3.6 - Greenhouse Gas Emissions and Energy

3.6.1 - Introduction

This section describes the existing greenhouse gas (GHG) emissions and energy setting and potential effects from project implementation on the project site and its surrounding area. Descriptions and analysis in this section are based on information provided in Section 3.2, Air Quality. The GHG analysis is based, in part, on information, calculations, and modeling results in the Suisun Logistics Center Greenhouse Gas Emissions Technical Report prepared by Ramboll America Engineering Solutions, Inc. (GHG Report), included in this Draft Environmental Impact Report (Draft EIR) as Appendix B2. The energy analysis is based on information, calculations, and modeling results in the Suisun Logistics Center Energy Technical Report prepared by Ramboll America Engineering Solutions, Inc. (Energy Report), included in this Draft EIR as Appendix B3.

3.6.2 - Environmental Setting

Greenhouse Effect, Global Warming, and Climate Change

Most of the energy that affects Earth's climate comes from the sun. Some solar radiation is absorbed by Earth's surface, and a smaller portion of this radiation is reflected by the atmosphere back toward space. As Earth absorbs high-frequency solar radiation, its surface gains heat and then re-radiates lower frequency infrared radiation back into the atmosphere.[1]

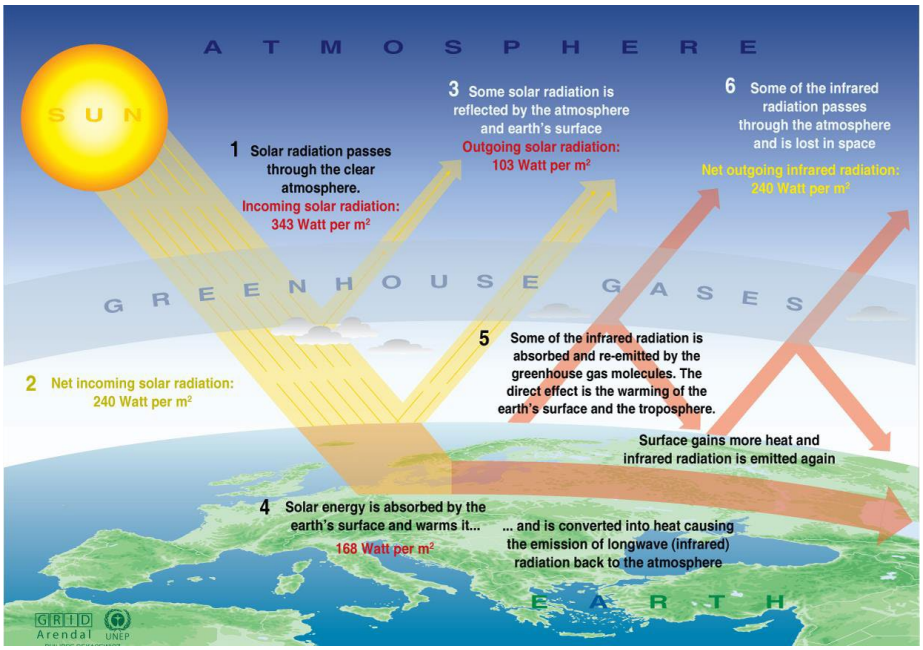
Most solar radiation passes through gases in the atmosphere classified as GHGs; however, infrared radiation is selectively absorbed by GHGs. GHGs in the atmosphere play a critical role in maintaining the balance between Earth's absorbed and radiated energy—Earth's radiation budget[2]—by trapping some of the infrared radiation emitted from Earth's surface that otherwise would have escaped to space (Figure 3.6-1). Radiative forcing is the difference between incoming energy and outgoing energy.[3] Specifically, GHGs affect the radiative forcing of the atmosphere,[4] which in turn affects Earth's average surface temperature. This phenomenon, the *greenhouse effect*, keeps Earth's atmosphere near the surface warmer than it would be otherwise and allows successful habitation by humans and other forms of life.

Combustion of fossil fuels and deforestation release carbon into the atmosphere that historically has been stored underground in sediments or in surface vegetation, thus exchanging carbon from the geosphere and biosphere to the atmosphere in the carbon cycle. With the accelerated increase in fossil fuel combustion and deforestation since the Industrial Revolution of the nineteenth century, concentrations of GHGs in the atmosphere have increased exponentially. Such emissions of GHGs in excess of natural ambient concentrations contribute to the enhancement of the natural greenhouse effect. This enhanced greenhouse effect has contributed to *global warming*, an increased rate of

[1] Frequencies at which bodies emit radiation are proportional to temperature. Earth has a much lower temperature than the sun and emits radiation at a lower frequency (longer wavelength) than the high-frequency (short-wavelength) solar radiation emitted by the sun.
[2] This includes all gains of incoming energy and all losses of outgoing energy; the planet is always striving to be in equilibrium.
[3] Positive forcing tends to warm the surface while negative forcing tends to cool it.
[4] This is the change in net irradiance at the tropopause after allowing stratospheric temperatures to readjust to radiative equilibrium, but with surface and tropospheric temperatures and state held fixed at the unperturbed values.

warming of Earth's average surface temperature.[5] Specifically, increases in GHGs lead to increased absorption of infrared radiation by Earth's atmosphere and warm the lower atmosphere further, thereby increasing temperatures and evaporation rates near the surface.

Variations in natural phenomena such as volcanoes and solar activity produced most of the global temperature increase that occurred during preindustrial times; more recently, however, increasing atmospheric GHG concentrations resulting from human activity have been responsible for most of the observed global temperature increase.[6]



Source: Philippe Rekacewicz, UNEP/GRID-Arendal. Website: https://www.grida.no/resources/6467. Accessed February 9, 2024.

Figure 3.6-1: The Greenhouse Effect

Global warming affects global atmospheric circulation and temperatures; oceanic circulation and temperatures; wind and weather patterns; average sea level; ocean acidification; chemical reaction rates; precipitation rates, timing, and form; snowmelt timing and runoff flow; water supply; wildfire risks; and other phenomena, in a manner commonly referred to as *climate change*. Climate change is a change in the average weather of Earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

[5] This condition results when Earth has to work harder to maintain its radiation budget, because when more GHGs are present in the atmosphere, Earth must force emissions of additional infrared radiation out into the atmosphere.

[6] These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion.

