-focused measures for the City, such as promoting building energy efficiency, solar installation, urban tree planting, alternative fueled transit fleets, community fleet electrification, and electric-powered construction equipment. At the time of writing, the City has not adopted these measures, and therefore are non-binding within City boundaries.

County of San Bernardino Countywide Plan

The County adopted the Countywide Plan (CWP) in October 2020. The CWP Policy Plan addresses the physical, social, and economic issues facing the County's unincorporated portions. **Table 5.6-1: Countywide Plan Policy Plan – Relevant Energy Goals and Policies** includes the energy-related goals and policies relevant to the Project.

Table 5.6-1: Countywide Plan Policy Plan – Relevant Energy Goals and Policies	
Goal or Policy	
INFRASTRUCTURE & UTILITIES ELEMENT	
Policy IU-1.9	**Water conservation.** We encourage water conserving site design and the use of water conserving fixtures, and advocate for the adoption and implementation of water conservation strategies by water service agencies. For existing County-owned facilities, we incorporate design elements, building materials, fixtures, and landscaping that reduce water consumption, as funding is available.
NATURAL RESOURCES ELEMENT	
Policy NR-1.1	**Land use**. We promote compact and transit-oriented development countywide and regulate the types and locations of development in unincorporated areas to minimize vehicles miles traveled and greenhouse gas emissions.
Policy NR-1.9	**Building design and upgrades.** We use CALGreen Code to meet energy efficiency standards for new buildings and encourage the upgrading of existing buildings to incorporate design elements, building materials, and fixture that improve environmental sustainability and reduce emissions
RENEWABLE ENERGY & CONSERVATION ELEMENT	
Goal RE-1	**Energy Conservation and Efficiency.** The County will pursue energy efficiency tools and conservation practices that optimize the benefits of renewable energy.
Policy RE-1.1	Continue implementing the energy conservation and efficiency measures identified in the County of San Bernardino Greenhouse Gas Emissions Reduction Plan.
Policy RE- 1.2	Optimize energy efficiency in the built environment. ▪ RE 1.2.1: Support low- to no-cost retrofits to improve energy efficiency of existing homes through grant and loan programs. ▪ RE 1.1.2: Encourage property owners to participate in a PACE program for access to energy efficiency retrofit financing. ▪ RE 1.2.3: Encourage utilities to expand free to low-cost audit and retrofit programs in the built environments. ▪ RE 1.2.4: Work with utilities (Southern California Edison (SCE), Southern California Gas Company (SCG), etc.) to identify retrofit opportunities with short payback periods, such as variable-speed pool pumps, building air sealing, and attic insulation, for County use in conducting focused energy efficiency outreach. ▪ RE 1.2.5: Collaborate with community partners to promote the benefits of energy efficiency to County residents, businesses, and industries. ▪ RE 1.2.6: Encourage new development to comply with the optional energy efficiency measures of the CALGreen Code. ▪ RE 1.2.6: Encourage new development to comply with the optional energy efficiency measures of the CALGreen Code.
Policy RE-1.4	Promote the local economic benefits of energy efficiency retrofits. ▪ RE 1.3.1: Support workforce development and certification for green trades. ▪ RE 1.3.2: Provide networking opportunities to connect local contractors with energy efficiency retrofit programs such as the PACE program and Energy Upgrade California. ▪ RE 1.3.3: Encourage energy efficiency retrofit projects as components of adaptive re-use of historic structures.
Goal RE-2	**Renewable Energy Systems.** The County will be home to diverse and innovative renewable energy systems that provide reliable and affordable energy to our unique Valley, Mountain, and Desert regions.

Table 5.6-1: Countywide Plan Policy Plan – Relevant Energy Goals and Policies	
Goal or Policy	
Policy RE-2.1	Support solar energy generation, solar water heating, wind energy and bioenergy systems that are consistent with the orientation, siting and environmental compatibility policies of the General Plan. ▪ RE 2.1.1: Utilize renewable energy development standards in the Development Code to minimize impacts on surrounding properties.
Policy RE-2.2	Promote use of energy storage technologies that are appropriate for the character of the proposed location. ▪ RE 2.2.1: Encourage on-site energy storage with RE generation facilities, consistent with County Development Code requirements. ▪ RE 2.2.2: Encourage and allow energy storage facilities as an accessory component of RE generation facilities. ▪ RE 2.2.3: Establish thresholds for conditions under which energy storage facilities are a primary use and subject to separate permit processes. ▪ RE 2.2.4: Periodically review and encourage appropriate technology types for energy storage facilities. ▪ RE 2.2.5: Support state policies and efforts by utility companies to plan for and develop energy storage technologies through legislative advocacy and coordination with utility companies.
Policy RE-2.3	Encourage the use of feasible emerging and experimental renewable energy technologies that are compatible with County regulatory standards. ▪ RE 2.3.1: Monitor emerging renewable energy technologies and amend County development standards as needed to accommodate suitable new technology types. ▪ RE 2.3.2: Monitor improvements in existing renewable energy technologies, and consider allowing additional types of renewable energy facilities as they become compatible with County regulatory standards.
Policy RE-2.4	Identify and prioritize programs that support cost-effective and universal access to renewable energy. ▪ RE 2.4.1: Expand outreach and education efforts through the County's online Community Development Toolkit on programs such as the availability of federal and state tax credits, ▪ participation in the PACE program, and other mechanisms to reduce the cost of renewable energy facilities for onsite use on new and existing buildings. ▪ RE 2.4.2: Educate developers about the County's RE goals and policies, and encourage the inclusion of renewable energy facilities for onsite use in new developments. ▪ RE 2.4.3: Engage with residential developers to discuss and identify opportunities and incentives to expand on-site renewable energy facilities consistent with the goals and policies of this Element. ▪ RE 2.4.4: Encourage installation of renewable energy systems on rental properties, multi-family buildings, and buildings with multiple commercial tenants by working with property developers and owners, using tools such as green leases, split incentive programs, and the California Solar Initiative's MASH program. ▪ RE 2.4.5: Encourage the pursuit of community choice aggregation programs in collaboration with other interested jurisdictions in the region. ▪ RE 2.4.6: Proactively coordinate RE programs with other jurisdictions in the County to promote countywide collaboration and consistency.
Policy RE-2.5	Support renewable energy systems that accelerate zero net energy (ZNE) through innovative design, construction, and operations of residences, businesses, and institutions that are grid-neutral and independent of centralized energy infrastructure.

Table 5.6-1: Countywide Plan Policy Plan – Relevant Energy Goals and Policies	
Goal or Policy	
	▪ RE 2.5.1: Allow and encourage construction of new buildings designed to ZNE standards consistent with state programs. ▪ RE 2.5.2: Incorporate ZNE into outreach and educational strategies about renewable energy and energy efficiency. ▪ RE 2.5.3: Allow and encourage construction of new buildings or developments in remote locations with stand-alone energy systems not connected to the grid. ▪ RE 2.5.4: Encourage energy independence and resiliency, including zero net energy and stand-alone systems not connected to the grid, in County economic development presentations and outreach efforts. ▪ RE 2.5.5: Collaborate with incorporated cities and other jurisdictions to create region-specific ZNE programs and Community Development toolkit tools tailored to the climates and characteristics of each region to provide consistency and leverage resources.
Policy RE-2.6	Encourage energy efficiency through appropriate renewable energy systems. ▪ RE 2.6.1: Pursue and consider development incentives such as density bonuses and streamlined permitting for projects that install accessory renewable energy facilities. ▪ RE 2.6.2: Allow developers of nonresidential properties to reduce required on-site parking spaces below minimum standards when space equivalent to the parking space reduction is devoted to renewable energy generation and storage facilities designed to serve on-site energy needs. ▪ RE 2.6.3: Encourage solar energy generation on rooftops and on covered parking as the first priority for on-site energy generation.
Goal RE-3.1	**Community-Oriented Renewable Energy.** Community-oriented renewable energy facilities will be prioritized to complement local values and support a high quality of life in unincorporated communities.
Policy RE-3.1	Prioritize, facilitate, and encourage on-site accessory RE generation to serve the unincorporated county, with a primary focus on rooftop and parking lot solar energy generation. ▪ RE 3.1.1: Permit rooftop, parking lot, and similar accessory RE generation facilities that primarily serve on-site energy needs in all zoning districts, including micro-grid systems, with minimal regulation and permitting requirements.
Policy RE-3.2	Encourage community-oriented renewable energy (CORE) generation that primarily serves local uses in the county. ▪ RE 3.2.1: Specific standards shall be established and maintained for community-oriented RE generation facilities appropriate to the Valley, Desert, and Mountain regions. ▪ RE 3.2.2: Encourage through the regulatory system the establishment of local and regional organizations to pursue community-oriented RE production and storage. ▪ RE 3.2.3: CORE facilities shall be designed primarily to meet the needs of the local users, with an adequate overage margin to meet peak demands and defray the cost of the systems. ▪ RE 3.2.3: Encourage utilities and developers to establish community-shared solar programs that allow residents and businesses to purchase shares of the output of RE generation facilities to offset their electricity bills. ▪ RE 3.2.4: Provide information and educational opportunities in the Countywide Plan Community Development Tool Kit for local organizations pursuing the acquisition of Community-Oriented Renewable Energy (CORE). ▪ RE 3.2.5: Encourage utilization of micro-grid technologies to support the principle of “local production primarily for local consumption,” to enhance local energy security and to improve local costs of living and commerce.

Table 5.6-1: Countywide Plan Policy Plan – Relevant Energy Goals and Policies	
Goal or Policy	
	▪ RE 3.2.6: Apply minimal discretion in the permit approval process for CORE facilities. ▪ RE 3.2.7: Encourage infrastructure, net metering and regulatory systems that support CORE facilities.
Policy RE-3.3	Promote an adaptive distributed energy infrastructure that sustains local communities and improves resiliency to grid failures and increasing energy prices. ▪ RE 3.3.1: Support research, planning and investment in accessory and community-oriented energy generation, distribution, and storage infrastructure by adapting regulatory tools to respond to rapidly evolving RE technologies. ▪ RE 3.3.2: Encourage new institutional campuses and large residential/commercial developments to include micro-grids with on-site renewable energy generation and energy storage systems.
Policy RE-3.4	Require renewable energy facilities developed in spheres of influence of incorporated cities to be compatible and consistent with standards of the sphere cities.
Policy RE-3.5	Incorporate resident, business owner, and stakeholder input into the development and implementation of County policies for renewable energy.
Policy RE-3.6	Encourage renewable energy facilities to meet community goals, including supporting community health, wellness, and recreational needs. ▪ RE 3.6.1: Include opportunities to incorporate public art and encourage design features that provide screening in renewable energy facilities on public spaces, nonresidential facilities, and multi-family buildings. ▪ RE 3.6.2: Encourage the use of renewable energy facilities as shade structures in parks and community centers, and over parking lots and parking structures.
Policy RE-3.7	Continue to foster local economic benefits of renewable energy facilities through community involvement. ▪ RE 3.7.1: Require CORE project development applications to be sponsored or co-sponsored by local users who will be the primary consumers of the energy generated by the projects. ▪ RE 3.7.2: Encourage RE generation facility developers to give preference to San Bernardino County residents in hiring for construction, operation, and decommissioning of the facility. ▪ RE 3.7.3: Encourage local community colleges, vocational schools, and workforce training centers to offer programs on renewable energy installation and maintenance. ▪ RE 3.7.4: Encourage innovation zones for manufacturers to locate and operate in the unincorporated county to research, construct, test, and distribute renewable energy technologies
Source: County of San Bernardino. 2020. *Countywide Policy Plan*. https://countywideplan.sbcounty.gov/policy-plan/	

The CWP Policy Plan includes the following Policy Map that addresses energy:

- Policy Map IU-7 Electricity Utility Service: This map depicts the County's electricity utility provider service areas.

For applicability of the CWP goals and policies to the Project, see **Section 5.0: Environmental Analysis**.

Codified Ordinances of the County of San Bernardino

The Codified Ordinances of the County of San Bernardino (County Code) regulations addressing energy are provided below (San Bernardino, 2022).

County Code Chapter 63.0501: Adoption of California Energy Code. Under this section, the 2019 California Energy Code contained in Part 6 of Title 24 of the CCRs, is designated and adopted by reference as the Energy Code for the design and installation of energy systems for the unincorporated area of the County.

