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December 5, 2022

Mr. Steven Schwartz
VWP-OP Nirvana Owner, LLC
2390 E. Camelback Rd., Ste. 305
Phoenix, AZ 85016

Subject: Shinohara Industrial Center Project – CEQA Energy Review, 517 Shinohara Lane City of Chula Vista, CA

Dear Mr. Schwarts:

MD Acoustics, LLC (MD) has completed a CEQA energy review for the proposed Shinohara Industrial Project located at 517 Shinohara Lane near Main Street between Oleander Avenue and Brandywine Avenue in the City of Chula Vista, San Diego County, California. The approximately 9.72-acre project site is proposed to be developed with a 168,926 square foot warehouse and distribution center with 4,506 square feet of office space and 4,724 square feet of mezzanine space.

1.0 Existing Energy Conditions

Overview

California's estimated annual energy use as of 2019 included:

- Approximately 277,704 gigawatt hours of electricity; [1]
- Approximately 2,136,907 million cubic feet of natural gas per year (for the year 2018)[2];and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015)[3].

As of 2019, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 39.3 percent transportation;
- Approximately 23.2 percent industrial;
- Approximately 18.7 percent residential; and
- Approximately 18.9 percent commercial.[4]

[1]California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2020. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation.
[2]Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] August 31, 20020. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.
[3]California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] April 19, 2018. https://www.energy.ca.gov/assessments/
[4]U.S. Energy Information Administration. California Energy Consumption by by End-Use Sector. California State Profile and Energy Estimates.[Online] January 16, 2020 https://www.eia.gov/state/?sid=CA#tabs-2

California's electricity in-state generation system generates approximately 200,475 gigawatt-hours each year. In 2019, California produced approximately 72 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 9 percent) and the U.S. Southwest (approximately 19 percent). Natural gas is the main source for electricity generation at approximately 42.97 percent of the total in-state electric generation system power as shown in Table 1.

Table 1: Total Electricity System Power (California 2019)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Percent of Imports	California Power Mix (GWh)	Percent California Power Mix
Coal	248	0.12%	219	7,765	7,985	10.34%	8,233	2.96%
Natural Gas	86,136	42.97%	62	8,859	8,921	11.55%	95,057	34.23%
Nuclear	16,163	8.06%	39	8,743	8,782	11.37%	24,945	8.98%
Oil	36	0.02%	0	0	0	0.00%	36	0.01%
Other (Petroleum Coke/Waste Heat)	411	0.20%	0	11	11	0.01%	422	0.15%
Large Hydro	33,145	16.53%	6,387	1,071	7,458	9.66%	40,603	14.62%
Unspecified Sources of Power	0	0.00%	6,609	13,767	20,376	26.38%	20,376	7.34%
Renewables	64,336	32.09%	10,615	13,081	23,696	30.68%	88,032	31.70%
Biomass	5,851	2.92%	903	33	936	1.21%	6,787	2.44%
Geothermal	10,943	5.46%	99	2,218	2,318	3.00%	13,260	4.77%
Somall Hydro	5,349	2.67%	292	4	296	0.38%	5,646	2.03%
Solar	28,513	14.22%	282	5,295	5,577	7.22%	34,090	12.28%
Wind	13,680	6.82%	9,038	5,531	14,569	18.87%	28,249	10.17%
Total	200,475	100.00%	23,930	53,299	77,229	100.00%	277,704	100.00%

Notes:
[1] Source: California Energy Commission. 2019 Total System electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- California was the seventh-largest producer of crude oil among the 50 states in 2018, and, as of January 2019, it ranked third in oil refining capacity.
- California is the largest consumer of jet fuel among the 50 states and accounted for one-fifth of the nation's jet fuel consumption in 2018.
- California's total energy consumption is the second-highest in the nation, but, in 2018, the State's per capita energy consumption ranked the fourth-lowest, due in part to its mild climate and its energy efficiency programs.
- In 2018, California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass resources and fourth in the nation in conventional hydroelectric power generation.

- In 2018, large- and small-scale solar PV and solar thermal installations provided 19% of California's net electricity generation[5].

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nation's most efficient. Given the nature of the proposed project, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas for building uses, and transportation fuel for vehicle trips associated with the proposed project.