Temperature Predictions by the Intergovernmental Panel on Climate Change

The United Nations Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme (UNEP) to assess scientific, technical, and socioeconomic information relevant to understanding climate change, its potential impacts, and options for adaptation and mitigation. The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Sixth Assessment Report, the IPCC predicted that the global mean temperature change from 2015 to 2100, given five scenarios, could range from 1.4°C (degrees Celsius) to 4.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios.[7] The report also concluded that "[i]t is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred." Warming of the climate system is now considered to be indisputable,[8] with the likely range of total human-caused global surface temperature increases from approximately 0.8°C to 1.3°C since 1850.[9]

Greenhouse Gases and Global Emission Sources

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Prominent GHGs that naturally occur in Earth's atmosphere are water vapor, carbon dioxide (CO_2), methane (CH_4), oxides of nitrogen (NO_X), and ozone. Anthropogenic (human-caused) GHG emissions include releases of these GHGs plus release of human-made gases with high global warming potential (GWP)—ozone-depleting substances such as chlorofluorocarbons (CFCs)[10] and aerosols, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The GHGs listed by the IPCC (CO_2, CH_4, nitrous oxide [N_2O], HFCs, PFCs, and SF_6) are discussed below, in order of abundance in the atmosphere. Water vapor, despite being the most abundant GHG, is not discussed below because natural concentrations and fluctuations far outweigh anthropogenic influences, making it impossible to predict. Ozone is not included because it does not directly affect radiative forcing. Ozone-depleting substances, which include chlorofluorocarbons, halons, carbon tetrachloride, methyl chloroform, and hydrochlorofluorocarbons, are not included because they have been primarily replaced by HFCs and PFCs.

The GWP is the potential of a gas or aerosol to trap heat in the atmosphere. The GWP of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, CO_2.

Individual GHG compounds have varying potential for contributing to global warming. For example, methane is 25 times as potent as CO_2, while SF_6 is 22,200 times more potent than CO_2 on a molecule-per-molecule basis. To simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method for comparing GHG emissions is the GWP methodology defined in the IPCC reference documents. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of

[7] United Nations Intergovernmental Panel on Climate Change (IPCC). 2021. Climate Change 2021: The Physical Science Basis Summary for Policymakers.
[8] Ibid.
[9] Ibid.
[10] CFCs destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited CFCs production in 1987.

carbon dioxide equivalents (CO_2e), which compares the gas in question to that of the same mass of CO_2 (by definition, CO_2 has a GWP of 1). The GWP of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. Thus, to describe how much global warming a given type and amount of GHG may cause, the CO_2e is used. A CO_2e is the mass emissions of an individual GHG multiplied by its GWP. As such, a high GWP represents high absorption of infrared radiation and a long atmospheric lifetime compared to CO_2. One must also select a time horizon to convert GHG emissions to equivalent CO_2 emissions to account for chemical reactivity and lifetime differences among various GHG species. The standard time horizon for climate change analysis is 100 years. Generally, GHG emissions are quantified in terms of metric tons (MT) of CO_2e (MT CO_2e) emitted per year.

The atmospheric residence time of a gas is equal to the total atmospheric abundance of the gas divided by its rate of removal.[11] The atmospheric residence time of a gas is, in effect, a half-life measurement of the length of time a gas is expected to persist in the atmosphere when accounting for removal mechanisms such as chemical transformation and deposition.

Table 3.6-1 lists the GWP of each GHG and its lifetime. Units commonly used to describe the concentration of GHGs in the atmosphere are parts per million (ppm), parts per billion (ppb), and parts per trillion (ppt), referring to the number of molecules of the GHG in a sampling of 1 million, 1 billion, or 1 trillion molecules of air. Collectively, HFCs, PFCs, and SF_6 are referred to as high GWP gases. CO_2 is by far the largest component of worldwide CO_2e emissions, followed by CH_4, N_2O, and high GWP gases, in order of decreasing contribution to CO_2e.

The primary human processes that release GHGs include the burning of fossil fuels for transportation, heating, and electricity generation; agricultural practices that release CH_4, such as livestock grazing and crop residue decomposition; and industrial processes that release smaller amounts of high GWP gases. Deforestation and land cover conversion have also been identified as contributing to global warming by reducing Earth's capacity to remove CO_2 from the air and altering Earth's albedo or surface reflectance, thus allowing more solar radiation to be absorbed. Specifically, CO_2 emissions associated with fossil fuel combustion are the primary contributors to human-induced climate change. CO_2, CH_4, and N_2O emissions associated with human activities are the next largest contributors to climate change.

GHGs of California concern are defined by California Assembly Bill (AB) 32 (see the Regulatory Environment subsection below for a description) and include CO_2, CH_4, NO_x, HFCs, PFCs, and SF_6. A seventh GHG, nitrogen trifluoride (NF_3), was also added under the California Health and Safety Code Section 38505(g)(7) as a GHG of concern. These GHGs are described in terms of their physical description and properties, GWP, atmospheric residence lifetime, sources, and atmospheric concentration in 2005 in Table 3.6-1.

[11] Seinfeld, J.H., and S.N. Pandis. 2006. Atmospheric Chemistry and Physics: From Air Pollution to Climate Change, 2nd ed. New York: John Wiley & Sons.

Table 3.6-1: Description of Greenhouse Gases of California Concern

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
Carbon dioxide (CO_2)	Odorless, colorless, natural gas.	1	50–200	burning coal, oil, natural gas, and wood; decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; oceanic evaporation; volcanic outgassing; cement production; land use changes
Methane (CH_4)	Flammable gas and is the main component of natural gas.	25	12	geological deposits (natural gas fields) extraction; landfills; fermentation of manure; and decay of organic matter
Nitrous oxide (N_2O)	Nitrous oxide (laughing gas) is a colorless GHG.	298	114	microbial processes in soil and water; fuel combustion; industrial processes
Chloro-fluoro-carbons (CFCs)	Nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (level of air at Earth's surface); formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms.	3,800–8,100	45–640	refrigerants aerosol propellants; cleaning solvents
Hydro-fluoro-carbons (HFCs)	Synthetic human-made chemicals used as a substitute for CFCs and contain carbon, chlorine, and at least one hydrogen atom.	140–11,700	1–50,000	automobile air conditioners; refrigerants
Per-fluoro-carbons (PFCs)	Stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface.	6,500–9,200	10,000–50,000	primary aluminum production; semiconductor manufacturing
Sulfur hexafluoride (SF_6)	Human-made, inorganic, odorless, colorless, and nontoxic, nonflammable gas.	22,800	3,200	electrical power transmission equipment insulation; magnesium industry,

Greenhouse Gas	Physical Description and Properties	Global Warming Potential (100 years)	Atmospheric Residence Lifetime (years)	Sources
				semiconductor manufacturing; a tracer gas
Nitrogen trifluoride (NF_3)	Inorganic, is used as a replacement for PFCs, and is a powerful oxidizing agent.	17,200	740	electronics manufacture for semiconductors and liquid crystal displays

Sources:
Intergovernmental Panel on Climate Change (IPCC). Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller [eds.]). Cambridge, UK: Cambridge University Press

Intergovernmental Panel on Climate Change (IPCC). 2014. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Core Writing Team, Pachauri, R.K. and Reisinger, A. [eds.]). Geneva, Switzerland. IPCC.

The State has begun the process of addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the Governor on September 14, 2014, required the California Air Resources Board (ARB) to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. The ARB released the Proposed Short-Lived Climate Pollutant Reduction Strategy in April 2016. The ARB has completed an emission inventory of these pollutants, identified research needs, identified existing and potential new control measures that offer co-benefits, and coordinated with other State agencies and districts to develop measures.