County Code Chapter 63.1501: Adoption of California Green Building Standards Code. Under this section, the 2019 CALGreen, contained in Chapters 1-8 of Part 11 of Title 24 of the CCRs, is designated and adopted by reference as the CALGreen for the unincorporated areas of the County.

City of Barstow 2015-2020 General Plan

The City adopted the City of Barstow 2015-2020 General Plan (2015 General Plan) in February 2015. The 2015 General Plan is the overarching guide for implementation of the Development Code, which defines development regulations and establishes zoning districts throughout the City. **Table 5.6-2: 2015 General Plan Relevant Goals and Policies – Energy** includes the energy-related goals and policies relevant to the Project. For applicability of the 2015 General Plan goals and policies to the Project, see **Section 5.0**.

Table 5.6-2: 2015 General Plan Relevant Goals and Policies – Energy

Goal or Policy	
RESOURCE CONSERVATION AND OPEN SPACE ELEMENT	
Goal 6	Provide programs and incentives to encourage residents, businesses and developers to reduce consumption and efficiently use energy resources.
Policy 6.A	Educate the development community with regard to green building principles and other strategies for conserving natural resources.
Source: City of Barstow. 2015. *City of Barstow 2015-2020 General Plan.* https://www.barstowca.org/home/showpublisheddocument/5359/636607004808630000.	

Code of the City of Barstow

The Code of the City of Barstow (Barstow Code) regulations addressing energy are provided below (Barstow, 2025). For applicability of the Barstow Code standards to the Project, see **Section 5.0**.

Barstow Code § 15.08.010: Building Codes. This section notes that the City has adopted State codes, including among others the 2019 California Energy Code (Part 6, Title 24, CCRs) and the 2019 CALGreen Code (Part 11, Title 24, CCRs).

Barstow Code § 19.06.010: Outdoor Lighting. This section regulates outdoor lighting and provides clear guidelines for its installation to help reduce the energy and financial costs of outdoor lighting. This section also provides energy-efficient lighting that will allow for safe maneuvering of vehicles and pedestrians within parking areas and walkways for multi-family residential, office, commercial, and industrial developments without adversely impacting adjacent properties.

Barstow Code § 19.06.090: Alternative Energy. This section establishes standards for the permitting, design, and installation of alternative energy systems such as solar.

5.6.3 METHODOLOGY FOR EVALUATING IMPACTS

This section defines the study area (i.e., affected environment) and summarizes the methodology used to analyze the Project's potential impacts on energy.

Definition of Study Area

The study area is the geographic boundary in which the environmental investigations were conducted specific to each resource topic.

Proposed General Plan

The study area for the proposed General Plan is the City of Barstow and its Sphere of Influence (SOI); see **Figure 3-1: Regional Vicinity Map** and **Figure 3-2: Local Vicinity Map – BIG** in **Section 3:0: Project Description**.

Barstow International Gateway

The study area for impacts concerning energy resources encompass the infrastructure and service areas of energy sources, respectively, that BIG construction and operations could directly and indirectly affect. The study area for direct impacts concerning energy resources includes the energy infrastructure on/across BIG footprint, including surface, subsurface, and overhead facilities. The study area for indirect impacts concerning energy resources includes the area beyond BIG footprint, where use of energy resources and facilities necessary for BIG construction and operations, and construction of electrical interconnections with local utilities would occur, including the Southern California Edison (SCE) planning area.

Methodology

Proposed General Plan

The following is a summary of the assumptions used for the energy analysis:

- **On-Road Fuel Use.** Transportation fuel (e.g., gasoline, diesel) use was based on calendar year 2023 and 2048 fuel usage rates for San Bernardino County from CARB's Emission FACtor (EMFAC) 2021 v.1.0.2 web database and total passenger car vehicle miles traveled (VMT) and truck miles traveled (TMT) data provided by Fehr & Peers using the San Bernardino Transportation Analysis Model (SBTAM+) and origin-destination (O-D) approach. For the General Plan analysis, TMT represents the miles traveled for light-heavy duty trucks (LHDT), medium-heavy duty trucks (MHDT), and heavy-heavy duty trucks (HHDT) while VMT represents miles traveled for all other types of vehicles such as light duty automobiles (LDA). The VMT provided by Fehr & Peers for the General Plan includes passenger VMT and TMT for all land uses in the City at buildout, including BIG. To provide a conservative emissions analysis for the proposed Project, the total VMT and TMT provided by Fehr & Peers includes the full trip length and does not apply the recommendations of CARB's Regional Targets Advisory Committee (CARB, 2008). Daily VMT from the San Bernardino Transportation Analysis Model is converted to annual VMT by multiplying the daily VMT by 347 days per year, which is consistent with CARB assumptions to account for less travel on weekend (CARB, 2008).

- **Energy (Natural Gas and Electricity).** Natural gas and electricity use for residential and nonresidential land uses in the proposed General Plan area are the averages based on the five-year (2019 to 2023) data provided by Southwest Gas and SCE, respectively. The five-year averages are used to account for fluctuations in energy use. Year 2048 electricity and natural gas demand forecasts are adjusted for increases in population for residential uses and non-residential square footage for non-residential uses in the study area. Electricity and natural gas demand for the Sphere of Influence based on the residential and nonresidential electricity and natural gas rates derived from total annual residential electricity and natural gas demand and households and total annual nonresidential electricity and natural gas demand and nonresidential square footage for the City. For purposes of this analysis, the natural gas demand associated with the "Transportation," "CNG (Compressed Natural Gas)," and "Other" users as identified in the data provided by Southwest Gas are assumed to remain unchanged under year 2048 conditions.[3] These user groups combined account for less than one percent of all customers in the City. In addition, these user groups showed high variability in consumption rates year over year. For these reasons, these user groups were assumed to remain constant under future conditions.

Barstow International Gateway

This section analyzes BIG's construction and operations consumption of three energy sources:

- Electricity consumption during construction is associated with eight private on-site groundwater wells (to provide non-potable water use), equipment and tools, and other necessary facilities (e.g., temporary offices). It is noted that construction lighting would be provided by diesel powered portable light carts to provide lighting during nighttime construction activities. Remaining electrical use during construction (construction trailers, power tool charging, etc.) would be supplied by a temporary power pole connection from SCE. Electricity consumption during operations analyze energy usage (annual) and demand (peak) for the rail yard (i.e., lighting, buildings, widespan rail gantry cranes, and electric hostlers) and the transload warehouse center (i.e., lighting, heating, ventilation and air conditioning, electric vehicle charging for material handling, and forklifts);
- Electricity generation is calculated for the on-site solar farm, as well as solar panels required for Title 24 (CALGreen Code) compliance.
- Diesel fuel consumption during construction for off-road construction diesel equipment and mobile diesel generators and diesel fuel consumption during operations for rubber-tired gantry cranes, backup generator testing, heavy-duty truck hauling trips and vendor trips; and
- Gasoline fuel consumption during construction and operations for on-road worker commute and vendor vehicle trips.

[3] "Transportation" users are customers that procure their own gas, and it is delivered to the customer on Southwest Gas' system; "CNG" users are defined as 'Natural Gas for Motor Vehicles'; "Other" users are Defined as 'SML Electric Power Generation Gas Srvc * Electric Generation' & 'Military'.

The analysis in this section utilizes the construction equipment list and operational characteristics discussed in **Section 5.8: Greenhouse Gas Emissions (Table 5.8-5** and **Table 5.8-6**), and the construction and operational characteristics concerning BIG's electric and water demands detailed in **Section 5.17: Utilities and Service Systems**. Because BIG construction and operations would not consume natural gas, it is not included in the analysis of BIG in this section.

For analysis purposes, BIG construction is assumed to occur over approximately 34 months beginning in the third quarter of 2025 and ending in the third quarter of 2028. BIG operations are assumed to begin after BIG construction is completed in 2028. Further, while transload warehouse center buildings would be constructed and operated by third parties, this analysis includes the buildings' energy consumption impacts during construction and three operational years: Opening Year (2028), Interim Year (2033), and Horizon Year (2048). Typically, intermodal transport grows by approximately two percent per year. BIG would introduce a unique cross-dock intermodal operation which would present competitive benefits to suppliers compared to long-distance transport via heavy-duty truck. As such, BNSF anticipates that during this "initial transition period" after opening year and while suppliers transition supply chains to use BIG, a higher growth percentage than typical would occur. Following this initial transition period and through horizon year, BIG's growth would continue at the normal approximately 2 percent per year.

Electricity

Electricity Consumption During Construction. BIG's construction electrical usage from stationary equipment (i.e., temporary construction wells, concrete batch plants, and mobile offices) would be supplied through connections to existing SCE facilities and sourced from the Tortilla Substation. However, most construction activities (hand-held power tools and mobile equipment) would utilize mobile diesel generators. Therefore, BIG's construction electricity usage only accounts for construction activities requiring connections to SCE. This construction energy consumption was calculated based on published electricity consumption rates for concrete and asphalt batch plants and temporary offices (Jianxin Machinery, ND and Parker Plant India Pvt. Limited, ND). The electricity consumption for the on-site wells needed to meet BIG's non-potable water usage, which would be supplied by temporary SCE power connections, was calculated using energy intensity per acre-feet of water extracted for the South Lahontan Region from The Pacific Institute's *The Future of California's Water Energy-Climate Nexus* (2021), Table 4. The same methodology was applied to potable water, which would be supplied by temporary above-ground pipeline connections to Golden State Water Company Barstow's existing mains.

Electricity Consumption During Operations. BIG's operational building electricity consumption was calculated using existing BNSF data for electric equipment and the Quick Energy Simulation Tool (E-QUEST); see **Appendix 5.6 BIG-1**. Since all transload warehouse center end-users are unknown, electricity consumption was modeled by proportional scaling estimated usage from a one million-square-foot transload warehouse center. Potable and non-potable water demand were calculated using energy intensity per acre-feet of water extracted, conveyed, and treated from the Pacific Institute's *The Future of California's Water Energy Climate Nexus* (2021), Table 4.

Diesel Fuel

CARB's EMFAC2021 emissions modeling software contains current and future annual diesel fuel consumption estimates within the State to the county level. Therefore, 2028, 2033, and 2048 quantities for San Bernardino County (County) were utilized for construction, opening, interim, and horizon years, respectively. For consistency, BIG's anticipated diesel fuel demands (as detailed below in **Section 5.6.6: Project Impacts and Mitigation Measures**) utilized EMFAC2021 projected diesel fuel demand existing demand estimates.

Diesel Fuel Consumption During Construction. BIG's construction diesel fuel consumption was calculated based on BIG's EMFAC2021 construction outputs and conversion ratios from the 2019 Climate Registry *General Reporting Protocol Version 3.0*.

Diesel Fuel Consumption During Operations. BIG's operational diesel fuel consumption was calculated based on BIG's EMFAC2021 operational outputs and conversion ratios from the 2019 Climate Registry *General Reporting Protocol Version 3.0*.

Gasoline Fuel

Like diesel fuel existing conditions, EMFAC2021 also contains the County's projected gasoline fuel demand for future years. Therefore, this analysis utilizes projected gasoline consumption for 2028, 2033, and 2048 as respective existing settings for BIG construction and operational gasoline fuel consumption.

Gasoline Fuel Consumption During Construction. BIG's construction gasoline fuel consumption was calculated based on BIG's EMFAC2021 construction outputs and conversion ratios from the 2019 Climate Registry *General Reporting Protocol Version 3.0*.

Gasoline Fuel Consumption During Operations. BIG's operational gasoline fuel consumption was calculated based on BIG's EMFAC2021 operational outputs and conversion ratios from the 2019 Climate Registry *General Reporting Protocol Version 3.0.*

5.6.4 ENVIRONMENTAL SETTING

Proposed General Plan

Existing Conditions

Electricity

The proposed General Plan area is in SCE's service area, which spans much of southern California from Orange and Riverside counties on the south to Santa Barbara County on the west to Mono County on the north (SCE, 2025). Sources of electricity sold by SCE in 2023, the latest year for which data are available, were:

- 37.6 percent renewable, consisting mostly of solar and wind
- 4.5 percent large hydroelectric
- 20.0 percent natural gas

- 9.1 percent nuclear
- 0.1 percent other
- 28.8 percent unspecified sources—that is, not traceable to specific sources (CEC, ND)[4]

Total estimated existing electricity demand in the proposed General Plan area, based on data provided by SCE, are identified in **Table 5.6-3: Existing Electricity Usage**.