Electricity and Natural Gas

Electricity and natural gas would be provided to the project by San Diego Gas & Electric (SDG&E). SDG&E provides electrical and natural gas service to the project area through State-regulated utility contracts. SDG&E provides electric energy service to 3.6 million people located in most of San Diego County and the southern portion of Orange County, within a service area encompassing approximately 4,100 square miles.[6] The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. In 2020, SDG&E provided 17,445 Gigawatt-hours per year of electricity.[7]

Table 2 identifies SDG&E's specific proportional shares of electricity sources in 2019. As shown in Table 2, the 2019 SDG&E Power Mix has renewable energy at 31.3 percent of the overall energy resources, of which biomass and waste is at 2 percent, solar energy is at 17 percent, and wind power is at 13 percent; other energy sources include natural gas at 24 percent and unspecified sources at 44 percent.

Natural gas is delivered through a nation-wide network of high-pressure transmission pipelines. In 2020, SDG&E provided 505.2 Million Therms of natural gas.[8]

The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 11 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

California's natural gas utilities provide service to over 11 million gas meters. SoCalGas and PG&E provide service to about 5.9 million and 4.3 million customers, respectively, while SDG&E provides service to over 800, 000 customers. In 2018, California gas utilities forecasted that they would deliver

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5State Profile and Energy Estimates. Independent Statistics and Analysis. [Online] [Cited: January 16, 2020.] http://www.eia.gov/state/?sid=CA#tabs2.

[6] https://www.sdge.com/more-information/our-company

[7] Obtained from http://www.ecdms.energy.ca.gov/elecbyutil.aspx

[8] Obtained from http://www.ecdms.energy.ca.gov/gasbyutil.aspx

about 4740 million cubic feet per day (MMcfd) of gas to their customers, on average, under normal weather conditions.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."[9]

Table 2
SDG&E 2019 Power Content Mix

Energy Resources	2019 SDG&E Power Mix
Eligible Renewable[1]	31.3%
Biomass & Biowaste	2%
Geothermal	0%
Eligible Hydroelectric	0%
Solar	17%
Wind	13%
Coal	0%
Large Hydroelectric	0%
Natural Gas	24%
Nuclear	0%
Other	0%
Unspecified Sources of power[2]	44%
Total	100%

Notes:
Source: 'https://www.sdge.com/sites/default/files/documents/FINAL_S2010027_DecOnsert20.pdf
(1) The eligible renewable percentage above does not reflect RPS compliance, which is determined using a different methodology.
(2) Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

[9]California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/

Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially-provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available shows the transportation sector emits 40 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[10,11] About 28 percent of total United States energy consumption in 2019 was for transporting people and goods from one place to another. In 2019, petroleum comprised about 91 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[12] In 2020, about 123.49 billion gallons (or about 2.94 billion barrels) of finished motor gasoline were consumed in the United States, an average of about 337 million gallons (or about 8.03 million barrels) per day.[13]

2.0 Regulatory Background

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

Federal Regulations

Corporate Average Fuel Economy (CAFE) Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[14]

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284

[10] CARB. California Greenhouse Gas Emissions Inventory – 2020 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm
[11] CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA
[12] US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation
[13] https://www.eia.gov/tools/faqs/faq.php?id=23&t=10
[14] https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy.

grams of CO_2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012.[15]

Intermodal Surface transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

The Transportation Equity Act of the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State Regulations

Integrated Energy Policy Report (IEPR)

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The 2019 Integrated Energy Policy Report (2019 IEPR) was adopted February 20, 2020, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2019 IEPR focuses on a variety of topics such as decarbonizing buildings, integrating renewables, energy

[15] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule.

efficiency, energy equity, integrating renewable energy, updates on Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast.[16]

The 2020 IEPR was adopted March 23, 2021 and identifies actions the state and others can take to ensure a clean. Affordable, and reliable energy system. In 2020, the IEPR focuses on California's transportation future and the transition to zero-emission vehicles, examines microgrids, lessons learned form a decade of state-supported research, and stakeholder feedback on the potential of microgrids to contribute to a lean and resilient energy system; and reports on California's energy demand outlook, updated to reflect the global pandemic and help plan for a growth in zero-emission plug in electric vehicles.[17]

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

California Building Standards Code (Title 24)

California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020. The 2019 Title 24 standards include efficiency improvements to the lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less

[16] California Energy Commission. Final 2019 Integrated Energy Policy Report. February 20, 2020. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report

[17] California Energy Commission. Final 2020 Integrated Energy Policy Report. March 23, 2020. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2020-integrated-energy-policy-report-update

electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Building Energy Efficiency Standards (Title 24, Part 11)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2020. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

The Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2; added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking; amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles; updated section 5.303.3.3 in regard to showerhead flow rates; amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3; and updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings.