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 3.6-1 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, the ARB will include it in its comprehensive strategy.[12]

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

[12] California Air Resources Board (ARB). 2015. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May.

GWPs for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a GWP of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by the ARB and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources.[13] Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions, volatile organic compounds (VOC) and oxides of nitrogen (NO_X) on a regional scale and CH_4 on a hemispheric scale, will be subject of the strategy.[14]

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other GHGs, such that the warming brought about by increased carbon dioxide allows more water vapor to enter the atmosphere.[15]

Global Climate Change Issue

Climate change is a global problem because GHGs are global pollutants, unlike criteria air pollutants and hazardous air pollutants (also called toxic air contaminants), which are pollutants of regional and local concern. Pollutants with localized air quality effects have relatively short atmospheric lifetimes, approximately 1 day; by contrast, GHGs have long atmospheric lifetimes, several years to several thousand years. GHGs persist in the atmosphere for a long enough time to be dispersed around the globe.

Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, more CO_2 is currently emitted into the atmosphere than is sequestered. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through photosynthesis and dissolution, respectively. These are two of the most common processes of CO_2 sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, Northern Hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO_2 emissions is stored in the atmosphere.[16]

Similarly, effects of GHGs are borne globally, as opposed to the localized air quality effects of criteria air pollutants and hazardous air pollutants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known and cannot be quantified, and no single project would be

[13] California Air Resources Board (ARB). 2015. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May.
[14] Ibid.
[15] National Aeronautics and Space Administration (NASA). 2015. NASA—Global Climate Change, Vital Signs of a Planet. Website: http://climate.nasa.gov/causes/. Accessed February 9, 2024.
[16] Seinfeld, J. H. and S.N. Pandis. 1998. Atmospheric Chemistry and Physics from Air Pollution to Climate Change. New York: John Wiley & Sons.

expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global or local climates or microclimate.

Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. A cumulative discussion and analysis of project impacts on global climate change is presented in this Draft EIR because, although it is unlikely that a single project will contribute significantly to climate change, cumulative emissions from many projects affect global GHG concentrations and the climate system.

Global climate change has the potential to result in sea level rise (resulting in flooding of low-lying areas), to affect rainfall and snowfall (leading to changes in water supply), to affect temperatures and habitats (affecting biological resources and public health), and to result in many other adverse environmental consequences.

Although the international, national, State, and regional communities are beginning to address GHGs and the potential effects of climate change, worldwide GHG emissions will likely continue to rise over the next decades.

Climate and Topography

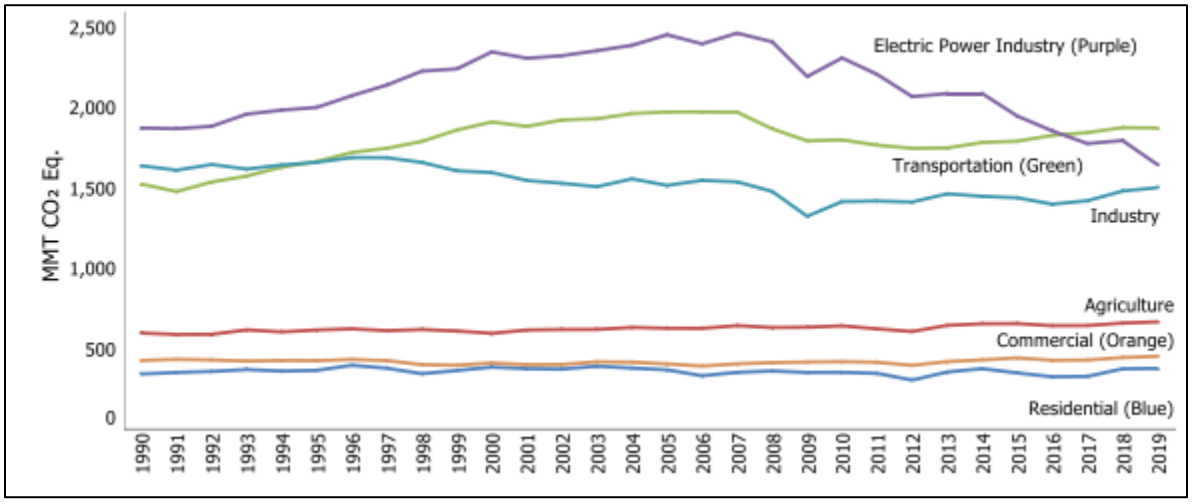
Climate is the accumulation of daily and seasonal weather events over a long period of time, whereas weather is defined as the condition of the atmosphere at any particular time and place. For a detailed discussion of existing regional and project site climate and topography, see Section 3.2, Air Quality.

Existing GHG Emissions

United States GHG Inventory

Total U.S. GHG emissions have increased by 1.8 percent from 1990 to 2019.[17] Figure 3.6-2 presents the trend in United States. GHG emissions by economic sector from 1990 to 2019. Total U.S. GHG emissions increased by 2.8 percent from 1990 to 2019 (an increase of 142.4 million metric tons [MMT] CO_2e). Since 1990, U.S. emissions have increased at an average annual rate of 0.3 percent. Transportation emissions also increased because of an increase in Vehicle Miles Traveled (VMT). Within the United States, fossil fuel combustion accounted for 92.4 percent of CO_2 emissions in 2019. Transportation was the largest emitter of CO_2 in 2019, accounting for 28.6 percent of emissions, followed by electric power generation, accounting for 25.1 percent.

[17] United States Environmental Protection Agency (EPA). 2021. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2019 – Executive Summary.



Note: Emissions shown do not include carbon sinks such as change in land uses and forestry.

Source: United States Environmental Protection Agency (EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2019. Website: https://www.epa.gov/sites/default/files/2021-04/documents/us-ghg-inventory-2021-main-text.pdf?VersionId=wEy8wQuGrWS8Ef_hSLXHy1kYwKs4.ZaU. Accessed February 9, 2024.

Figure 3.6-2: U.S. Greenhouse Gas Emissions Allocated to Economic Sectors (1990-2019)

California GHG Inventory

As the second largest emitter of GHG emissions in the U.S., California contributes a large quantity (418.2 MMT CO_2e in 2019) of GHG emissions to the atmosphere.[18,19] Human-related emissions of CO_2 are largely byproducts of fossil fuel combustion and are attributable to transportation, industry/manufacturing, electricity generation, natural gas consumption, and agriculture processes. In California, the transportation sector is the largest emitter at 41 percent of GHG emissions, followed by industrial at 24 percent of GHG emissions.[20]

Bay Area Air Quality Management District GHG Inventory

The Bay Area Air Quality Management District (BAAQMD) prepared a GHG inventory for the San Francisco Bay Area (Bay Area), which provides an estimate of GHG emissions in the base year 2011 for all counties located in the jurisdiction of BAAQMD: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Napa, and the southern portions of Solano and Sonoma.[21] This GHG inventory is based on the standards for criteria pollutant inventories and is intended to support BAAQMD's climate protection activities.