Table 5.6-3: Existing Electricity Usage

Use	Electricity Usage (kWh per year)
CITY	
Residential[1]	58,919,082
Nonresidential	74,133,529
SOI	
Residential[1]	20,889,432
Nonresidential	6,670,673
Total	**160,612,715**

Notes: kWh = kilowatt hour
[1] The BIG property is contained partially within the City boundaries and partially in the City's SOI. Therefore, the existing BIG consumption data for residential is assumed in the existing total residential estimates for the City and SOI and is not treated as additive consumption.

Source: **Appendix5.6 GP-1: Energy Modeling**.

Natural Gas

Southwest Gas provides natural gas service in the City. In addition to portions of central and southern Arizona as well as northern and southern Nevada, the service area of Southwest Gas includes Barstow, Victorville, and Big Bear City in southern California and Lake Tahoe in northern California (California State Geoportal, 2021).

Estimated existing natural gas demands in the proposed General Plan area, based on data provided Southwest Gas are shown in **Table 5.6-4: Existing Natural Gas Demand**.

[4] The electricity sources listed reflect changes after the 2013 closure of the San Onofre Nuclear Generating Station, which is owned by SCE. Numbers are rounded up and may cause the total to not add up to exactly 100 percent.

Table 5.6-4: Existing Natural Gas Demand	
Use	**Natural Gas Usage (therms per year)**
CITY	
Residential	2,861,769
Nonresidential	1,927,933
Transportation[2]	275,650
CNG[3]	193,628
Other[4]	214,886
SOI	
Residential	1,014,624
Nonresidential	173,479
Total	**6,661,970**

Notes:
[1] The BIG property is contained partially within the City boundaries and partially in the City's SOI. Therefore, the existing BIG consumption data for residential is assumed in the existing total residential estimates for the City and SOI and is not treated as additive consumption.
[2] Customers that procure their own gas, and it is delivered to the customer on Southwest Gas' system
[3] CNG = Compressed Natural Gas. Defined as 'Natural Gas for Motor Vehicles'.
[4] Defined as 'SML Electric Power Generation Gas Srvc * Electric Generation' & 'Military'.

Source: **Appendix 5.6.1 GP-1: Energy Modeling.**

Transportation Fuel Consumption

California is among the top producers of petroleum in the country, with crude oil pipelines throughout the State connecting to oil refineries in the Los Angeles, the San Francisco Bay, and the Central Valley regions. In addition to producing petroleum, California is also one of the top consumers of fuel for transportation. With this sector accounting for approximately 42 percent of California's total energy usage in 2022, amounting to approximately 2915.8 trillion British Thermal Units (BTU) (.S. Energy Information Administration [U.S. EIA], 2025b). In addition, in 2023, California's transportation sector consumed approximately 555 million barrels of petroleum fuels (U.S. EIA, 2024). Further, according to the CEC, California's 2023 fuel sales were approximately 13,576 million gallons of gasoline and 2,982 million gallons of diesel (CEC, 2025b). In San Bernardino County, approximately 897 million gallons of gasoline and 267 million gallons of diesel fuel were sold in 2023 (CEC, 2024a).

Table 5.6-5: Existing Operation-Related Annual Fuel Usage identifies the fuel usage associated with VMT currently generated under existing baseline conditions based on fuel usage data obtained from EMFAC2021 and VMT data provided by Fehr & Peers.

Table 5.6-5: Existing Operation-Related Annual Fuel Usage				
	Gasoline	**Diesel**	**Compressed Natural Gas**	**Electricity**
Vehicle Miles Traveled	386,159,753	63,480,237	2,765,769	12,422,540
Fuel Amount	15,646,576 gal	9,709,560 gal	500,384 gal	4,528,277 kWh
Fuel Efficiency	24,68 MPG	6.54 MPG	5.53 MPG	2.74 mi/kWh

Notes: gal = gallon; kWh = kilowatt hour; MPG = mile per gallon; mi/kWh = mile per kilowatt hour
[1] Includes both VMT and TMT.

Source: **Appendix 5.6-1: Energy Modeling**.

Barstow International Gateway

The approximately 5,000-acre BIG footprint is in the western part of the City and southwestern part of the County; see **Figure 3-1: Regional Vicinity Map**. BIG is within the Lenwood Census Designated Area (Lenwood), the City, and an unincorporated portion of the County, in the Mojave Desert's rural southwestern portion; see **Figure 3-2: Local Vicinity Map - BIG.**

Existing Electricity and Natural Gas Supplies

Electricity

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

Energy capacity, or electrical power, is generally measured in watts (W) while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100 W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy use is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours. Californians used 91,912 GWh of electricity in 2024, of which the County used approximately 16,206 GWh (CEC, 2024b).

SCE provides electrical service to the area. SCE provides electricity to approximately 15 million people, 180 incorporated cities, 15 counties, 5,000 large businesses, and 280,000 small businesses throughout its 50,000-square-mile service area (SCE, 2025). SCE produces and purchases their energy from a mix of conventional and renewable generating sources. **Table 5.6-6: Energy Resources Used to Generate Electricity for SCE (2023)** shows the SCE electric power mix in 2022 compared to the statewide 2022 power mix.

The following existing facilities distribute electricity throughout BIG footprint:

- Seven existing substations within the Barstow and Lenwood areas, including the Tortilla Substation, which is located approximately 0.4 mile south of the Veterans Parkway and Diamond Avenue intersection;
- Several distribution power lines paralleling Main Street; and
- A transmission line that crosses the Burlington Northern Santa Fe main lines east of Highway 58.

For more information about existing energy facilities, see **Section 5.17: Utilities and Service Systems**.

Table 5.6-6: Energy Resources Used to Generate Electricity for SCE (2023)[1]		
Energy Resources	**2022 SCE Power Mix**	**2022 CA Power Mix**
Biomass and Biowaste	0.1%	2.1%
Geothermal	5.2%	4.8%
Eligible Hydroelectric	0.7%	1.8%
Solar	19.8%	17.0%
Wind	11.7%	11.2%
Eligible Renewable:	37.6%:	36.9%:
Coal	0.0%	1.8%
Large Hydroelectric	4.5%	11.7%
Natural Gas	20.0%	36.6%
Nuclear	9.1%	9.3%
Other	0.1%	0.1%
Unspecified Sources of Power[2]	28.8%	3.7%
Total	100%	100%

Notes:
[1]Latest year of available data at the time of analysis
[2]Electricity from transactions that are not traceable to specific generation sources.

Sources CEC. ND. *2023 Power Content Label, Southern California Edison Company.* https://www.energy.ca.gov/zh-TW/filebrowser/download/7362

Natural Gas

The Southwest Gas Corporation (SWGas), the service provider for BIG footprint, services approximately 2.2 million customers across Arizona, Nevada, and California, with approximately 207,000 customers in California (SWGas, 2024). SWGas owns and operates approximately 1,500 miles of transmission pipelines and 55,000 miles of service lines. According to the CEC, the total natural gas demand in the SWGas service area was 64 million Therms in 2024 (CEC, 2024c).

Petroleum Fuel

Transportation fuels (gasoline and diesel) are produced from crude oil, which can be domestic or imported from various regions around the world. Based on current proven reserves, current crude oil production would be sufficient to meet demand until 2050 (U.S. EIA, 2025a). In 2023, taxable gasoline sales (including aviation gasoline) in California accounted for 13,564,578,025 gallons of gasoline while taxable diesel fuel sales accounted for 2,981,634,650 gallons of diesel fuel (CDTFA, 2025).

Energy Use

Energy use is typically quantified using the British Thermal Unit (BTU). Total energy consumption in California was 6,851.9 trillion BTU in 2022 (the most recent year for which this specific data is available). Of California's total energy use, the breakdown by sector is approximately 43 percent transportation, 22 percent industrial, 17 percent commercial, and 18 percent residential. Electricity and natural gas in California are generally used by stationary sources such as residential and commercial uses, and industrial facilities, whereas petroleum use is generally accounted for by transportation-related energy use.

In 2022, electricity use within the County was approximately 16,630 GWh from residential and non-residential sectors (CEC, 2022a). **Table 5.6-7: Estimated Existing Electricity Consumption – BIG** summarizes electricity consumption associated with the existing land uses within BIG's footprint and indicates it totals approximately 2,587 MWh. However, electricity consumption associated with existing land uses is conservatively assumed to be zero in BIG's impact analysis; see **Section 5.6.6**.

Table 5.6-7: Estimated Existing Electricity Consumption – BIG

Description	Quantity	Consumption (kwh)	Consumption (MWh)
Residential[1]	108 DU	821,838	822

Notes:
[1] Based on Single Family Housing Land Use Subtype of CalEEMod
SF = Square Foot; DU = Dwelling Units

Source: California Air Pollution Control Officers Association. 2023. *California Emissions Estimator Model (CalEEMod).*

Table 5.6-8: Estimated Existing Natural Gas Consumption – BIG summarizes the natural gas demand associated with the existing land uses within BIG's footprint which totals approximately 6,483,002 kBTU. However, natural gas demand associated with existing land uses is conservatively assumed to be zero in BIG's impact analysis.

Table 5.6-8: Estimated Existing Natural Gas Consumption – BIG

Description	Quantity	Consumption (kBTU)[4]
Residential[1]	108 DU	3,379,289

Notes:
[1] Based on Single Family Housing Land Use Subtype of CalEEMod
[2] kBTU = thousand British Thermal Units

Source: California Air Pollution Control Officers Association. 2023. *California Emissions Estimator Model (CalEEMod).*

5.6.5 IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

State CEQA Guidelines **Appendix G: Environmental Checklist Form** includes questions concerning energy. The issues presented in the Environmental Checklist Form have been used to formulate thresholds of significance in this section. Accordingly, the Project would have a significant effect concerning energy if it would:

- **Impact 5.6-1:** Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- **Impact 5.6-2:** Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Impacts concerning State CEQA Guidelines Appendix F, Section C, are included in this analysis under **Impact 5.6-1**.

5.6.6 PROJECT IMPACTS AND MITIGATION MEASURES

Applicable Proposed General Plan Policies

Land Use Element

- **Policy LU-2.1 Balanced mix of land uses.** Plan for and maintain a balanced mix of high quality land uses to ensure a range of residential options, fiscal sustainability, and convenient access to shops, restaurants, services, and well-paid jobs.
- **Policy LU-3.2 Downtown design and land use.** Promote building and site designs that facilitate a walkable, experience-oriented atmosphere in the downtown. Encourage a mix of land uses that provide the opportunity to live, work, shop, and eat during the day and/or night.

Circulation Element

- **Policy CM-2.1 Pedestrian Network**. Establish and maintain pedestrian walkways that promote safe and convenient travel to transit stops and between residential and commercial areas, schools, parks, recreation facilities and other key destination points.
- **Policy CM-2.2 Bicycle Network**. Establish and maintain a citywide bicycle network that consists primarily of Class I multipurpose trails, Class II bike lanes, or Class IV separated bikeways. Class III bike routes are acceptable facilities in constrained circumstances to attain connectivity.
- **Policy CM-2.3 Electric bikes**. Support and encourage the use of electric bicycles to reduce resident and employee reliance on cars, resulting in greater mobility while lowering vehicle miles traveled and associated emissions.
- **Policy CM-2.4 Transit service**. Coordinate with Victor Valley Transit Authority (VVTA) to provide residents and workers with accessible and convenient service between residential neighborhoods, commercial centers, educational facilities, employment nodes, and medical facilities. Coordinate with VVTA to install, improve, and maintain safe, clean, comfortable, well-lit, and rider-friendly transit stops that are well marked and visible to motorists.
- **Policy CM-2.5 Downtown Barstow**. Enhance the public realm to create a pedestrian- and transit-friendly environment along and connecting to Main Street between Otis and 7th Avenues.
- **Policy CM-2.6 Design of new facilities**. Design new streets and streetscape improvements to accommodate vehicles, transit, bicycles, and pedestrians based on a combination of the land use and roadway context to promote safety and efficiency for all users.
- **Policy CM-2.7 Public space and networks**. Leverage public rights-of-way, easements, and other public spaces to maintain and expand bicycle and pedestrian networks.
- **Policy CM-2.9 Site design**. Require new development to incorporate amenities and pathways so that pedestrians and bicyclists can access the site and on-site businesses safely and conveniently from the public right-of-way and parking areas.
- **Policy CM-2.10 VMT reduction**. Promote new development and transportation demand management (TDM) strategies that will reduce household and employment vehicle miles traveled (VMT). Prioritize the implementation of TDM strategies over the expansion of roadway capacity.