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which 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. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 350

Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Assembly Bill 32

In 2006 the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective.

Assembly Bill 1493/Pavley Regulations

California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-1-07/Low Carbon Fuel Standard

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

Executive Order N-79-20/Zero Emissions by 2035 Standard

Executive Order N-79-20 was issued in January 2021 and proposes a goal of the State that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. Furthermore, it proposes a goal of the State that 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks, as well as to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 where feasible.

California Air Resources Board

CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025. The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[18]

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

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

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles

[18] California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NO_X) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The newer emission controlled models would use petroleum-based fuel in a more efficient manner.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. As of 2018, the 2020 and 2035 targets were set at 15 percent and 19 percent, respectively. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

3.0 Evaluation Criteria and Methodology

Evaluation Criteria

<u>CEQA Energy Questions</u>

In compliance with Appendix G of the State CEQA Guidelines, this report analyzes the project's anticipated energy use to determine if the project would:

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

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

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Appendix F of the State CEQA guidelines also states that the environmental impacts from a project can include:

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

Methodology

Information from the CalEEMod 2022.1 Daily and Annual Outputs contained in the Shinohara Air Quality, Greenhouse Gas, and Health Risk Assessment Impact Study (air quality and greenhouse gas analysis) prepared for the proposed project by MD (December 5, 2022), was utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

4.0 Energy Review

Construction Energy Demand

The construction schedule is anticipated to begin no earlier than March 2023 and be completed by mid-spring 2024 and be completed in one phase.[19] Staging of construction vehicles and equipment will occur on-site.

Construction Equipment Electricity Usage Estimates

As stated previously, electrical service will be provided by SDG&E. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed project. Based on the 2017 National Construction Estimator, Richard Pray (2017)[20], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.32. The project plans to develop the site with 168,926 square foot

[19] The estimated construction timeline was generated based on CalEEMod default construction timelines for each phase of construction and a completion date of mid-spring 2024.
[20] Pray, Richard. 2017 National Construction Estimator. Carlsbad : Craftsman Book Company, 2017.

warehouse with 4,506 square feet of office space and 4,724 square feet of mezzanine space over the course of approximately 18 months. Based on Table 3, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $7,439.96. Furthermore, SDG&E's service rate for schedule is approximately $0.24 per kWh of electricity for the proposed industrial project.[21] As shown in Table 3, the total electricity usage from Project construction related activities is estimated to be approximately 31,392 kWh.

Table 3: Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)	Construction Duration (months)	Total Project Construction Power Cost
$2.32	178.160	18	$7,439.96

Cost per kWh	Total Project Construction Electricity Usage (kWh)
$0.24	31,392

*Assumes the project will be under Schedule TOU-A rate under SDG&E and, to be conservative, uses the lower anticipated cost per kWh. Source: https://www.sdge.com/sites/default/files/regulatory/3-1-21%20Small%20Commercial%20Total%20Rates%20Table.pdf

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of approximately 18 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 bhp-hr/gal (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input from the air quality, greenhouse gas, and health risk analysis (MD Acoustics 2022), the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 bhp-hr/gal. Table 4 shows the results of the analysis of construction equipment.

[21] Assumes the project will be under Schedule TOU-A rate under SDG&E and, to be conservative, uses the lower anticipated cost per kWh. Source: https://www.sdge.com/sites/default/files/regulatory/3-1-21%20Small%20Commercial%20Total%20Rates%20Table.pdf

Table 4: Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel)[1,2]
Grading	28	Graders	1	8	187	0.41	613	928
	28	Excavators	1	8	158	0.38	480	727
	28	Rubber Tired Dozers	1	8	247	0.4	790	1,196
	28	Earthmovers/Tractors/ Loaders/Backhoes	3	8	97	0.37	861	1,304
Building Construction	319	Cranes	1	7	231	0.29	469	8,086
	319	Forklifts	3	8	89	0.2	427	7,366
	319	Generator Sets	1	8	84	0.74	497	8,575
	319	Earthmovers/Tractors/ Loaders/Backhoes	3	7	97	0.37	754	12,996
	319	Welders	1	8	46	0.45	166	2,855
Paving	28	Pavers	2	8	130	0.42	874	1,322
	28	Paving Equipment	2	8	132	0.36	760	1,151
	28	Rollers	2	8	80	0.38	486	736
Architectural Coating	28	Air Compressors	1	6	78	0.48	225	340
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								**47,583**

Notes:
[1]Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp.
(Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)
[2]Totals may not add up precisely to rounding.