Table 3.6-2 shows the 2011 breakdown of emissions by end-use sector for each county within BAAQMD's jurisdiction. The estimated GHG emissions are presented in CO_2e, which weights each GHG by its GWP. The GWPs used in BAAQMD's inventory are from the Second Assessment Report of the IPCC.

[18] World Resources Institute (WRI). 2017. 8 Charts to Understand US State Greenhouse Gas Emissions. Website: https://www.wri.org/insights/8-charts-understand-us-state-greenhouse-gas-emissions. Accessed February 9, 2024.
[19] California Air Resources Board (ARB). 2021. Current California GHG Emission Inventory Data, 2000-2019 Trends Figure Data. Website: https://ww2.arb.ca.gov/ghg-inventory-data. Accessed February 9, 2024.
[20] California Air Resources Board (ARB). 2018. California Greenhouse Inventory—Graphs. Website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf. Accessed February 9, 2024.
[21] Bay Area Air Quality Management District. (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases–Base Year 2011.

In 2011, GHG emissions from Solano County accounted for approximately 5.9 percent of the Bay Area's total GHG emissions with 2.7 percent of the Bay Area's total GHG emissions coming from the industrial/commercial land uses in the southern portion of Solano County.[22] Transportation is the largest GHG emissions sector in the Bay Area, followed by industrial/commercial, electricity generation and cogeneration, and residential fuel usage. In Solano County, the industrial/commercial sector generates the largest amount of GHG emissions, followed by the transportation sector.

Table 3.6-2: 2011 GHG Emissions by Sector and County (MMT CO_2e/Year)

Sector	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano*	Sonoma*
Industrial/Commercial	2.7	17.8	0.4	0.2	1.2	1.4	4.1	2.7	0.5
Residential Fuel	1.3	1.0	0.3	0.1	0.9	0.8	1.5	0.3	0.4
Electricity/Co-gen	0.9	7.2	0.1	0.1	0.5	0.4	2.2	0.4	0.2
Off-road Equipment	0.2	0.2	0.0	0.0	0.2	0.1	0.4	0.0	0.
Transportation	7.9	5.0	1.3	0.9	3.0	5.0	7.6	1.6	2.0
Agriculture/Farming	0.1	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.2
Total	**13.2**	**31.4**	**2.4**	**1.5**	**5.7**	**7.7**	**16.0**	**5.1**	**3.5**

Notes:
* Portion within BAAQMD jurisdiction
BAAQMD = Bay Area Air Quality Management District; CO_2e = carbon dioxide equivalent; co-gen = cogeneration
Source: Bay Area Air Quality Management District. (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases-Base Year 2011.

Solano County

Solano County Climate Action Plan

The County of Solano developed the Climate Action Plan (CAP) to address climate change and reduce the community's GHG emissions at the local level. The CAP acknowledges that although climate change is a global problem, many strategies to both adapt to a changing climate and reduce harmful GHG emissions are best enacted at the local level. The CAP recommends 31 measures and 94 implementing actions that the community can take to reduce both emissions and community-wide contributions to global climate change.

City of Suisun City

Suisun City establishes goals, objectives, and policies to improve air quality and reduce greenhouse gas emissions. The General Plan includes land use and transportation policies that reduce VMT and promote alternatives to automobile travel, which also reduce household and business transportation costs, reduce harmful air pollution (other than GHGs), enhance mobility, and reduce time spent

[22] Bay Area Air Quality Management District. (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases–Base Year 2011.

commuting. The General Plan measures that promote energy efficiency reduce GHGs but also save on household and business utility costs.

Project Site

The project site is currently undeveloped and does not generate GHG emissions.

Climate Change Trends and Effects

CO_2 accounts for more than 75 percent of all anthropogenic GHG emissions, the atmospheric residence time of CO_2 is decades to centuries, and global atmospheric concentrations of CO_2 continue to increase at a faster rate than ever previously recorded. Thus, the warming impacts of CO_2 will persist for hundreds of years after mitigation is implemented to reduce GHG concentrations.

California

Substantially higher temperatures, more extreme wildfires, and rising sea levels are just some of the direct effects experienced in California.[23,24] As reported by the California Natural Resources Agency in 2009, despite annual variations in weather patterns, California has seen a trend of increased average temperatures, more extreme hot days, fewer cold nights, longer growing seasons, less winter snow, and earlier snowmelt and rainwater runoff. Statewide average temperatures increased by about 1.7°F (degrees Fahrenheit) from 1895 to 2011, and a larger proportion of total precipitation is falling as rain instead of snow.[25] Sea level rose by as much as 7 inches along the California coast over the last century, leading to increased erosion and adding pressure to the State's infrastructure, water supplies, and natural resources.

These observed trends in California's climate are projected to continue in the future. Research indicates that California will experience overall hotter and drier conditions with a continued reduction in winter snow (with concurrent increases in winter rains), as well as increased average temperatures and accelerating sea level rise. The frequency, intensity, and duration of extreme weather events such as heat waves, wildfires, droughts, and floods will also change.[26] In addition, increased air pollution and spread of insects potentially carrying infectious diseases will also occur as the climate-associated temperature and associated species clines shift in latitude.

In California, climate change may result in consequences such as the following.[27,28]

[23] California Natural Resources Agency (CNRA). 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.
[24] California Energy Commission (CEC). 2012. Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California.
[25] California Energy Commission (CEC). 2006. Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004. Draft Final Report. CEC-600-2006-013-D.
[26] California Natural Resources Agency (CNRA). 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.
[27] California Climate Change Center. (CCCC). 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. July 2006. CEC-500-2006-077.
[28] Moser et al. 2009. Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2008-071.

- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of Southern California are estimated to increase by approximately 30 percent toward the end of the twenty-first century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more Northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Bay Area

The following is a summary of climate change factors and predicted trends specific to the Bay Area.

Temperature, Heat, Drought, and Wildfire Events

The Bay Area is expected to experience warming over the rest of the twenty-first century. Consistent with Statewide projections, the annual average temperature in the Bay Area will likely increase by 2.7°F between 2000 and 2050, based on GHGs that have already been emitted into the atmosphere. By the end of the century, the increase in the Bay Area's annual average temperature may range from approximately 3.5°F to 11°F relative to the average annual temperature simulated for the

1961–1990 baseline period used for the study, depending on the GHG emissions scenarios.[29] The projected rate of warming, especially in the latter half of the twenty-first century is considerably greater than warming rates derived from historical observed data.

Specific predictions related to temperature/heat are summarized below.

- The annual average temperature in the Bay Area has been increasing over the last several decades.
- The Bay Area is expected to see an increase in average annual temperature of 2.7°F by 2050 and 3.5°F to 11°F by 2100. Projections show a greater warming trend during the summer season. The coastal parts of the Bay Area will experience the most moderate warming trends.[30]
- Extreme heat events are expected to increase in duration, frequency, and severity by 2050. Extreme freeze events are expected to decrease in frequency and severity by 2100, but occasional colder-than-historical events may occur by 2050.[31]

Precipitation, Rainfall, and Flooding Events

Studies of the effect of climate change on the long-term average precipitation for California show some variance.[32] Considerable variability exists across individual models, and examining the average changes can mask more extreme scenarios that project much wetter or drier conditions. California is expected to maintain a Mediterranean climate through the next century, with dry summers and wet winters that vary between seasons, years, and decades. Wetter winters and drier springs are also expected, but overall annual precipitation is not projected to change substantially. By midcentury, more precipitation is projected to occur in winter in the form of less frequent but larger events. The majority of global climate models predict drying trends across the State by 2100.[33]

Specific factors related to precipitation/rainfall/extreme events are summarized below.