Public Facilities and Services Element

- **Policy PFS-1.2 Recycled and reclaimed water.** Expand the City's recycled water capabilities and encourage the use of recycled water for landscaping, groundwater recharge, direct potable reuse, and other appropriate uses. Support the use of greywater systems for non-potable purposes.
- **Policy PFS-1.3 Water conservation.** Encourage water-conserving site design and the use of water-conserving fixtures, and advocate for the adoption and implementation of water conservation strategies by water service agencies.

Open Space Conservation Element

- **Policy OSC-1.5 Open space linkages.** Establish and maintain pedestrian and bicycle networks that link open space and recreation facilities.
- **Policy OSC-1.6 Heat abatement**. Design parks to include features such as shade structures and hydration stations to provide passive and active relief from extreme heat.
- **Policy OSC-3.3 Construction and operations.** Invest as resources are available in City facilities and fleet vehicles to improve energy efficiency and reduce emissions. Encourage City contractors and other builders and developers to use low-emission construction vehicles and equipment to improve air quality and reduce emissions.
- **Policy OSC-8.1 Energy conservation.** Pursue strategies that would conserve energy as the preferred mechanisms to reduce energy needs and to meet applicable energy-saving standards.
- **Policy OSC-8.2 Renewable sources**. Promote the use of renewable energy sources for the construction and operation of public and private sector development.
- **Policy OSC-8.4 Building design and upgrades**. Encourage new development and the upgrading of existing buildings to incorporate design elements, building materials, orientation, and fixtures that improve environmental sustainability and reduce emissions.

Safety Element

- **Policy S-2.8 Healthy, resilient, and efficient buildings**. Encourage and pursue funding for improvements to existing residential and nonresidential buildings consistent with the latest state building code requirements for indoor air quality; energy efficiency; energy storage; disaster and severe weather resilience; and solar power. As funding is obtained, prioritize improvements for buildings that are both within 500 feet of a freeway or railroad and intended for use by residents or employees for at least eight hours a day.
- **Policy S-2.9 Heat-reflecting surfaces**. Encourage the use of shade-producing trees and structures that reduce ambient air temperatures and heat radiance from buildings, parking lots, and other impermeable surfaces.

Impact 5.6-1	***Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?***

Proposed General Plan

Construction

Construction of individual development projects facilitated by the proposed General Plan would create temporary demands for electricity. Natural gas is not generally required to power construction equipment, and therefore is not assumed during construction phases. Electricity use would fluctuate according to the phase of construction. Additionally, it is assumed that most electric-powered construction equipment would be hand tools (e.g., power drills, table saws, compressors) and lighting, which would result in minimal electricity usage during construction activities.

Future individual development projects would also temporarily increase demands for energy associated with transportation. Transportation energy use depends on the type and number of trips, VMT, fuel efficiency of vehicles, and travel mode. Energy use during construction would come from the transport and use of construction equipment, delivery vehicles and haul trucks, and construction employee vehicles that would use diesel fuel or gasoline. The use of energy resources by these vehicles would fluctuate according to the phase of construction and would be temporary. It is assumed that most off-road construction equipment, such as those used during demolition and grading, would be gas or diesel powered. In addition, all operation of construction equipment would cease upon completion of project construction.

Construction contractors for future development facilitated by the proposed General Plan would minimize nonessential idling of construction equipment during construction in accordance with the CCR Title 13, Article 4.8, Chapter 9, § 2449. Contractors would also generally be subject to CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation that requires the use of at least 99 percent renewable diesel fuel for off-road equipment (e.g., construction equipment) greater than or equal to 25 horsepower, with some exceptions for specific equipment type and property ownership. Moreover, CARB's Statewide Truck and Bus Regulation would ensure that most heavy-duty trucks utilized during individual construction projects to have a 2010 model year and newer engine, which are substantially more fuel efficient than earlier model years, thereby reducing diesel fuel consumption for construction truck trips. Such required practices would limit wasteful and unnecessary energy consumption during the construction of individual development project facilitated by the proposed General Plan. Therefore, the construction of individual development projects facilitated by the proposed General Plan would not result in wasteful, inefficient, or unnecessary consumption of energy resources.

Operations

Operation of new development projects accommodated under the proposed General Plan would create additional demands for electricity and natural gas compared to existing conditions. Operational use of electricity and natural gas would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems, use of on-site equipment and appliances; and lighting.

It should be noted that BIG's energy consumption is accounted for in the consumption estimates for the proposed General Plan. BIG also includes increasing BNSF's renewable diesel composition within the Ports' existing fueling site from one percent to 10 percent, and would also use zero-emission (e.g., electric) RMGs, forklifts, loaders, hostlers, and other on-site cargo handling equipment.

Non-Transportation Energy

Electrical service to the proposed General Plan area would be provided by SCE through connections to existing off-site electrical lines and new on-site infrastructure. As identified in **Table 5.6-9: Year 2048 Forecast Electricity Consumption**, by horizon year 2048, electricity use in the General Plan area would increase by 172,661,731 kWh/year, or approximately 108 percent, from existing conditions.

Table 5.6-9: Year 2048 Forecast Electricity Consumption

Use	Electricity Usage (kWh per year)		
	Existing Baseline[1]	Year 2048 Forecast	Net Change
CITY			
Residential	58,919,082	100,687,448	41,768,366
Nonresidential	74,133,529	121,097,758	46,964,229
BIG Project			
Nonresidential	n/a	84,378,000	84,378,000
SOI			
Residential	20,889,432	21,124,597	235,166
Nonresidential	6,670,673	5,986,643	-684,029
Total	**160,612,715[1]**	**333,274,446**	**172,661,731**

Notes: kWh = kilowatt hour
[1] The BIG property is contained partially within the City boundaries and partially in the City's SOI. Therefore, the existing BIG consumption data for residential is included in the existing total residential estimates for the City and SOI and is not treated as additive consumption.

Source: **Appendix 5.6 GP-1: Energy Modeling** and **Appendix 5.6 BIG-1: Energy Assessment**.

As identified in **Table 5.6-10: Year 2048 Forecast Natural Gas Consumption**, existing natural gas use in the proposed General Plan area total 6,661,970 therms annually. By 2048, natural gas use in the proposed General Plan area would increase by 3,243,734 therms annually, or approximately 49 percent, from existing conditions.

Table 5.6-10: Year 2048 Forecast Natural Gas Consumption			
Use	Natural Gas Usage (therms per year)		
	Existing Baseline[1]	Year 2048 Forecast	Net Change
CITY[1]			
Residential	2,861,769	4,890,508	2,028,739
Nonresidential	1,927,933	3,149,295	1,221,362
Transportation[2]	275,650	275,650	0
CNG[3]	193,628	193,628	0
Other[4]	214,886	214,886	0
BIG Project			
Nonresidential	n/a	0	0
SOI			
Residential	1,014,624	1,026,047	11,422
Nonresidential	173,479	155,690	-17,789
Total	**6,661,970**	**9,905,704**	**-3,243,734**

Notes:
[1] The BIG property is contained partially within the City boundaries and partially in the City's SOI. Therefore, the existing BIG consumption data for residential is included in the existing total residential estimates for the City and SOI and is not treated as additive consumption.
[2] Customers that procure their own gas, and it is delivered to the customer on Southwest Gas' system.
[3] Defined as 'Natural Gas for Motor Vehicles'.
[4] Defined as 'SML Electric Power Generation Gas Srvc * Electric Generation' & 'Military'.

Source: **Appendix 5.6 BIG GP-1** and **Appendix 5.6 BIG-1**

While the total annual electricity and natural gas demands for the proposed General Plan area would increase compared to existing conditions, future developments accommodated under the proposed General Plan would be required to comply with the current and future updates to the CBEES and CALGreen Code. Compliance with these two standards would contribute to reducing the energy demands (see **Table 5.6-9: Year 2048 Forecast Electricity** Consumption and **Table 5.6-10: Year 2048 Forecast Natural Gas Consumption** either through increased energy efficiency compared to existing buildings and/or use of renewable energy. For example, the current 2022 CBEES include electric ready require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. Additionally, the 2022 CBEES also include prescriptive photovoltaic (PV) system standards for both residential and nonresidential land uses in addition to battery storage standards for nonresidential uses and multi-family residential uses of four stories or more. On-site PV systems would provide renewable electricity and also contribute to offsetting any additional electricity usage and demand that may result from fuel switching from natural gas appliances and systems to electric alternatives. Compliance with the prescriptive standards would result in the installation of on-site PV systems and battery storage. Additionally, the 2022 CBEES include energy storage systems ready requirements for single-family residences that include one or two dwelling units. While the energy storage systems ready requirement would not result in the installation of a battery storage unit, it would further support and remove potential barriers in the installation of an on-site battery storage unit.

The 2022 CBEES also have performance standards as an alternative to the prescriptive standards pathway for residential and nonresidential uses. Although the performance standards pathway does not require installation of a PV system and where applicable, battery storage, it does require land uses that would opt for this compliance option to achieve an energy-efficiency performance of the "Standard Design Building." As stated, the "Standard Design Building" represents the energy-efficiency performance of a project should it include all prescribed features (e.g., solar, battery storage) with no additional energy-efficiency features beyond what is required at minimum under the mandatory requirements and prescriptive pathway. Therefore, future land use development projects accommodated under the proposed General Plan that opt for the performance pathway would still achieve a similar level of energy efficiency as those that opt for compliance with the prescriptive pathway. Overall, it is assumed that each future update to the CBEES and CALGreen Code would result in greater building energy efficiency and move closer toward buildings achieving zero net energy.

The proposed General Plan includes policies that would contribute towards increasing energy efficiency, conservation, and renewable energy: Policy OSC-8.1 Energy conservation, Policy OSC-8.2 Renewable sources, Policy OSC-8.4 Building design and upgrades, Policy S-2.8 Healthy, resilient, and efficient buildings, and Policy S-2.9 Heat-reflecting surfaces.

The following policies on water conservation and use of recycled and reclaimed water can also contribute to reducing electricity usage and demand as a reduction water demand and increase in the use of recycled and reclaimed water would lessen the electricity usage and demand needed for distribution and wastewater treatment: Policy PFS-1.2 Recycled and reclaimed water, Policy PFS-1.3 Water conservation, Policy OSC-5.7 Native plant species, and Policy OSC-7.2 Resilient landscaping.

Transportation Energy

The proposed General Plan area would consume transportation energy (e.g., gasoline, diesel, compressed natural gas (CNG), and electricity) during operations from the use of motor vehicles. As identified in **Table 5.6-11: Operation-Related Annual Fuel Usage**, except for CNG, implementation of the proposed General Plan would generally increase VMT across the different fuel type categories overall when compared to the existing baseline conditions.

The increases in vehicle miles traveled as shown in **Table 5.6-11** would be primarily attributable to the overall growth associated with the proposed General Plan. While vehicle miles traveled and fuel usage would generally increase from implementation of the proposed General Plan, the fuel efficiency of all the fuel types under year 2048 conditions would improve compared to baseline year 2023. The improvement would be attributable to regulatory compliance (e.g., CAFE standards) that trend toward producing cars that are more fuel efficient and the natural turnover of older, less-fuel-efficient vehicles for newer, more-fuel-efficient vehicles. The CAFE standards are not directly applicable to residents or land use development projects, but to car manufacturers. Therefore, residents and employees of the proposed General Plan area do not have direct control in determining the fuel efficiency of vehicles manufactured and that are made available. However, compliance with the CAFE standards by car manufacturers would ensure that vehicles produced in future years have greater fuel efficiency and would generally result in an overall benefit of reducing fuel usage by providing the population of the proposed General Plan area more fuel-efficient vehicle options.