As presented in Table 4, project construction activities would consume an estimated 47,583 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

Construction Worker Fuel Estimates

It is assumed that all construction worker trips are from light duty autos (LDA) along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 301,454 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality, greenhouse gas, and health risk analysis (MD Acoustics 2022) using information generated using CARB's EMFAC model (see Appendix A for details). An aggregate fuel efficiency of 31.67 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 5 shows that an estimated 9,519 gallons of fuel would be consumed for construction worker trips.

Table 5: Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	28	15	12	5,040	31.67	159
Building Construction	319	74.8	12	286,334	31.67	9,041
Paving	28	15	12	5,040	31.67	159
Architectural Coating	28	15	12	5,040	31.67	159
Total Construction Worker Fuel Consumption						**9,519**

Notes:
[1]Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2022.1 defaults.

Construction Vendor/Hauling Fuel Estimates

Tables 6 and 7 show the estimated fuel consumption for vendor and hauling during building construction and architectural coating. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 88,264 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1 model defaults.

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material or hauling debris from the site during grading would use medium to heavy duty vehicles with an average fuel consumption of 8.4 mpg for medium heavy-duty trucks and 6.41 mpg for heavy heavy duty trucks (see Appendix A for details). Tables 6 and 7 show that an estimated 11,143 gallons of fuel would be consumed for vendor and hauling trips.

Table 6: Construction Vendor Fuel Consumption Estimates (MHD Trucks)[1]

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	28	0	7.63	0	8.40	0
Building Construction	319	29.2	7.63	71,072	8.40	8,461
Paving	28	0	7.63	0	8.40	0
Architectural Coating	28	0	7.63	0	8.40	0
Total Construction Vendor Fuel Consumption						**8,461**

Notes:
[1] Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2022.1 defaults.

Table 7: Construction Hauling Fuel Consumption Estimates (HHD Trucks)[1]

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Grading	28	22.3	20	12,488	6.41	1,948
Building Construction	319	0	20	0	6.41	0
Paving	28	8.4	20	4,704	6.41	734
Architectural Coating	28	0	20	0	6.41	0
Total Construction Hauling Fuel Consumption						**2,682**

Notes:

[1]Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2022.1 defaults.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately 18-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. Construction of the proposed industrial development would require the typical use of energy resources. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by City building officials, and/or in response to citizen complaints. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Operation Energy Demand

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

Transportation Fuel Consumption

The largest source of operational energy use would be vehicle operation of employees and truck trips. The site is located is in an urbanized area 517 Shinohara Lane just east of the 805 Freeway. Furthermore, there are existing transit services, provided by San Diego Metropolitan Transit System (SDMTS), approximately 0.2 mile walking distance of the proposed Project site. The nearest transit service is SDMTS Routes 703 and 704, with a stop along Auto Park Drive and Oleander Avenue.

Using the CalEEMod output from the air quality, greenhouse gas, and health risk analysis (MD Acoustics 2022), it is assumed that an average trip for autos and light trucks was assumed to be 9.5 miles, 3-axle trucks were assumed to travel an average of 7.3 miles, and 4-axle trucks were assumed to travel an average of 40 miles.[22] To be conservative, it was assumed that vehicles would operate 365 days per year. Table 8 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[23] The proposed project would generate approximately 4,881 trips per day. The vehicle fleet

[22] CalEEMod default distance for H-W (home-work) or C-W (commercial-work) is 9.5 miles; 7.3 miles for H-O (home-other) or C-O (commercial-other). 40 miles is a conservative estimate for the 132 4-axle truck trips estimated for the project.
[23] Average fuel economy based on aggregate mileage calculated in EMFAC 2017 for opening year (2024). See Appendix A for EMFAC output.

mix was used from the CalEEMod output from the air quality, greenhouse gas, and health risk analysis (MD Acoustics 2022). Table 8 shows that an estimated 912,487 gallons of fuel would be consumed per year for the operation of the proposed project.