- The Bay Area has not experienced substantial changes in rainfall depth or intensities over the past 30 years.
- The Bay Area will continue to experience a Mediterranean climate, with little change in annual precipitation projected by 2050, although a high degree of variability may persist.
- An annual drying trend is projected to occur by 2100. The greatest decline in precipitation is expected to occur during the spring months, while minimal change is expected during the winter months.
- Increases in drought duration and frequency coupled with higher temperatures, as experienced in 2012, 2013, and 2014, will increase the likelihood of wildfires.

[29] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment.
[30] Cal-Adapt. 2021. Climate Tools. Website: http://cal-adapt.org/tools/. Accessed February 9, 2024.
[31] Ibid.
[32] California Climate Change Center (CCCC). 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment. CEC-500-2009-014-F.
[33] California Natural Resources Agency (CNRA). 2009. 2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.

- California is expected to see increases in the magnitude of extreme events, including increased precipitation delivered from atmospheric river events, which would bring high levels of rainfall during short time periods and increase the chance of flash floods. The Bay Area is also expected to see an increase in precipitation intensities, but possibly through less frequent events.[34]

Reduced Sierra Nevada Snowpack and Water Supply Shortages

If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate surface water supplies.

Vectors and Disease Events

Climate change will likely increase vector insect populations and, in turn, may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas, such as malaria, dengue fever, yellow fever, and encephalitis.

Air Quality and Pollution Events

Warming-induced increases in the frequency of smog (ground level ozone) events and particulate air pollution will exacerbate respiratory disorders.[35] Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), CO_2, CH_4, SF_6, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen.[36]

Solano County

In Solano County, climate change would result in sea level rise with possible increases in coastal flooding, saltwater intrusion, water and energy supply shortages, and increased wildfire risk. Rises in average global sea surface and land surface temperatures and indirect effects associated with climate change increase the likelihood for distribution of diseases and other public health problems; increased occurrence and severity of flooding, storm, and wildfire events; habitat loss and species endangerment; and declining agricultural production. Particularly, if GHG emissions are not reduced globally, the effects of climate change on Solano County are likely to be:[37]

- Up to 2.5 times more critical dry years
- Sea level rise inundation of shoreline areas
- Loss of habitat for sensitive species
- Up to 30 percent higher building energy use
- Increased irrigation demand from agriculture
- Changes to crop types grown in the County

[34] California Climate Change Center (CCCC) 2009. Climate Change Scenarios and Sea Level Rise Estimates for the California 2009 Climate Change Scenarios Assessment. CEC-500-2009-014-F. August.
[35] United States Environmental Protection Agency (EPA) 2009. Ozone and your Health. EPA-456/F-09-001. February.
[36] National Institute for Occupational Safety and Health (NIOSH) 2018. Carbon Dioxide. November 29. Website: www.cdc.gov/niosh/npg/npgd0103.html. Accessed February 9, 2024.
[37] County of Solano. 2011. Climate Action Plan. Website: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080. Accessed February 9, 2024.

Energy Basics

Energy is generally transmitted either in the form of electricity, measured in kilowatts (kW)[38] or megawatts (MW),[39] or natural gas measured in therms.[40]

Electricity

Electricity is used primarily for lighting, appliances, and other uses associated with the project.

Natural Gas

Natural gas is used primarily for heating, water heating, and cooking purposes and is typically associated with commercial and residential uses.

Fuel

Fuel is used primarily for powering off-road equipment, trucks, and worker vehicles. The typical fuel types used are diesel and gasoline.

Electricity Generation, Distribution, and Use

State of California

In 2019, the State of California generated approximately 277,704 gigawatt-hours (GWh) of electricity which decreased by 2.7 percent from 2018.[41] Approximately 68 percent of the energy generation is sourced from natural gas, coal, and non-renewables and 32 percent from renewable sources (i.e., solar, wind, and geothermal).[42]

In 2019, California ranked second in the nation in conventional hydroelectric generation, fourth in electricity production, and first as a producer of electricity from solar, geothermal, and biomass resources. California leads the nation in solar thermal electricity capacity and generation.

Electricity and natural gas are distributed through the various electric load-serving entities (LSEs) in California. These entities include investor-owned utilities (IOUs), publicly owned LSEs, rural electric cooperatives, community choice aggregators, and electric service providers.[43]

County of Solano

Pacific Gas and Electric Company (PG&E) provides electricity to many of the cities throughout Solano County. In 2019, Solano County's energy consumption was approximately 3,226 GWh.[44]

[38] 1 kW = 1.000 watts; A watt is a derived unit of power that measures rate of energy conversion. 1 watt is equivalent to work being done at a rate of 1 joule of energy per second. In electrical terms, 1 watt is the power dissipated by a current of 1 ampere flowing across a resistance of 1 volt.

[39] 1 MW = 1 million watts

[40] A unit for quantity of heat that equals 100,000 British thermal units (Btu). A Btu is the quantity of heat required to raise the temperature of 1 pound of liquid water 1 degree Fahrenheit at a constant pressure of 1 atmosphere.

[41] California Energy Commission (CEC). 2020. 2019 Total System Electric Generation. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation/2019. Accessed February 9, 2024.

[42] Ibid.

[43] California Energy Commission (CEC). Electric Load-Serving Entities (LSEs) in California Website: https://www.energy.ca.gov/almanac/electricity_data/utilities.html. Accessed February 9, 2024.

[44] California Energy Commission (CEC). 2020. Electricity Generation by County. Website: https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed February 9, 2024.

Project Site

The project site is currently vacant and does not consume electricity. PG&E provides electricity to the project site.

Natural Gas Generation, Distribution, and Use

State of California

Natural gas is used for everything from generating electricity to cooking and space heating to an alternative transportation fuel. Natural gas generation (in kWh) represented 11 percent of electric power generation in 1990 and increased over the 30-year period to represent 34 percent of electric power generation in 2019.[45] In 2019, the State ranked 14 in natural gas marketed production, producing 196,823 million cubic feet of natural gas.[46]

Natural gas-fired generation has become the dominant source of electricity in California, as it currently fuels approximately 45 percent of electricity consumption.[47] Because natural gas is a dispatchable resource that provides load when the availability of hydroelectric power generation and/or other sources decrease, use varies greatly from year to year. The availability of hydroelectric resources, the emergence of renewable resources for electricity generation, and overall consumer demand are the variables that shape natural gas use in electric generation.