Table 5.6-11: Operation-Related Annual Fuel Usage				
	Gas	Diesel	Compressed Natural Gas	Electricity
EXISTING BASELINE				
Vehicle Miles Traveled	386,159,753	63,480,237	2,765,769	12,422,540
Fuel Amount	15,646,576 gal	9,709,560 gal	500,384 gal	4,528,277 kWh
Fuel Efficiency	24.68 MPG	6.54 MPG	5.53 MPG	2.74 mi/kWh
PROJECT HORIZON YEAR 2048				
Vehicle Miles Traveled	541,710,832	124,232,062	2,664,870	86,897,894
Fuel Amount	16,870,447 gal	15,706,075 gal	363,406 gal	20,733,949 kWh
Fuel Efficiency	32.11 MPG	7.97 MPG	7.33 MPG	4.19 mi/kWh
NET CHANGE FROM EXISTING BASELINE				
Vehicle Miles Traveled	155,551,079	60,751,824	-100,899	74,475,355
Fuel Amount	1,223,871 gal	5,996,515 gal	-136,978 gal	16,205,672 kWh
Fuel Efficiency	7.43 MPG	1.37 MPG	1.81 MPG	1.45 mi/kWh
Notes: gal = gallon; kWh = kilowatt hour; MPG = mile per gallon; mi/kWh = mile per kilowatt hour [1] Includes both VMT and TMT.				
Source: **Appendix 5.3 GP-1: Air Quality and Greenhouse Modeling.**				

Although vehicle miles traveled associated with EV and thus electricity usage would increase under the with-project horizon year 2048 scenario when compared to existing baseline, it is also anticipated that EVs will improve in energy efficiency. In conjunction with the regulatory (i.e., RPS, SB 350, SB 100, and SB 1020) and general trend toward increasing the supply and production of energy from renewable sources, it is anticipated that a greater share of electricity used to power EVs will be from renewable sources in future years (e.g., individual photovoltaic systems, and/or purchased electricity from SCE that is generated from renewable sources).

In addition to regulatory compliance that would contribute to more fuel-efficient vehicles and less demand in fuels, the proposed General Plan includes policies that would contribute in minimizing overall VMT, and thus fuel usage associated with the proposed General Plan area. For example, Circulation Element Policies CM-2.1, CM-2.2, CM-2.5, CM-2.6, CM-2.7, CM-2.8, and CM-2.9 would support improving the pedestrian and bicycle network infrastructures. Policy CM-2.4 would support increasing transit service. Also, Policy CM-2.10 would promote transportation demand management strategies to reduce household and employment passenger car vehicle miles traveled. Additionally, Land Use Element Policies LU-2.1 and LU-3.2 focus on creating a balanced mix of land uses and walkable areas. Overall, these Circulation Element and Land Use Element policies would contribute towards reducing single passenger car vehicle trips, which would reduce vehicle miles traveled and mobile-source emissions. Furthermore, as discussed in further details under **Impact 5.13-1** in **Section 5.13: Population and Housing**, buildout of the proposed General Plan would improve the jobs-housing ratio and provide opportunities to both live and work within the proposed General Plan area rather than commuting to other areas.

Summary. Overall, regulatory compliance (e.g., CBEES, CALGreen, RPS by utilities, and CAFE standards) would increase building energy efficiency and vehicle fuel efficiency and reduce building energy demand and transportation-related fuel usage. Additionally, the proposed General Plan includes policies related to land use and transportation planning and design, energy efficiency, public and active transit, and renewable energy generation that would contribute to minimizing building and transportation-related energy demands overall and demands on nonrenewable sources of energy. Implementation of proposed policies under the proposed General Plan in conjunction with and complementary to regulatory requirements would ensure that energy demand associated with growth under the proposed General Plan would not be inefficient, wasteful, or unnecessary. Therefore, energy impacts associated with implementation and operation of land uses accommodated under the proposed General Plan would be less than significant.

Impact 5.6-1: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.6-1: General Plan: Mitigation Measures: No mitigation required.

Impact 5.6-1: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

As described above in **Section 5.6.3**, BIG construction and operations would consume energy from electricity, diesel and gasoline consumption.

The total estimated net energy consumption from BIG construction and operations is provided in **Table 5.6-12: Projected Annual BIG Energy Consumption During Construction** and **Table 5.6-13: Projected Annual BIG Energy Consumption During Operations** and discussed in detail for each respective energy source below.

Table 5.6-12: Projected Annual BIG Energy Consumption During Construction

Project Source	Average Annual Construction Energy (Unmitigated)	Average Annual Construction Energy (Mitigated)[1]
Electricity Usage		
Water Use[2]	2.97 GWh	2.97 GWh
Concrete and Asphalt Batch Plants	3.14 GWh	3.14 GWh
Average Annual Construction Electricity	2.18 GWh	2.18 GWh
Diesel Use		
Average Annual On-Road Construction Trips[3]	2,432,388 gallons	2,432,388 gallons
Average Annual Off-Road Construction Equipment[3]	5,491,122 gallons	2,086,626 gallons
Average Annual Construction Diesel	7,923,510 gallons	4,519,015 gallons
Gasoline		
Average Annual On-Road Construction Trips	537,349 gallons	537,349 gallons

Notes:
1. **MM BIG AQ-3** requires the use of Tier 4 Final construction equipment and **MM BIG AQ-4** requires the use of renewable diesel fuel for off-road construction equipment.
2. Construction water use based on acres disturbed per day per construction sequencing and estimated water use per acre.
3. Construction fuel use was calculated based on OFFROAD emission calculations and conversion ratios from the Climate Registry.

Table 5.6-13: Projected Annual BIG Energy Consumption During Operations		
Project Source	**Annual Operational Energy (Unmitigated)**	**Annual Operational Energy (Mitigated)**
ELECTRICITY CONSUMPTION		
Electricity Usage	GWh	
Electricity Usage[1]	145	145
Water Electricity[2]	0.1	0.1
Electricity Provided by Solar[3]	-61	-91
Total Electricity	85	53
FUEL CONSUMPTION4		
2028		
Diesel Use	Gallons	
On-Road Truck Trips	1,856,101	1,856,101
Locomotives	3,961,086	3,961,086
Off-Road Equipment	5,100,499	197,092
Reduced On-Road Truck Trips[5]	-9,375,961	-9,375,961
Operational Diesel Total	1,541,726	-3,361,680
Gasoline	Gallons	
On-Road Passenger Vehicle Trips	4,847,279	4,847,279
Off-Road Equipment	37,096	14,861
Operational Gasoline Total	4,884,375	4,862,140
2033		
Diesel Use	Gallons	
On-Road Truck Trips	2,335,066	2,335,066
Locomotives	4,406,417	4,406,417
Off-Road Equipment	5,100,499	214,966
Reduced On-Road Truck Trips	-12,317,001	-12,317,001
Operational Diesel Total	-475,020	-5,360,553
Gasoline	Gallons	
On-Road Passenger Vehicle Trips	6,270,303	6,270,303
Off-Road Equipment	37,096	16,808
Operational Gasoline Total	6,307,399	6,287,111
2048		
Diesel Use	Gallons	
On-Road Truck Trips	2,914,302	2,914,302
Locomotives	6,484,258	6,484,258
Off-Road Equipment	5,142,498	242,028
Reduced On-Road Truck Trips	-14,416,337	-14,416,337
Operational Diesel Total	124,721	-4,775,749
Gasoline	Gallons	
On-Road Passenger Vehicle Trips	7,190,103	7,190,103

Table 5.6-13: Projected Annual BIG Energy Consumption During Operations		
Project Source	**Annual Operational Energy (Unmitigated)**	**Annual Operational Energy (Mitigated)**
Off-Road Equipment	53,710	21,946
Operational Gasoline Total	7,243,814	7,212,049

Notes:
1. Electricity usage is BIG specific consumption provided by 1898 & Co.
2. Water conveyance electricity based on CalEEMod Default data.
3. Unmitigated solar includes electricity offset by proposed solar farm and rooftop solar required by code. Mitigated solar includes combined offsets provided by proposed solar farm and rooftop solar and well as additional rooftop solar required by **MM BIG EN-1**.
4. Countywide fuel consumption data based on EMFAC2021 projections for each analysis year.
5. Reductions in fuel consumption reflected in the unmitigated condition associated with reduced nationwide truck miles traveled, use of dedicated Tier 4 trains to transport containers between the Ports and BIG's intermodal facility, Tier 4 switcher locomotives, use of renewable diesel, and use of electric cargo-handling equipment.

Renewable Energy Sources

This section includes a discussion of BIG's usage of renewable energy sources. BIG would include several measures that would reduce the consumption of non-renewable resources and would be required to comply with various laws, regulations, and orders discussed in **Section 5.6.2** that would minimize energy consumption and utilize renewable energy to the most feasible extent possible. Specifically, BIG would adhere to CALGreen Code § 110, which mandates the installation of all necessary infrastructure (i.e., conduit, reinforced roofs) to allow solar photovoltaic systems within BIG to be installed in the future. Further, current CARB diesel off-road requirements require off-road construction equipment fleets to use at least 99 percent renewable diesel fuel. BIG's consumption of non-renewable diesel fuel would be reduced through the use of dedicated Tier 4 locomotives to transport containers between the Ports and BIG's intermodal facility, Tier 4 switcher locomotives, modifying the fuel blend used within the Ports' existing fueling site to use up to ten percent renewable diesel, and electric cargo-handling equipment. BIG would also update existing Barstow switchers to Tier 4 switcher locomotives.

BIG operations would require approximately 145 GWh of electricity annually as shown in **Table 5.6-13** and impacts would be potentially significant. To reduce potential transload warehouse center electricity and non-renewable energy demand, mitigation measures for the transload warehouse center would require BIG to offset energy demand with on-site renewable solar electricity generation beyond Title 24 compliance (**MM BIG EN-1**) and buildings would be required to meet or exceed 2022CALGreen Tier 2 standards (**MM BIG EN-2**).

As BIG would be required to minimize energy consumption (**MM BIG EN-2**) and generate on-site renewable energy (**MM BIG EN-1**), BIG would rely on renewable energy to the most feasible extent, generating approximately 49 GWh from the proposed solar farm, approximately 12 GWh from code-required rooftop solar, and approximately 31 GWh from additional rooftop solar above code requirements (**MM BIG EN-1**), and its impacts would be less than significant after mitigation. Further, SCE would continue to increase electricity generation from renewable sources.

It should be noted that as the nature, timing, and extent of the incorporation of zero-emission and net zero emission vehicles cannot be determined at this time and any fuel consumption reductions associated with zero emission and net zero emission heavy-duty trucks were not utilized in this analysis. BIG would be required to adhere to all federal, State, and local requirements for energy efficiency, including the latest Title 24 standards. Applicable laws, regulations, and orders, as well as mitigation measures provide that BIG would not operate in a manner that is inefficient, wasteful, or unnecessary. BIG's energy consumption during construction and operations would not be wasteful, inefficient, or unnecessary. Therefore, BIG would have a less than significant impact on energy supplies.

Electricity

Construction

Electricity consumption during BIG construction would be associated with water demand, stationary construction equipment such as concrete and asphalt batch plants, and stationary facilities such as construction trailers/offices and water wells. It is noted that construction lighting would be provided by diesel powered light carts. Electricity would be required to provide non-potable water for construction activities (e.g., site preparation, dust control, equipment cleaning, and soil grading) via eight private on-site groundwater wells, and potable water for construction workers. Details concerning BIG's construction-related water demands are provided in **Section 5.17: Utilities and Service Systems**. Electricity during construction would be provided via temporary connections to existing SCE facilities.

BIG's estimated electricity consumption over the duration of construction (2.8 years) would total approximately 6.1 GWh, with an average annual consumption of 2.2 GWh. SCE's 2025 electricity sales are projected to total approximately 97,303 GWh (CEC, 2023b). BIG's construction-related average annual electricity consumption (averaged over 2.8 years of construction) would represent approximately 0.006 percent of SCE's projected annual sales. Given BIG's energy consumption would constitute only a nominal percent of SCE's projected supplies, SCE would not require additional capacity to serve BIG. Additionally, use of construction electricity would be temporary and cease once BIG is fully developed thereby resulting in no need for any long-term increase in capacity.