Table 8: Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)	Total Gallons per Day	Total Annual Fuel Consumption (gallons)[2]
Light Auto	Automobile	2,746	9.5	26,088	32.12	812.21	296,458
Light Truck	Automobile	312	9.5	2,960	26.41	112.06	40,902
Light Truck	Automobile	898	9.5	8,533	26.62	320.55	117,001
Medium Truck	Automobile	599	9.5	5,691	20.43	278.54	101,667
Light Heavy Truck	2-Axle Truck	121	9.5	1,151	11.46	100.43	36,657
Light Heavy Truck 10,000 lbs +	2-Axle Truck	31	9.5	293	11.86	24.69	9,014
Medium Heavy Truck	3-Axle Truck	42	7.3	308	8.39	36.66	13,382
Heavy Heavy Truck	4-Axle Truck	132	40.0	5,280	6.48	814.81	297,407
Total		4,881	--	50,303	--	2,499.96	--
Total Annual Fuel Consumption							**912,487**

Notes:
[1]Based on the size of the site and relative location, heavy heavy truck trips were assumed to regional and all other trips were assumed to be local.
[2]Totals may not add up precisely to rounding.

Trip generation and VMT generated by the proposed project are consistent with other similar industrial uses of similar scale and configuration as reflected respectively in the (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April, 2002). That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Furthermore, the state of California consumed approximately 4.2 billion gallons of diesel and 15.1 billion gallons of gasoline in 2015.[24,25] Therefore, the increase in fuel consumption from the proposed project is insignificant in comparison to the State's demand. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity and natural gas (provided by SDG&E). Operation of the proposed project would involve the use of energy for heating, cooling and equipment operation. These facilities would comply with all applicable California Energy Efficiency Standards and 2019 CALGreen Standards.

The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analysis (MD Acoustics 2022) and are provided in Table 9.

<Table 9, next page>

[24] https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics
[25] https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics

Table 9: Project Annual Operational Energy Demand Summary[1]

Natural Gas Demand	kBTU/year
Unrefrigerated Warehouse - No Rail	2,613,095
Total	2,613,095

Electricity Demand	kWh/year
Unrefrigerated Warehouse - No Rail	776,770
Parking Lot	149,963
Total	926,733

Notes:
[1]Taken from the CalEEMod 2022.1 annual output in the Shinohara Industrial Project Air Quality, Greenhouse Gas, and Health Risk Assessment Impact Study prepared for the proposed project by MD Acoustics (December 5, 2022).

As shown in Table 9, the estimated electricity demand for the proposed project is approximately 926,733 kWh per year. In 2020, the non-residential sector of the County of San Diego consumed approximately 11,658 million kWh of electricity.[26] In addition, the estimated natural gas consumption for the proposed project is approximately 2,613,095 kBTU per year. In 2020, the non-residential sector of the County of San Diego consumed approximately 202 million therms of gas.[27] Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2020 non-residential sector demand.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.).

Furthermore, the proposed project energy demands in total would be comparable to other industrial projects of similar scale and configuration. Therefore, the project facilities' energy demands and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Renewable Energy and Energy Efficiency Plan Consistency

Plan Consistency

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SANDAG is not planning for intermodal facilities in the project area.

[26] California Energy Commission, Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx
[27] California Energy Commission, Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by SDG&E.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CalGreen Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, use LED lighting, and install low pollutant-emitting finish materials.

As shown in the air quality, greenhouse gas, and health risk analysis (MD Acoustics 2022), the proposed project is also consistent with the reduction strategies of the City of Chula Vista Climate Action Plan (CAP).

Site Conditions for Renewable Energy Usage

On-site renewable energy sources have been considered. Geothermal energy, the use of heat naturally present in shallow soil or in groundwater or rock to provide building heating/cooling and to heat water, requires the installation of a heat exchanger consisting of a network of below-ground pipes to convey heated or cooled air to a building. The presence of natural-occurring methane and hydrogen sulfide gases, in the soil beneath the project site and in the project area, associated with underlying and nearby oil and gas fields, requires the implementation of a Gas Mitigation and Monitoring System to ensure subsurface gases do not pose a significant health or safety risk, and makes the construction and operation of a heat exchanger for project buildings infeasible. Installation of a heat exchanger would also require additional excavation compared to the project, which could increase impacts on paleontological resources.

Although methane is a renewable derived biogas, it is not available on the project site in commercially viable quantities or form (i.e., a form that could be used without further treatment), and its extraction and treatment for energy purposes would result in secondary impacts.