County of Solano

As mentioned prior, PG&E provides natural gas to the unincorporated portions of Solano County. In 2019, Solano County's natural gas consumption was approximately 236 million therms (MMBtu).[48]

Fuel Use

State of California

California is one of the top producers of petroleum in the nation, with drilling operations occurring throughout the State. A network of crude oil pipelines connects production areas to oil refineries in the Los Angeles area, the San Francisco Bay Area, and the Central Valley. California oil refineries also process Alaskan and foreign crude oil received in ports in Los Angeles, Long Beach, and the San Francisco Bay Area. Crude oil production in California and Alaska is in decline, and California refineries have become increasingly dependent on foreign imports.[49] Since 2012, foreign suppliers, led by Saudi Arabia, provide over half of the crude oil refined in California.[50,51] According to the

[45] United States Environmental Protection Agency (EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019.
[46] United States Energy Information Administration (EIA). 2020. Rankings: Natural Gas Marketed Production, 2019. Website: https://www.eia.gov/state/rankings/?sid=CA#series/47. Accessed February 9, 2024.
[47] California Energy Commission (CEC). 2021. Supply and Demand of Natural Gas in California. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california. Accessed February 9, 2024.
[48] California Energy Commission (CEC). 2020. Electricity Generation by County. Website: https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed February 9, 2024.
[49] California Energy Commission (CEC). 2020. Oil Supply Sources to California Refineries. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/oil-supply-sources-california-refineries. Accessed February 9, 2024.
[50] California Energy Commission (CEC). 2019. Foreign Sources of Crude Oil Imports to California 2018. March. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/foreign-sources-crude-oil-imports. Accessed February 9, 2024.
[51] California Energy Commission (CEC). 2020. Oil Supply Sources to California Refineries. Website: https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/oil-supply-sources-california-refineries. Accessed February 9, 2024.

United States Energy Information Administration (EIA), California's field production of crude oil has steadily declined since the mid-1980s, totaling approximately 161.5 million barrels in 2019.[52]

According to the EIA, transportation accounted for nearly 40 percent of California's total energy demand, amounting to approximately 3,170 trillion British thermal units (Btu) in 2018.[53] California's transportation sector, including rail and aviation, consumed roughly 584 million barrels of petroleum fuels in 2018.[54] In 2018, petroleum-based fuels were used for approximately 86 percent of the State's total transportation activity.[55] The California Energy Commission (CEC) produces the California Annual Retail Fuel Outlet Report, which is a compilation of gasoline and diesel fuel sales data from across the State available at the county level. According to the CEC, California's 2019 fuel sales totaled 15,365 million gallons of gasoline and 3,720 million gallons of diesel.[56]

Alternative Fuels

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various Statewide regulations and plans, such as the Low Carbon Fuel Standard (LCFS) and SB 32. Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle, with transportation fuels including hydrogen, biodiesel, and electricity. Currently, 44 public hydrogen refueling stations exist in California; however, none are in the City.[57,58] Currently, 10 public biodiesel refueling stations are in California, with none of them in the City.[59]

Electric Vehicles

Electricity can be used to power electric and plug-in hybrid electric vehicles (EVs) directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored to use electricity generated onboard the vehicle to power electric motors. Currently, California has 13,048 EV charging stations.[60] According to the Department of Energy (DOE) Alternative Fuels Data Center, Solano County has 38 EV charging stations.[61]

[52] United States Department of Energy, Alternative Fuels Data Center. 2020. "Alternative Fueling Station Locator [Interactive Database]." Website: https://afdc.energy.gov/stations/#/find/nearest. Accessed February 9, 2024.
[53] United States Energy Information Administration (EIA). 2020. Table F33: Total Energy Consumption, Price, and Expenditure Estimates, 2019. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_te.pdf. Accessed February 9, 2024.
[54] United States Energy Information Administration (EIA). 2020. Table F16: Total Petroleum Consumption Estimates, 2019. Website: https://www.eia.gov/state/seds/sep_fuel/html/pdf/fuel_use_pa.pdf. Accessed February 9, 2024.
[55] United States Energy Information Administration (EIA). 2020. Table F18: Natural Gas Consumption Estimates, 2019. Website: https://www.eia.gov/state/seds/seds-data-fuel.php?sid=CA#NaturalGas. Accessed February 9, 2024.
[56] California Energy Commission (CEC). 2019. 2010-2019 CEC-A15 Results and Analysis. Website: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting. Accessed February 9, 2024.
[57] United State Department of Energy, Alternative Fuels Data Center. 2020. Alternative Fueling Station Locator [Interactive Database]. Website: https://afdc.energy.gov/stations/#/find/nearest. Accessed February 9, 2024.
[58] United States Department of Energy, Alternative Fuels Data Center. 2020. Alternative Fueling Station Counts by State. June. Website: https://afdc.energy.gov/stations/states. Accessed February 9, 2024.
[59] Ibid.
[60] United States Department of Energy (DOE). N.d. Alternative Fuels Data Center: Electric Vehicle Charging Station Locations. Website: https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?region=US-CA&fuel=ELEC&ev_levels=all. Accessed February 9, 2024.
[61] United States Department of Energy (DOE) Alternative Fuels Data Center. 2020. Electric Vehicle Charging Station Locations. Website: https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?country=US&location_mode=address&location=Solano%20County. Accessed February 9, 2024.

Project Site

The project site is currently vacant and does not consume any fuels.

3.6.3 - Regulatory Framework

International

United Nations Framework Convention on Climate Change

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Western Climate Initiative (Western North America Cap-and-Trade Program)

Cap-and-trade refers to a policy tool where emissions are limited to a certain amount and can be traded, which provides flexibility on how the emitter can comply. Each emitter caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce North America GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Québec. Currently only California and Québec are participating in the Cap-and-Trade Program.[62]

Kyoto Protocol

The Kyoto Protocol is an international agreement linked to the UNFCCC. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of 5 percent against 1990 levels over the 5-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

Paris Climate Change Agreement

Parties to the UNFCCC reached a landmark agreement on December 12, 2015, in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen them in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts and undergo international review.

[62] Center for Climate and Energy Solutions (C^2ES). 2015. Multi-State Climate Initiatives. Website: http://www.c2es.org/us-states-regions/regional-climate-initiatives. Accessed February 9, 2024.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st Conference of Parties, or "COP 21." On June 1, 2017, Former President Trump announced the decision for the United States to withdraw from the Paris Agreement.[63] However, on January 20, 2021, President Biden signed the instrument to bring the United States back into the Paris Agreement that same day. California remains committed to combating climate change through programs aimed to reduce GHGs.[64]

Federal

Massachusetts et al. v. EPA (U.S. Supreme Court GHG Endangerment Ruling)

Massachusetts et al. v. EPA (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the United States Environmental Protection Agency (EPA) regulate four GHGs, including CO_2, under Section 202(a)(1) of the Clean Air Act (CAA). A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the CAA. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations; and
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed under "Clean Vehicles" below. After a lengthy legal challenge, the U.S. Supreme Court declined to review an Appeals Court ruling which upheld the EPA Administrator findings.