To minimize construction-related electricity consumption, BIG would use alternative energy sources where feasible, including solar tool charging station, and solar-powered light boards and pump switches. Further, it is reasonable to assume tools and equipment used would comply with State energy efficiency standards. As such, BIG construction would not result in wasteful, inefficient, or unnecessary consumption of electricity. For all the above reasons, BIG construction would not result in wasteful, inefficient, or unnecessary electricity consumption, and would result in a less than significant environmental impact without mitigation.

Operations

Energy demand can be assessed as either annual average consumption (usage) or peak demand (i.e., peak demand on a worst-case day). Electricity consumption during operations would be associated with water demand, lighting, electric vehicle charging (including charging for electric hostlers, forklifts, and on-road passenger vehicles), building lighting, and cranes. Electricity would be required to provide potable water for employees (e.g., rail yard and transload warehouse center buildings, electric hostler washing, crane maintenance pads, landscaping, and solar farm panel maintenance). Details concerning BIG's operational water demands are provided in **Section 5.17: Utilities and Service Systems**. Electricity during BIG operations would be provided through connection to the existing SCE Tortilla Substation via new distribution circuits.

Table 5.6-14: Estimated Future Electricity Consumption - BIG summarizes BIG's estimated net electricity consumption and indicates operations would consume approximately 145 GWh annually and would result in potentially substantial increases in electricity consumption.

BIG's operational net annual electricity usage and peak demand are provided in **Table 5.6-14.** As noted in the table, BIG's annual usage is estimated to be approximately 145,258 MWh, and peak demand is estimated to be 64.9 MW. To reduce net annual electricity consumption, BIG would offset electricity usage through on-site solar generation. BIG would generate approximately 49,200 MWh (annual) of on-site solar through the development of a 21 MW (peak supply) solar farm and approximately 11,680 MWh (annual) through code-required rooftop solar on the transload warehouse center buildings. Because solar power is not generating electricity at night, solar generally would not reduce peak demand. However, it would reduce annual electrical consumption. **MM BIG EN-1** requires on-site renewable energy generation based on the maximum solar roof area available. Implementation of **MM BIG EN-1** would offset an additional approximately 31,025 MWh (annual) of usage. BIG's net electrical usage would be approximately 53,353 MWh annually (53 GWh). SCE's 2028 electricity sales are projected to be approximately 97,303 GWh (CEC, 2023b). BIG's net electricity consumption with incorporation of mitigation would be approximately 0.05 percent of SCE's projected 2028 electricity sales**.** BIG would result in nominal electricity use proportional to annual County use and would not significantly affect existing energy fuel supplies or resources, and new capacity, infrastructure, or additional sources of electricity are not anticipated to be required.

Table 5.6-14: Estimated Future Electricity Consumption - BIG		
Unit	**Peak Electrical Demand (MW)**	**Annual Electrical Usage (MWh)**
Intermodal Facility	34.5	46,018
Transload Warehouse Center	30.4	99,240
BIG Total Demand/Usage	64.9	145,258
Solar Farm Generation		-49,200
Transload Warehouse Center solar generation – Title 24 compliance		-11,680
BIG Net Consumption (Unmitigated)		84,378
Solar Generation Mitigation		-31,025
BIG Net Consumption (Mitigated)		53,353
Source: Electricity demand is BIG specific consumption provided by 1898 & Co.		

While portions of the intermodal facility would be "electric locomotive ready" by including some infrastructure needed for future electric locomotives, because electric locomotives are not currently commercially feasible given range limitations, long charging durations, and other constraints, electricity consumption from electric locomotives is not included in this analysis.

BIG operations would also comply with applicable energy efficiency standards including the CALGreen Code and the California Energy Code, which would ensure BIG would be at least efficient as similar facilities within the State. Prior to receiving SCE service, BIG would require a Method of Service study to help SCE determine specific requirements to ensure BIG is supplied with adequate electricity.

BIG operations would reduce electricity consumption by the following:

- Construction of an approximately 21 MW solar farm
- Install rooftop solar
- Comply with applicable energy efficiency standards including CALGreen and the California Energy Code
- Implementation of **MM BIG EN-1** and **MM BIG EN-2**.

For all the above reasons, BIG operations would not result in wasteful, inefficient, or unnecessary electricity consumption and additional infrastructure or capacity is not required. A less than significant environmental impact would result.

Diesel Fuel

Construction

BIG's diesel fuel consumption during construction would be associated with heavy-duty off-road construction equipment, locomotive deliveries, on-road heavy-duty truck deliveries (BIG construction would generate a maximum 1,732 truck trips on a peak day in 2026), mobile construction tools, and diesel generators.

BIG's estimated unmitigated diesel fuel consumption during construction would total approximately 22,185,828 gallons and average approximately 7,830,292 gallons annually (see **Table 5.6-12**). The County's annual diesel fuel use in 2025 is assumed to be approximately 281,400,000 gallons (CARB, 2023).[5] BIG's estimated average annual diesel fuel consumption during construction would represent approximately 2.8 percent of the County's current diesel fuel consumption. Therefore, BIG would result in relatively low construction fuel use proportional to annual County use and would not significantly affect existing energy fuel supplies or resources, and new capacity or additional sources of construction diesel fuel are not anticipated to be required. Additionally, the contractor would limit idling of construction equipment to five (5) minutes pursuant to CARB's In-Use Off-Road Diesel-Fueled Fleets (13 CCR §2449). Therefore, the majority of diesel fuel used during BIG construction (except for minimal amounts during the 5-minute idling period) would be productive, thus, would not be wasteful, inefficient, or unnecessary.

Additionally, use of construction fuel would be temporary and cease once BIG is fully developed thereby resulting in no need for any long-term increase in capacity.

BIG construction reduces diesel fuel usage during construction by the following:

- Optimized site grading resulting in a balanced site (there is no import or export of soil required)

[5] Diesel includes vehicles considered diesel and hybrid fuel types.

- Prioritize the use of rail transport for delivering rail ties and ballast to the construction site (rail transport is the most efficient way to transport freight per gallon of diesel expended), except where delivery by haul truck would be more efficient (AAR, 2023)
- Recycling up to 65 percent of construction waste, diverting from a landfill

There are no unusual characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State. In addition, energy conservation would occur during construction through compliance with CCR 13 § 2485 and 2449, which would require diesel-powered construction equipment to be off when not in use and limit idling times to a maximum of five minutes thereby reducing diesel fuel usage during construction (except in circumstances when the limit does not apply (e.g., when queuing)), thereby minimizing wasteful fuel consumption during construction. Further, CARB's Statewide Truck and Bus Regulation would ensure most heavy-duty trucks accessing BIG during construction to have a 2010 model year and newer engine, which are substantially more fuel efficient than earlier model years, thereby reducing diesel fuel consumption for construction trips. **MM BIG AQ-4** requires the use of renewable diesel to minimize and control exhaust emissions from heavy-duty diesel-fueled construction equipment and heavy diesel trucks. Use of renewable diesel would improve fuel economy and reduce the consumption of non-renewable diesel, reducing diesel fuel consumption to approximately 12,653,241 gallons total and approximately 4,519,015 gallons annually. This represents approximately 1.6 percent of total County consumption in 2025. Therefore, BIG would result in relatively low construction fuel use proportional to annual County use and would not substantially affect existing energy fuel supplies or resources, and new capacity or additional sources of construction diesel fuel are not anticipated to be required.

For the above reasons, BIG construction would not result in wasteful, inefficient, or unnecessary diesel consumption, and would result in a less than significant environmental impact.

Operations

BIG's operational diesel fuel consumption would be associated with heavy-duty truck hauling trips, rail yard equipment, line haul and switcher locomotives, and emergency diesel generators. BIG would incorporate the use of renewable diesel and electric cargo-handling equipment,) and comply with applicable laws, orders, and regulations. Additionally, BIG would transport all containers with trains instead of heavy-duty trucks, which would eliminate almost all truck trips and truck miles traveled (TMT). The annual TMT added and removed from the national roadway network by BIG are shown in **Table 5.6-15: Annual Net Truck Miles Traveled Removed from National Network by BIG**. As previously identified in **Table 5.6-13**, diesel fuel usage would be a net decrease as a result of BIG, due to removing hundreds of millions of truck miles as identified in **Table 5.6-15**.

Table 5.6-15: Annual Net Truck Miles Traveled Removed from National Network by BIG			
	Opening Year 2028	Interim Year 2033	Horizon Year 2048
Daily			
Daily BIG Daily Truck Trips[1]	594	753	929
Daily BIG Peak Daily TMT[2]	40,273	51,053	62,986
Daily Truck Trips Removed (Nationwide)[3]	-1,715	-2,270	-2,635
Daily Truck Trips Removed (California)[4]	-2,083	-2,754	-3,198
Daily Net TMT Reduction in MDAQMD Network[5]	-40,328	-49,500	-59,305
Daily Net TMT Reduction in South Coast AQMD Network[5]	-124,710	-163,607	-192,255
Daily Net TMT Reduction TMT in California Network[5]	-159,263	-209,220	-244,880
Daily Net TMT Reduction in Nationwide Network[5]	-596,780	-784,417	-912,666
Annual			
Annual BIG Truck Trips[1]	192,000	243,600	300,370
Annual Truck Trips Removed (Nationwide)[3]	-627,000	-829,220	-962,700
Annual Truck Trips Removed (California)[4]	-760,270	-1,005,270	-1,167,090
Annual Net TMT Reduction in MDAQMD Network[5]	-14,719,796	-18,067,338	-21,646,477
Annual Net TMT Reduction in South Coast AQMD Network[5]	-45,519,012	-59,716,409	-70,173,104
Annual Net TMT Reduction in California Network[5]	-58,130,956	-76,365,405	-89,381,289
Annual Net TMT Reduction in Nationwide Network[5]	-217,824,523	-286,312,231	-333,123,035

Notes:

1 Heavy-duty truck trip generation to/from BIG. Includes heavy-duty trucks traveling to/from BIG's transload warehouse center and IMF. See trip generation discussion in **Appendix 5.15 BIG-2: Level of Service Assessment - Transportation Analysis**.

2 Consistent with the "Daily BIG Truck Trips", this includes a 13% surplus when converting from annual to daily values to account for potential seasonal surges (based on data from other southern California IMFs provided by BNSF on 12/02/2022). See trip generation discussion in the **Appendix 5.15 BIG-2: Level of Service Assessment - Transportation Analysis**.

3 "Truck Trips Removed" is the "Plus BIG Truck Trips" minus "No BIG Baseline Truck Trips" (average daily or annual values, as noted). Includes truck trips nationwide. See truck miles traveled discussion in **Appendix 5.15 BIG-1: CEQA Assessment – Transportation Analysis**.

4 "Truck Trips Removed (California)" is higher than "Truck Trips Removed (Nationwide)" because under No BIG Baseline conditions all trips related to the transload warehouse center originate in California, while Plus BIG conditions includes truck trips from hub cities to final nationwide destinations. See truck miles traveled discussion in **Appendix 5.15 BIG-1: CEQA Assessment – Transportation Analysis**.

5 "Net TMT Reduction" (also referred to as "Change in TMT due to BIG" or "TMT removed") is the "Plus BIG TMT" minus "No BIG Baseline TMT" for each relevant region (average daily or annual values, as noted). Due to distance rounding, the California TMT is slightly lower than the sum of the South Coast AQMD and MDAQMD TMT values. Additionally, a portion of the California Network TMT reductions occur within the San Joaquin Valley Air Basin in addition to the South Coast Air Basin and the Mojave Desert Air Basins. Therefore, combining TMT reductions within MDAQMD and South Coast AQMD jurisdictions will not match the total California Network TMT reduction.

Source: Kimley-Horn and Associates, Inc., 2025.

BIG's estimated unmitigated annual diesel fuel consumption during operations would result in an increase of approximately 1.5 million gallons in 2028, a reduction of approximately 0.5 million gallons in 2033, and an increase of approximately 0.1 million gallons in 2048 (accounting for the reduction in truck miles) (see **Table 5.6-12**). It is noted that operational diesel fuel consumption is expected to decline over time as, among other things, zero emissions and near zero emissions heavy-duty trucks become more available and a portion could be incorporated into the heavy-duty truck fleets serving BIG. However, no credit for potential future reductions in operational diesel fuel consumption is incorporated into this analysis, as discussed further below.