Wind power represents variable-energy, or intermittent, resources that are generally used to augment, but not replace, natural gas-fired energy power generation, since reliability of energy availability and transmission is necessary to meet demand, which is constant. City of Chula Vista Code requires that Electrical Generating Facilities (including wind renewables) be located 1,000-feet away from residential communities. The subject property is 812-feet by 515-feet with residential communities located 30 feet to the west and 40 feet to the north. Therefore, as the 1,000-foot separation requirements could not be met at the project site, wind power could not be used to augment energy at this location.

With respect to other on-site renewable energy sources, because of the Project's location, there are no local sources of energy from the following sources: biodiesel, biomass hydroelectric and small hydro, digester gas, fuel cells, landfill gas, municipal solid waste, ocean thermal, ocean wave, and tidal current technologies, or multi-fuel facilities using renewable fuels.

Future Renewable Energy Usage

The project will include pre-installed conduit and an engineered roof for future solar energy panels. At this time, the tenants are unknown, so the feasibility of installing rooftop solar at the time of the completion of warehouse construction and beginning of operation (anticipated build-out year is 2024) will depend on the tenant's needs. Factors evaluated will include the cost of the solar system, tax incentives, rebates, or incentives from the electricity provider, how much power the system will produce, and the utility cost of electricity.

Additionally, while natural gas lines would be connected to the project, future tenants may decide to not use natural gas and only power the project with electricity. As shown in Table 2, 31.3% of the power provided by SDG&E was from renewable sources in 2019, which would further renewable energy usage for the project.

5.0 Conclusions

As supported by the preceding analyses, neither construction nor operation of the Project would result in wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources. The proposed project does not include any unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities and is a industrial project that is not proposing any additional features that would require a larger energy demand than other industrial projects of similar scale and configuration. As the proposed project is consistent with the existing General Plan land use designation, the energy demands of the project are anticipated to be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California.

The Project has been designed in compliance with California's Energy Efficiency Standards and 2019 CALGreen Standards. These measures include but are not limited to the use of water conserving plumbing, installation of bicycle racks, the use of LED lighting, and water-efficient irrigation systems. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts would be less than significant.

MD is pleased to provide this CEQA Energy review. If you have any questions regarding this analysis, please don't hesitate to call us at (805) 426-4477.