United States Consolidated Appropriations Act (Mandatory GHG Reporting)

The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 MT or more per year of GHG emissions are required to submit annual reports to

[63] The White House. 2017. Statement by President Trump on the Paris Climate Accord. Website: https://it.usembassy.gov/statement-president-trump-paris-climate-accord/. Accessed February 9, 2024.

[64] California Air Resources Board (ARB). 2017. New Release: California and China Team Up to Push for Millions More Zero-emission Vehicles. Website: https://ww2.arb.ca.gov/news/california-and-china-team-push-millions-more-zero-emission-vehicles. Accessed February 9, 2024.

the EPA. The first annual reports for the largest emitting facilities, covering calendar year 2010, were submitted to EPA in 2011.

United States Clean Air Act Permitting Programs (New GHG Source Review)

The EPA issued a final rule on May 13, 2010, which establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these CAA permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the Code of Federal Regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Energy Independence and Security Act

The Energy Policy Act of 2005 created the Renewable Fuel Standard program. The Energy Independence and Security Act of 2007 expanded this program by:

- Expanding the Renewable Fuel Standard program to include diesel in addition to gasoline.
- Increasing the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- Establishing new categories of renewable fuel and setting separate volume requirements for each one.
- Requiring 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.

This expanded Renewable Fuel Standard program lays the foundation for achieving substantial reductions of GHG emissions from the use of renewable fuels, reducing the use of imported petroleum, and encouraging the development and expansion of the nation's renewable fuels sector.

Signed on December 19, 2007, by Former President George W. Bush, the Energy Independence and Security Act of 2007 (EISA) reinforces the energy reduction goals for federal agencies put forth in Executive Order 13423, as well as introduces more aggressive requirements. The three key provisions enacted are the Corporate Average Fuel Economy Standards, the Renewable Fuel Standard, and the appliance/lighting efficiency standards.[65]

EPA and National Highway Traffic Safety Administration Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards Final Rule

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light-duty trucks. The law has become more stringent over time. On May 19, 2009, the President put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the United States Department of Transportation's (USDOT's) National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 MMT and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The EPA and the NHTSA issued final rules on a second phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012.[66] The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles. The final standards are projected to result in an average industry fleet wide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 miles per gallon if achieved exclusively through fuel economy improvements.

In August 2017, the EPA asked for additional information and data relevant to assessing whether the GHG emissions standards for model years 2022–2025 remain appropriate. In early 2018, the EPA Administrator announced that the midterm evaluation for the GHG emissions standards for cars and light-duty trucks for model years 2022–2025 was completed and stated his determination that the current standards should be revised in light of recent data. Subsequently, in 2018, the EPA and NHTSA proposed to amend certain existing Corporate Average Fuel Economy (CAFE) standards and tailpipe CO_2 emissions standards for passenger cars and light-duty trucks and establish new standards, covering model years 2022–2025. Compared to maintaining the post-2020 standards then in place, the pending proposal would increase U.S. fuel consumption.[67] California and other states announced their intent to challenge federal actions that would delay or eliminate GHG reductions. In

[65] United States Environment Protection Agency (EPA). Summary of the Energy Independence and Security Act. Website: https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act. Accessed February 9, 2024.

[66] United States Environmental Protection Agency (EPA). 2012. EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks.

[67] United States Environmental Protection Agency (EPA). 2018. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026 Passenger Cars and Light Trucks. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule. Accessed: July 18, 2024.

April 2020, the NHTSA and EPA amended the CAFE and GHG emissions standards for passenger cars and light-duty trucks and established new and less stringent standards, covering model years 2021 through 2026.

On September 27, 2019, the EPA and NHTSA published the Safer Affordable Fuel-Efficient (SAFE) Rule (Part One).[68] The SAFE Rule (Part One) went into effect in November 2019 and revoked California's authority to set its own GHG standards and set Zero-Emission Vehicle (ZEV) emission mandates in California. The SAFE Rule (Part One) froze new ZEV sales at model year 2020 levels for year 2021 and beyond in California and would likely result in a lower number of future ZEVs and a corresponding greater number of future gasoline internal combustion engine vehicles. In response to the EPA's adoption of the SAFE Rule (Part One), the ARB issued guidance regarding the adjustment of vehicle emissions factors to account for the rule's implications on criteria air pollutant and GHG emissions.[69,70]

The SAFE Rule was subject to ongoing litigation and on February 8, 2021, the D.C. Circuit Court of Appeals granted the Biden Administration's motion to stay litigation over the SAFE Rule (Part One). On April 22 and April 28, 2021, respectively, the NHTSA and EPA formally announced their intent to reconsider the SAFE Rule (Part One).[71,72] A virtual public hearing for the EPA's Notice of Reconsideration of the SAFE Rule (Part One) was held on June 2, 2021. The NHTSA finalized the CAFE preemption rulemaking to withdraw its portions of the SAFE Rule (Part One) on December 21, 2021.[73] On March 9, 2022, the EPA reinstated California's authority under the CAA to implement its own GHG emission standards and ZEV sales mandate and entirely rescinded the SAFE Rule (Part One). On July 28, 2023 the NHTSA announced a new proposal for CAFE and heavy-duty pickup truck and van standards, which set new fuel economy standards for model years 2027-2032.

In August 2021, the EPA proposed to revise existing national GHG emissions standards for passenger cars and light-duty trucks for Model Years 2023–2026 to make the standards more stringent. These standards were finalized in December 2021. These standards are the strongest vehicle emissions standards ever established for the light-duty vehicle sector and are based on sound science and

[68] United States Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA). 2019. Federal Register, Vol. 84, No. 188, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program. September 27. Available at: https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-20672.pdf. Accessed: July 18, 2024.

[69] California Air Resources Board (ARB). 2019. EMFAC Off-Model Adjustment Factors to Account for the SAFE Vehicle Rule Part One. November 20. Available at: https://ww2.arb.ca.gov/sites/default/files/2023-02/emfac_off_model_adjustment_factors_final_draft.pdf. Accessed: July 18, 2024.

[70] California Air Resources Board (ARB). 2020. EMFAC Off-Model Adjustment Factors for Carbon Dioxide Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. June 26. Available at:https://ww2.arb.ca.gov/sites/default/files/2023-02/emfac_off_model_co2_adjustment_factors_06262020-final.pdf. Accessed: July 18, 2024.

[71] National Highway Traffic Safety Administration (NHTSA). 2021. NHTSA Advances Biden-Harris Administration's Climate & Jobs Goals. April 22. Available at: https://www.nhtsa.gov/press-releases/nhtsa-advances-biden-harris-administrations-climate-jobs-goals. Accessed: July 18, 2024.

[72] United States Environmental Protection Agency (EPA). 2021. Federal Register, Vol. 86, No. 80, California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a previous Withdrawal of a Waiver of Preemption; Opportunity for Public Hearing and Public Comment. April 28. Available at: https://www.govinfo.gov/content/pkg/FR-2021-04-28/pdf/2021-08826.pdf. Accessed: July 18, 2024.