While BIG would consume a considerable amount of diesel fuel, it is noted that BIG's objective is to convert existing heavy-duty truck trips to rail trips, thereby reducing overall nationwide diesel fuel consumption. As discussed in **Section 5.17 Table 5.6-15**, BIG would remove approximately 58,130,956 annual truck miles in Opening Year 2028, approximately 76,365,405 annual truck miles in Interim Year 2033, and approximately 89,381,289 annual truck miles in Horizon Year 2048 from the California network.

BIG would include mitigation measures to minimize diesel fuel (e.g., use of renewable diesel rubber-tired gantry cranes [**MM BIG AQ-8**]). As noted above, the use of renewable diesel would improve fuel economy and would not increase demand for conventional non-renewable diesel fuel. BIG's estimated net mitigated annual diesel fuel consumption during operations would result in net decreases of approximately 3.4 million gallons in 2028, 5.4 million gallons in 2033, and 4.8 million gallons in 2048 (accounting for the reduction in truck miles). BIG's estimated mitigated diesel fuel consumption during operations would result in net reductions. Therefore, BIG operations would account for relatively low operational diesel fuel use proportional to County use and would not significantly affect existing diesel fuel supplies or resources, and new capacity or additional sources of diesel fuel are not anticipated to be required.

BIG operations would reduce non-renewable diesel fuel usage by the following:

- Use of renewable diesel
- Use of electric cargo-handling equipment
- Use of zero-emission TRUs
- Convert existing heavy-duty truck trips to rail trips, reducing overall (i.e., regional, statewide, and nationwide) diesel consumption.

BIG would serve an important role in the movement of goods throughout the state, increase the use of renewable diesel fuel, and reduce on-road diesel fuel consumption on a regional, statewide, and nationwide basis. The County would not require additional capacity to serve BIG operations. Additionally, as stated above, BIG would help facilitate the conversion of heavy-duty truck trips to train trips, which are more fuel efficient. As such, BIG operations would not result in wasteful, inefficient, or unnecessary electricity consumption, and would result in a less than significant environmental impact.

Gasoline Fuel

Construction

Gasoline fuel consumption during BIG construction would be associated with on-road vehicles used for construction worker trips and vendor hauling to construction sites, and small construction tools within BIG footprint. During construction, BIG would use alternative energy sources where feasible, including solar-powered generators to charge electric handheld construction tools. Additionally, the contractor would limit applicable idling of construction equipment (including light-duty trucks) to 5 minutes. Therefore, the majority of gasoline used during BIG construction (except for minimal amounts during the idling period) would be productive, thus, would not be wasteful, inefficient, or unnecessary.

BIG's unmitigated construction gasoline fuel consumption is estimated to total approximately 537,349 gallons per year (see **Table 5.6-12**). By BIG construction year 2025, the County's annual gasoline fuel use is anticipated to be 828,612,797 gallons (CARB, 2023). BIG's estimated gasoline fuel consumption during construction would represent approximately 0.06 percent of the County's current gasoline fuel consumption**.**

Based on the total BIG's relatively low construction gasoline fuel use proportional to annual County use, BIG construction would not substantially affect projected energy gasoline fuel supplies or resources, and new capacity or additional sources of construction gasoline fuel are not anticipated to be required. Additionally, use of construction fuel would be temporary and cease once BIG is fully developed thereby resulting in no need for any long-term increase in capacity.

BIG construction would reduce gasoline usage during construction by the following:

- Use of solar-powered generators for electric handheld construction tools
- Limit idling of construction equipment to 5 minutes

There are no unusual characteristics that necessitate the use of gasoline fuel vehicles that would be less energy-efficient than at comparable construction sites in the region or State. Further, it is reasonable to assume all on-road gasoline fuel vehicles that access BIG during construction would comply with applicable CARB and other State and federal fuel efficiency standards. For all the above reasons, BIG construction would not result in wasteful, inefficient, or unnecessary gasoline consumption, and would result in a less than significant impact.

Operations

Gasoline fuel consumption during operations would be associated with on-road vehicle worker and delivery trips.

BIG's estimated annual unmitigated operational gasoline fuel consumption would total approximately 4.9 million gallons in the year 2028, 6.3 million gallons in 2033, and 7.2 million gallons in 2048 (see **Table 5.6-12**). The County's annual gasoline fuel use is assumed to be 783,481,726 gallons by Opening Year 2028, 733,687,287 gallons by Interim Year 2033, and 696,369,711 gallons by year 2048 gallons (CARB, 2023). BIG's estimated operational gasoline fuel consumption would represent approximately 0.6 percent of the County's 2028 gasoline consumption, 0.9 percent of the County's 2033 gasoline consumption, and 1.0 percent of the County's 2048 gasoline fuel consumption. BIG's operational gasoline consumption would be minimized through installing electric vehicle charging stations and infrastructure in compliance with Title 24 requirements.

Therefore, BIG operational fuel use would be relatively low proportional to annual County use and would not significantly affect projected gasoline fuel supplies or resources, and new capacity or additional sources of operational gasoline fuel are not anticipated to be required. BIG's operational gasoline fuel use would be for worker and vendor trips. There are no mitigation applicable to operational gasoline consumption. However, as discussed in **Section 5.15: Transportation**, BIG's Home Based Work VMT per Worker is forecast to be less than the citywide average Home Based Work VMT per Worker under the Horizon Year (2048) conditions. Additionally, the citywide total daily VMT per service population is forecast to be lower with BIG than the No BIG baseline under the Horizon Year (2048) conditions. BIG operational consumption of gasoline would not be considered wasteful or inefficient as they are critical to operations that would serve an important role in the movement of goods throughout the State. Additionally, it is reasonable to assume all on-road gasoline fuel vehicles that access BIG during operations would comply with applicable CARB and other State and federal fuel efficiency standards. Further, it should be noted that as overall vehicle fuel efficiency for on-road gasoline vehicles accessing BIG over time increase per U.S. EPA CAFE standards, BIG's gasoline fuel consumption would be reduced over time. However, no credit is taken in this analysis.

For all the above reasons, BIG operations would not result in wasteful, inefficient, or unnecessary gasoline consumption, and would result in a less than significant environmental impact.

Impact 5.6-1: BIG: Level of Significance Before Mitigation: Potentially Significant Impact.

Impact 5.6-1: BIG: Mitigation Measures: MM BIG AQ-1 through **AQ-6, MM BIG AQ-8,** and **MM BIG AQ-10**, and the following mitigation measures are applicable.

MM BIG EN-1 **On-Site Renewable Electricity Generation.** Prior to the issuance of building permits for intermodal facility structures or transload facilities, BIG shall install on-site rooftop solar generation beyond Title 24 compliance, or approximately 17 megawatts direct current (MWdc) for the total 9 million-square-foot warehouse building area. Solar panel installation shall be phased proportionally with buildout of the Transload Warehouse Center (i.e., on-site solar generation shall generally be distributed equally among future buildings and the total 17 MWdc may not be required less than 9 million square feet are not ultimately developed).

BIG shall ensure solar photovoltaic (PV) panels or other source of renewable energy generation is incorporated into the design based on the maximum solar roof area available. The maximum solar roof area available will be building-specific and dependent on the structural considerations of each building and the ability to maximize the solar zone of each building (as defined in Section 110.10 of the California Energy Code). The solar zone (i.e., the location where solar panels can be installed) shall comply with 2022 California Energy Code, § 110.10, and shall comply with access, pathway, ventilation, and spacing requirements and excluding any skylight area.

The final PV generation facility size is dependent on the maximum solar roof area available and shall be approved by Southern California Edison (SCE). SCE's Rule 21 governs operating and metering requirements for any facility connected to SCE's distribution system. Should SCE limit the off-site electricity export, BIG may utilize a battery energy storage system (BESS) to lower off-site export while maintaining on-site renewable generation to off-set consumption.

Each building shall include an electrical system and other infrastructure sufficiently sized to accommodate the PV arrays. The electrical system and infrastructure shall be clearly labeled with noticeable and permanent signage. This mitigation measure applies only to tenant or occupancy permits and not the building shell approvals.

MM BIG EN-2 **CALGreen Tier 2**. Prior to the issuance of building permit for intermodal facility structures or transload facilities, the City shall provide documentation to the City of Barstow demonstrating that BIG is designed in a manner consistent with 2025, or then current, CALGreen Tier 2 standards in effect at the time of building permit application.

Impact 5.6-1: BIG Level of Significance After Mitigation: Less than Significant with Mitigation Incorporated.

Impact 5.6-2	***Would the Project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?***

Proposed General Plan

The following evaluates consistency of the proposed General Plan with California's Energy Action Plan and Long-Term Energy Efficiency Strategic Plan.

Energy Action Plan

As discussed in **Section 5.6.2.2**, the Energy Action Plan was last updated in 2005 and was developed by the CPUC, CEC, and California Power Authority to create a unified State energy policy framework. It serves as one of the State's strategies for planning for reliable, affordable, and environmentally responsible energy procurement and supply. The Energy Action Plan further establishes a "loading order" in identifying priorities for statewide energy planning efforts, which translates into first prioritizing meeting existing demand with cost-effective energy efficiency and demand response efforts, then using renewable energy resources and distributed generation, and finally meeting the remaining energy demand with renewable or otherwise "clean" fossil-fuel power generation resources (e.g., renewable natural gas). Other priorities identified in the Energy Action Plan but not directly related to local agencies, include modernizing transmission and distribution infrastructure, enhancing reliability in electricity and natural gas markets, and ensuring affordable access to all Californians. Therefore, a General Plan, such as the proposed General Plan, can be assessed for consistency with the Energy Action Plan by examining how its policies generally support or conflict with the strategies of the plan, such as promoting energy resource deployment consistent with the plan's loading order.

As listed in **Section 5.6.6**, the proposed General Plan includes several policies that would support the continued implementation of the Energy Action Plan. For instance, Policy LU-2.1 supports reduced vehicle trips and energy demand by integrating housing, jobs, and services closely together. Policy LU-3.2 further promotes mixed-use development and walkable design, thereby reducing reliance on fossil fuels for vehicular transportation. Policies CM-2.1 through CM-2.7, CM-2.9, and CM-2.10 collectively further reduce vehicle miles traveled and reliance on fossil fuels, lowering energy demand in line with the Energy Action Plan's efficiency-first principle in its established loading order. Policy OSC-8.2 additionally promotes renewable energy for individual developments' construction and operation, further supporting the Energy Action Plans' loading order prioritization. Lastly, Policy OSC-3.3 encourages low-emission fleets and efficient municipal operations, aligning with the Energy Action Plan's energy efficiency and clean energy supply objectives. Therefore, the proposed General Plan would be considered consistent with the Energy Action Plan strategies, and this impact would be less than significant.

Long-Term Energy Efficiency Strategic Plan

As discussed in **Section 5.6.2.2**, the Long-Term Energy Efficiency Strategic Plan was last updated in 2011 and serves as the State's long-term roadmap to make energy efficiency a top priority in supporting California's grid harmonization and renewable energy integration efforts. As discussed, key policies contained therein includes achieving a zero net energy performance for all new residential construction by 2020 and all new commercial construction by 2030. While the 2020 benchmark goal for new residential construction has since passed, the goal continues to underpin the triennial updates to the CBSC and Energy Code. The Long-Term Energy Efficiency Strategic Plan serves as a living strategic document for State and local agencies and emphasizes the integration of energy efficiency policies and measures into planning efforts as a critical component to advancing the objectives of the plan. Therefore, a General Plan, such as the proposed General Plan, can be assessed for consistency with the Long-Term Energy Efficiency Strategic Plan by examining how its policies generally support or conflict with the strategies of the plan, such as promoting compact in-fill development, green building standards, and zero net energy readiness.