Sincerely,
MD Acoustics, LLC

Mike Dickerson, INCE	Tyler Klassen, EIT
Principal	Air Quality Specialist

Appendix A

CARB EMFAC 2017

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Air Basin
Region: SAN DIEGO
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	Calendar Year	Vehicle Cat	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Co	VMT	Total VMT	Miles Per Gallon	Vehicle Class
SAN DIEGC	2021	HHDT	Aggregated	Aggregated	GAS	19.70603036	2048.746	394.2783	0.514647577	514.6475765	297390.547	2078.265	1905787.878	**6.41**	**HHD**
SAN DIEGC	2021	HHDT	Aggregated	Aggregated	DSL	15527.23298	1869653	161276.6	296.8758994	296875.8994		1903710			
SAN DIEGC	2021	LDA	Aggregated	Aggregated	GAS	1405370.343	54325094	6637549	1782.112456	1782112.456		55007781			
SAN DIEGC	2021	LDA	Aggregated	Aggregated	DSL	16466.05209	635343.6	77175.68	13.95697077	13956.97077		652152.3			
SAN DIEGC	2021	LDA	Aggregated	Aggregated	ELEC	25194.84986	1016385	125403.5	0	0	1796069.43	1220434	56880366.49	**31.67**	**LDA**
SAN DIEGC	2021	LDT1	Aggregated	Aggregated	GAS	167731.3377	5908846	762175.3	230.7895865	230789.5865		5914591			
SAN DIEGC	2021	LDT1	Aggregated	Aggregated	DSL	122.7468928	2248.505	407.2422	0.099824064	99.82406388		2054.346			
SAN DIEGC	2021	LDT1	Aggregated	Aggregated	ELEC	676.8949854	28400.04	3404.662	0	0	230889.411	42156.16	5958801.321	**25.81**	**LDT1**
SAN DIEGC	2021	LDT2	Aggregated	Aggregated	GAS	489176.1351	17914884	2273551	759.478815	759478.815		17717581			
SAN DIEGC	2021	LDT2	Aggregated	Aggregated	DSL	2855.049194	121070.4	14006.3	3.609698443	3609.698443		128254			
SAN DIEGC	2021	LDT2	Aggregated	Aggregated	ELEC	3108.075293	106352.4	15774.04	0	0	763088.513	138746.6	17984581.23	**23.57**	**LDT2**
SAN DIEGC	2021	LHDT1	Aggregated	Aggregated	GAS	35522.22756	1284364	529228.3	153.6544177	153654.4177		1262247			
SAN DIEGC	2021	LHDT1	Aggregated	Aggregated	DSL	31258.46651	1191286	393192.2	65.94164702	65941.64702	219596.065	1204731	2466977.706	**11.23**	**LHDT1**
SAN DIEGC	2021	LHDT2	Aggregated	Aggregated	GAS	5376.908451	196023.5	80107.92	26.81591226	26815.91226		196430.8			
SAN DIEGC	2021	LHDT2	Aggregated	Aggregated	DSL	10806.97417	422173.4	135938.1	26.17077313	26170.77313	52986.6854	432523.1	628953.9213	**11.87**	**LHDT2**
SAN DIEGC	2021	MCY	Aggregated	Aggregated	GAS	78939.42299	649887	157878.8	17.82144116	17821.44116	17821.4412	640833.4	640833.4249	**35.96**	**MCY**
SAN DIEGC	2021	MDV	Aggregated	Aggregated	GAS	322691.006	11660085	1484647	596.5493477	596549.3477		11505919			
SAN DIEGC	2021	MDV	Aggregated	Aggregated	DSL	7110.670233	304547.5	34609.71	11.93276205	11932.76205		316244.9			
SAN DIEGC	2021	MDV	Aggregated	Aggregated	ELEC	1374.088603	48649.72	7049.471	0	0	608482.11	74612.01	11896775.96	**19.55**	**MDV**
SAN DIEGC	2021	MH	Aggregated	Aggregated	GAS	11196.99217	96423.8	1120.147	20.50270048	20502.70048		92397.51			
SAN DIEGC	2021	MH	Aggregated	Aggregated	DSL	3813.859036	34995.56	381.3859	3.622947918	3622.947918	24125.6484	34608.84	127006.3488	**5.26**	**MH**
SAN DIEGC	2021	MHDT	Aggregated	Aggregated	GAS	3549.627505	201226.3	71020.95	42.14582571	42145.82571		207021.6			
SAN DIEGC	2021	MHDT	Aggregated	Aggregated	DSL	19530.20201	1159964	185173.5	124.7570406	124757.0406	166902.866	1194912	1401933.216	**8.40**	**MHDT**
SAN DIEGC	2021	OBUS	Aggregated	Aggregated	GAS	1261.139691	65401.69	25232.88	13.94697763	13946.97763		63800.57			
SAN DIEGC	2021	OBUS	Aggregated	Aggregated	DSL	738.7079994	54068.48	7369.564	7.306031279	7306.031279	21253.0089	54661.75	118462.3219	**5.57**	**OBUS**
SAN DIEGC	2021	SBUS	Aggregated	Aggregated	GAS	238.1041987	12615.2	952.4168	1.338477965	1338.477965		13954.7			
SAN DIEGC	2021	SBUS	Aggregated	Aggregated	DSL	2410.018913	75385.44	27811.28	9.530418287	9530.418287	10868.8963	75270.84	89225.54525	**8.21**	**SBUS**
SAN DIEGC	2021	UBUS	Aggregated	Aggregated	GAS	386.0189728	40557.51	1544.076	7.329040218	7329.040218		42016.61			
SAN DIEGC	2021	UBUS	Aggregated	Aggregated	DSL	25	2628.079	100	0.555482686	555.482686	7884.5229	0	42016.61226	**5.33**	**UBUS**

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: Air District
Region: SAN DIEGO COUNTY APCD
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	VMT	Total VMT	Miles Per Gallon	Vehicle Class
SAN DIEGC	2022	HHDT	Aggregated	Aggregated	GAS	18.77674363	375.6850865	0.510290016	510.2900165	294279.3224	2078.264597	1905787.878	**6.48**	**HHD**
SAN DIEGC	2022	HHDT	Aggregated	Aggregated	DSL	15794.34681	164553.9614	293.7690323	293769.0323		1903709.613			
SAN DIEGC	2022	LDA	Aggregated	Aggregated	GAS	1435699.418	6783861.728	1756.768474	1756768.474		55007780.65			
SAN DIEGC	2022	LDA	Aggregated	Aggregated	DSL	17133.82279	80255.84288	13.98689813	13986.89813		652152.3233			
SAN DIEGC	2022	LDA	Aggregated	Aggregated	ELEC	29615.71622	147126.8242	0	0	1770755.372	1220433.518	56880366.49	**32.12**	**LDA**
SAN DIEGC	2022	LDT1	Aggregated	Aggregated	GAS	169175.431	769447.3084	225.5647168	225564.7168		5914590.816			
SAN DIEGC	2022	LDT1	Aggregated	Aggregated	DSL	113.2397115	373.3953636	0.09031383	90.31383008		2054.345981			
SAN DIEGC	2022	LDT1	Aggregated	Aggregated	ELEC	971.2611106	4899.002475	0	0	225655.0307	42156.15901	5958801.321	**26.41**	**LDT1**
SAN DIEGC	2022	LDT2	Aggregated	Aggregated	GAS	488321.8489	2269428.213	726.6298291	726629.8291		17717580.65			
SAN DIEGC	2022	LDT2	Aggregated	Aggregated	DSL	3092.947351	15116.12168	3.722637831	3722.637831		128253.9843			
SAN DIEGC	2022	LDT2	Aggregated	Aggregated	ELEC	4120.808458	20868.27325	0	0	730352.467	138746.596	17984581.23	**24.62**	**LDT2**
SAN DIEGC	2022	LHDT1	Aggregated	Aggregated	GAS	35010.024	521597.1927	149.4572747	149457.2747		1262246.991			
SAN DIEGC	2022	LHDT1	Aggregated	Aggregated	DSL	31841.31105	400523.6367	65.79515455	65795.15455	215252.4293	1204730.715	2466977.706	**11.46**	**LHDT1**
SAN DIEGC	2022	LHDT2	Aggregated	Aggregated	GAS	5418.126472	80722.01142	26.59574267	26595.74267		196430.7729			
SAN DIEGC	2022	LHDT2	Aggregated	Aggregated	DSL	11200.50375	140888.2469	26.45016182	26450.16182	53045.90448	432523.1484	628953.9213	**11.86**	**LHDT2**
SAN DIEGC	2022	MCY	Aggregated	Aggregated	GAS	79518.52429	159037.0486	17.58110647	17581.10647	17581.10647	640833.4249	640833.4249	**36.45**	**MCY**
SAN DIEGC	2022	MDV	Aggregated	Aggregated	GAS	321247.3365	1477989.237	570.2023147	570202.3147		11505919.06			
SAN DIEGC	2022	MDV	Aggregated	Aggregated	DSL	7551.73175	36627.42275	12.05507792	12055.07792		316244.8871			
SAN DIEGC	2022	MDV	Aggregated	Aggregated	ELEC	2146.208886	10981.04226	0	0	582257.3926	74612.01209	11896775.96	**20.43**	**MDV**
SAN DIEGC	2022	MH	Aggregated	Aggregated	GAS	10724.34317	1072.863291	19.4317695	19431.7695		92397.506			
SAN DIEGC	2022	MH	Aggregated	Aggregated	DSL	3838.325727	383.8325727	3.551800241	3551.800241	22983.56974	34608.84284	127006.3488	**5.53**	**MH**
SAN DIEGC	2022	MHDT	Aggregated	Aggregated	GAS	3610.281121	72234.50467	42.66175414	42661.75414		207021.6124			
SAN DIEGC	2022	MHDT	Aggregated	Aggregated	DSL	19669.05689	186583.7136	124.4046627	124404.6627	167066.4169	1194911.604	1401933.216	**8.39**	**MHDT**
SAN DIEGC	2022	OBUS	Aggregated	Aggregated	GAS	1252.458708	25059.19382	13.42401562	13424.01562		63800.57212			
SAN DIEGC	2022	OBUS	Aggregated	Aggregated	DSL	726.8076341	7248.336044	7.199165246	7199.165246	20623.18087	54661.74976	118462.3219	**5.74**	**OBUS**
SAN DIEGC	2022	SBUS	Aggregated	Aggregated	GAS	265.865016	1063.460064	1.458273949	1458.273949		13954.70263			
SAN DIEGC	2022	SBUS	Aggregated	Aggregated	DSL	2407.453653	27781.68138	9.452901387	9452.901387	10911.17534	75270.84262	89225.54525	**8.18**	**SBUS**
SAN DIEGC	2022	UBUS	Aggregated	Aggregated	GAS	399.9064004	1599.625602	7.531505658	7531.505658		42016.61226			
SAN DIEGC	2022	UBUS	Aggregated	Aggregated	DSL	0	0	0	0	7531.505658	0	42016.61226	**5.58**	**UBUS**