As listed in **Section 5.6.6**, the proposed General Plan includes several policies that would support the continued implementation of the Long-Term Energy Efficiency Strategic Plan. Policy OSC-8.1 directly advances the energy-efficiency objectives of the Long-Term Energy Efficiency Strategic Plan by highlighting conservation strategies as the preferred mechanism to meet energy needs. Policy OSC-8.4 promotes energy-efficiency in new development and existing building retrofits, thereby supporting the plan's objectives for achieving zero net energy design for new residential and commercial development. Policy S-2.8 supports improvements to energy efficiency, energy storage, and solar readiness, directly advancing the plan's objectives for integrating demand-side efficiency, distributed energy resources, and energy resiliency. Policies S-2.9 and OSC-1.6 further identify design considerations for reducing building cooling loads with passive building features, such as heat-reflecting surfaces. Finally, Policies PFS-1.2 and PFS-1.3 promote energy-efficient water use by reducing consumption through conservation efforts and supplementing supplies with recycled water. Therefore, the proposed General Plan would be considered consistent with the Long-Term Energy Efficiency Strategic Plan strategies, and this impact would be less than significant.

Impact 5.6-2: General Plan: Level of Significance: Less than Significant Impact.

Impact 5.6-2: General Plan: Mitigation Measures: No mitigation required.

Impact 5.6-2: General Plan: Level of Significance After Mitigation: No significant impact would occur**.**

Barstow International Gateway

The CWP and County GHG Emissions Reduction Plan would apply to BIG's off-site improvement construction and operation, which applicable policies are listed below in **Table 5.6-16: CWP Analysis – BIG** and **Table 5.6-17: County of San Bernardino Greenhouse Gas Emissions Reduction Plan Analysis - BIG** respectively.

County of San Bernardino Countywide Plan

Table 5.6-16: CWP Analysis – BIG

CWP Policy	BIG Analysis
RENEWABLE ENERGY & CONSERVATION ELEMENT	
Policy RE-1.1. Continue implementing the energy conservation and efficiency measures identified in the County of San Bernardino Greenhouse Gas Emissions Reduction plan.	**No Conflict**. See **Table 5.6-17: County of San Bernardino Greenhouse Gas Emissions Reduction Plan Analysis - BIG** below.
Policy RE-1.2. Optimize energy efficiency in the built environment.	**No Conflict.** See analysis below for Policy RE-1.4.
Policy RE-1.4. Encourage residents and businesses to conserve energy.	**No Conflict.** As discussed above, BIG construction would implement rooftop solar on transload warehouse buildings, MM BIG AQ-4 (renewable diesel construction equipment), **MM BIG EN-1** (on-site renewable solar electricity generation), and **MM BIG EN-2** (exceed CALGreen Tier 2 standards) and comply with applicable laws, ordinances, and regulations that would minimize wasteful energy usage in construction equipment. Applicable regulations include CCRs, Title 13, § 2449, which requires diesel-powered construction equipment to be turned off when not in use, thereby reducing potential equipment idling time and minimizing fuel waste. With the exception of Hinkley Road Bridge lighting and other associated County roadway lighting improvements, off-site improvements are not foreseen to use energy during operations. Bridge lighting would comply with County lighting and CALGreen energy efficiency standards, which would require appropriate energy efficient performance and therefore would not conflict with this policy.

San Bernardino County Regional Greenhouse Gas Reduction Plan

Table 5.6-17: County of San Bernardino Greenhouse Gas Emissions Reduction Plan Analysis - BIG	
Measure	**BIG Analysis**
ENERGY EFFICIENCY	
Measure Energy-2: Outdoor Lighting Upgrades for Existing Development. Adopt outdoor lighting standards in the zoning ordinance to reduce electricity consumption. This could be achieved by requiring a percentage of outdoor lighting fixtures to use LED bulbs by 2030. The lighting standards could also include the following provisions. ▪ Encourage lighting along the urban-rural edge, not to exceed one-half the current maximum lighting standard. ▪ Prohibit continuous all-night outdoor lighting in parks, sport facilities, construction sites, and other relevant areas (unless it compromises safety). ▪ Implement or exceed CALGreen's non-residential voluntary mandatory measures related to outdoor lighting controls and equipment (Section A5.209.3) and outdoor lighting (Section A5.209.4), (i.e., achieve CALGreen Tier 1 lighting standards or otherwise demonstrate that energy efficiency of lighting fixtures exceeds mandatory Title 24 by minimum 15%).	**No Conflict.** Construction would be temporary in nature and would comply with applicable laws, ordinances, and regulations. While BIG construction would include nighttime work and outdoor nighttime lighting during night construction, BIG would not conflict with this measure as outdoor nighttime lighting would be necessary for construction safety. During operations, off-site improvements would not be lighted apart from County roadway lighting such as Hinkley Bridge. However, all lighting would be subject to County lighting and CALGreen energy efficiency standards and therefore would not conflict with this measure.
Measure Energy-3: All Electric Buildings. Adopt building electrification targets and incentives, for both new commercial and residential buildings and retrofits. Establish a goal that a percentage of new and commercial and residential buildings and retrofits. Establish a goal that a percentage of new and existing buildings use electric HVAC and water heating systems.	**No Conflict.** BIG construction activities would not require construction of new natural gas facilities and BIG does not propose any new natural gas infrastructure for BIG operations. BIG's proposed buildings would use electric power for heating and cooling.
Measure Energy-5: Renewable Energy – New Commercial/Industrial. Establish a goal for solar installations on new commercial and industrial development to be achieved before 2030. Potential goals might be: ▪ Aggressive commitment – 30% of energy requirements for new development supplied by on-site solar power.	**No Conflict.** BIG would offset electricity usage and demand through on-site solar generation. BIG would generate approximately 61 GWh of on-site solar through the development of a 21 MW solar farm and approximately 12 GWh through code-required rooftop solar on the transload warehouse center buildings. **MM BIG EN-1** requires on-site renewable energy generation based on the maximum solar roof area available. Incorporation of **MM BIG EN-1** would offset an additional 31 GWh of electricity.

Table 5.6-17: County of San Bernardino Greenhouse Gas Emissions Reduction Plan Analysis - BIG	
Measure	**BIG Analysis**
▪ Medium commitment – 15% of energy requirements for new development supplied by on-site solar power. ▪ Low commitment – 5% of energy requirements for new development supplied by on-site solar power. These goals could be supported through nonfinancial incentives or streamlined permitting through the jurisdictions. Primary funding would likely be through state- or utility-level programs or through private funding such as a Power Purchase Agreement (PPA). Jurisdictions may also act as a resource for connecting project proponents with funding opportunities.	
Measure Energy-6: Solar Energy for Warehouse Space. Promote and incentivize solar installations on existing and new warehouse space through partnerships with SCE and other private sector funding sources including SunRun, Tesla, and other solar lease or PPA companies. Establish a goal that a percentage of new and existing warehousing projects install solar on a percentage of the building's roof space. This goal could be supported through nonfinancial incentives or streamlined permitting. Jurisdictions may also act as a resource for connecting project proponents with funding opportunities.	**No Conflict.** BIG would generate approximately 12 GWh through code-required rooftop solar on the transload warehouse center buildings. **MM BIG EN-1** requires on-site renewable energy generation based on the maximum solar roof area available. Incorporation of **MM BIG EN-1** would offset an additional 31 GWh of electricity.
OFF-ROAD EQUIPMENT	
Off-Road Equipment-2: Idling Ordinance. Adopt an ordinance that limits idling time for heavy-duty diesel trucks beyond CARB or local air district regulations and if not already required as part of CEQA mitigation. Recommended idling limit is 3 minutes. As part of permitting requirements or city contracts, encourage contractors to submit a construction vehicle management plan that includes such things as idling time requirements; requiring hour meters on equipment; and documenting the serial number, horsepower, age, and fuel of all on-site equipment. State law currently requires all off-road equipment fleets to limit idling to no more than 5 minutes.	**No Conflict.** As discussed above, BIG would comply with CCRs, Title 13, § 2449 requiring diesel-powered construction equipment to be turned off when not in use, thereby reducing potential equipment idling time and minimizing fuel waste. Therefore, BIG would not conflict with this measure.

See **Table 5.11-11: Proposed General Plan Consistency – BIG** for an analysis of proposed General Plan policies applicable to BIG. As shown in **Table 5.11-11**, BIG would not conflict with policies regarding renewable energy or energy efficiency.

Construction

As shown above in **Table 5.6-16** and **Table 5.6-17**, and **Table 5.11-11** of **Section 5.11: Land Use and Planning**, BIG would not conflict with applicable County nor City policies related to renewable energy and energy efficiency during construction. Further, as discussed in **Appendix 5.3 BIG-2**, BIG would be subject to all applicable City, County, State, and federal regulations regarding energy efficiency as construction would occur within both City and County jurisdiction. Additionally, BIG would use alternative energy sources where feasible, including solar-powered generators for electric handheld construction tools and **MM BIG AQ-4** requires the use of renewable diesel to minimize and control exhaust emissions from heavy-duty diesel-fueled construction equipment and heavy diesel trucks. Use of renewable diesel would improve fuel economy and reduce the consumption of non-renewable diesel, reducing diesel fuel consumption to approximately 12.7 million gallons total and approximately 4.5 million gallons annually. Therefore, BIG construction would not conflict with any existing State or local plan for renewable energy and energy efficiency and its impact would be considered less than significant.

Operations

As discussed above, energy conservation policies and plans relevant to BIG operations include the City's proposed General Plan, and the County's CWP and Regional GHG Reduction Plan. BIG would also comply with existing energy standards such as the CALGreen Code. Further, BIG would be consistent with CARB's *2022 Scoping Plan for Achieving Carbon Neutrality* which would also reduce energy use; see Section 6.2 of **Appendix 5.3 BIG -2**.

CWP and Regional GHG Reduction Plan policies are only relevant to BIG's off-site improvements. Apart from nighttime lighting for Hinkley Road Bridge, off-site improvements (lead tracks, drainage improvements, and 33kV extension from Tortilla substation) would not result in direct energy demand, thus, CWP policies would not be applicable to most BIG off-site improvements. As discussed in **Table 5.6-17**, lighting for Hinkley Road Bridge would comply with applicable County standards, which would adhere to applicable energy conservation policies and regulations.

Compliance with State and local energy efficiency standards would ensure that BIG would meet all applicable energy conservation policies and regulations. Further, BIG would advance current State renewable energy plans with its proposed on-site solar generation, and would be consistent with the State Rail Plan by converting a portion of the existing heavy-duty truck traffic to trains. BIG's consumption of non-renewable diesel fuel would be reduced through the use of dedicated Tier 4 trains to transport containers between the Ports and BIG's intermodal facility, Tier 4 switcher locomotives, modifying the fuel blend used within the Ports' existing fueling site to use up to ten percent renewable diesel, and electric cargo-handling equipment. BIG would also update existing Barstow switchers to Tier 4 switcher locomotives. BIG would also include mitigation measures to minimize diesel fuel to the greatest extent feasible (e.g., use of renewable diesel rubber-tired gantry cranes [**MM BIG AQ-8**] and zero-emission truck refrigeration units [**MM BIG AQ-10**]). With regards to electricity consumption, in addition to the proposed solar farm and installation of code-required rooftop solar, mitigation measures for the transload warehouse center would require BIG to offset energy demand with on-site renewable solar electricity generation beyond Title 24 compliance (**MM BIG EN-1**) and buildings would be required to meet or exceed CALGreen Tier 2 standards (**MM BIG EN-2**). Therefore, BIG would not conflict with any applicable State and local plans and would therefore have a less than significant impact on existing State and local plans for renewable energy and energy efficiency with mitigation incorporated.

Impact 5.6-2: BIG: Level of Significance Before Mitigation: Potentially Significant Impact.

Impact 5.6-2: BIG: Mitigation Measures: MM BIG AQ-1 through **MM BIG AQ-6**, **MM BIG AQ-8, MM BIG AQ-10, MM BIG EN-1**, and **MM BIG EN-2** are applicable.

Impact 5.6-2: BIG Level of Significance After Mitigation: Less than Significant with Mitigation Incorporated.

5.6.7 SIGNIFICANT UNAVOIDABLE IMPACTS

Proposed General Plan

The proposed General Plan would result in no significant unavoidable impacts concerning energy.

Barstow International Gateway

BIG would result in no significant unavoidable impacts concerning energy.

5.6.8 REFERENCES

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