[73] National Highway Traffic Safety Administration (NHTSA). 2023. Corporate Average Fuel Economy. Available at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy. Accessed: July 18, 2024.

grounded in a rigorous assessment of current and future technologies. The updated standards will result in avoiding more than 3 billion MT of GHG emissions through 2050.[74]

On August 5, 2021, the EPA announced plans to reduce GHG emissions and other harmful air pollutants from heavy-duty trucks through a series of rulemakings over the next three years. The first rulemaking, signed in December 2022, focuses on reducing emissions that form smog and soot from heavy-duty vehicles in model year 2027 and beyond.[75] Since this first rulemaking, two additional rulemakings have been proposed to control truck emissions. One focuses on smog- and soot-forming emissions and GHG emissions from light- and medium-duty vehicles starting with model year 2027, and later models of commercial pickup trucks and vans. The other focuses on GHG emissions from heavy-duty vehicles for model year 2027 and later. On July 28, 2023, the NHTSA announced a new proposal for heavy-duty pickup truck and van standards. The proposal set new fuel economy standards for model years 2030–2035 for heavy-duty pickup trucks and vans.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. The State of California has received a waiver from the EPA to have separate, stricter CAFE Standards. Although global climate change did not become an international concern until the 1980s, efforts to reduce energy consumption began in California in response to the oil crisis in the 1970s, resulting in the incidental reduction of GHG emissions. In order to manage the State's energy needs and promote energy efficiency, AB 1575 created the CEC in 1975.

State

California Assembly Bill 32: Global Warming Solutions Act and Scoping Plan

The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride (NF_3), has also been added to the list of GHGs. The ARB is the State agency charged with monitoring and regulating sources of GHGs.

The State has made steady progress in implementing AB 32. The ARB's initial Climate Change Scoping Plan (Scoping Plan) contained measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32.[76] The Scoping Plan identified recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target. In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the ARB's Cap-and-Trade Program. The Cap-

[74] United States Environmental Protection Agency (EPA). 2021. Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions. Accessed: July 18, 2024

[75] United States Environmental Protection Agency (EPA). 2021. Clean Trucks Plan. https://www.epa.gov/regulations-emissions-vehicles-and-engines/clean-trucks-plan. August. Accessed: July 18, 2024.

[76] California Air Resources Board (ARB). 2008. Climate Change Scoping Plan, a framework for change.

and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions.

The State achieved the 2020 target several years ahead of schedule.[77] As further discussed below, the Scoping Plan has been subsequently updated to go beyond the emission reductions called for in the initial version, in line with more recent State policy directives.

California Senate Bill 32 and Assembly Bill 197

Former Governor Brown signed SB 32 in September of 2016, giving the ARB the statutory responsibility to include the 2030 emissions target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update. SB 32 states, "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that Statewide greenhouse gas emissions are reduced to at least 40 percent below the Statewide greenhouse gas emissions limit no later than December 31, 2030." As such, SB 32 lays the foundation for the legislative reduction targets for 2030.

SB 32 was coupled with a companion bill: AB 197 (Garcia, 2016). Designed to improve the transparency of the ARB's regulatory and policy-oriented processes, AB 197 created the Joint Legislative Committee on Climate Change Policies, a committee with the responsibility to ascertain facts and make recommendations to the Legislature concerning Statewide programs, policies, and investments related to climate change. AB 197 also requires the ARB to make certain GHG emissions inventory data publicly available on its website; consider the social costs of GHG emissions when adopting rules and regulations designed to achieve GHG emission reductions; and include specified information in all Scoping Plan updates for the emission reduction measures contained therein.

California Assembly Bill 1279

The Legislature enacted AB 1279, the California Climate Crisis Act, in September 2022. The legislation declares the policy of the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter. Additionally, the bill requires that by 2045, Statewide anthropogenic GHG emissions be reduced to at least 85 percent below 1990 levels.

2022 Scoping Plan

The most recent version of the ARB's Scoping Plan, the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan), addresses the SB 32 targets and was adopted on December 15, 2022. This plan builds upon previously adopted Scoping Plans, including the 2017 Scoping Plan which originally addressed the emission reduction goals in SB 32, and provides a detailed sector-by-sector guide to address climate change by cutting greenhouse gas emissions by 85 percent and achieving carbon neutrality in 2045, with the main focus of emission reductions efforts being the transportation and energy sectors.[78]

[77] California Air Resources Board (ARB). 2008. Climate Change Scoping Plan, a framework for change.
[78] California Air Resources Board (ARB). 2022. The 2022 Scoping Plan for Achieving Carbon Neutrality. December.

California Senate Bill 350: Clean Energy and Pollution Reduction Act

In 2015, the State Legislature approved, and the Governor signed, SB 350, which reaffirmed California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the Renewables Portfolio Standard (RPS), higher energy efficiency requirements for buildings, initial strategies toward a regional electricity grid, and improved infrastructure for EV charging stations. Provisions for a 50 percent reduction in the use of petroleum Statewide were removed from the bill due to opposition and concern that it would prevent the bill's passage. Specifically, SB 350 requires the following to reduce Statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024 and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission, the CEC, and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electrified transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.[79]

California Senate Bill 100: Renewable Portfolio Standard Program

On September 10, 2018, Governor Newsom signed SB 100, requiring California electricity utility providers to supply all in-State end users with electricity sourced from renewable or carbon-free sources by 2045. Specifically, SB 100 accelerates previously established RPS goals and requires that the program achieve 50 percent of electricity sourced from renewables by December 31, 2026, 60 percent by December 31, 2030, and 100 percent of electricity sourced from carbon-free sources by December 31, 2045. For clarification, renewable sources, as described herein, includes all renewable sources (e.g., solar, small hydro, wind) but notably omits large-scale hydroelectric and nuclear electricity generation; carbon-free sources include all renewable sources as well as large-scale hydroelectric and nuclear electricity generation.

In March 2021, the CEC, the California Public Utilities Commission (CPUC) and the ARB released a joint-agency report evaluating the current feasibility of achieving the energy resource and GHG reductions goals of SB 100. The report finds that SB 100 is technically feasible when analyzed under scenarios of varying timelines, advancements in energy generation technology, and energy source portfolios. Under the SB 100 Core Scenario, it is anticipated that California will need to triple its current electricity power capacity.[80]

[79] California Legislative Information (California Leginfo). 2015. Senate Bill 350 Clean Energy and Pollution Reduction Act of 2015. Website: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350. Accessed February 9, 2024.

[80] California Energy Commission (CEC). 2021. 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment. March 15. Available at: https://www.energy.ca.gov/publications/2021/2021-sb-100-joint-agency-report-achieving-100-percent-clean-electricity. Accessed: July 2024.

2023 Integrated Energy Policy Report

The Draft 2023 Integrated Energy Policy Report (IEPR) provides an assessment of major energy trends and issues for a variety of energy sectors, as well as policy recommendations.[81] Prepared by the CEC, this report details the key energy issues facing California and develops potential strategies to address these issues. The Draft 2023 IEPR includes a discussion of electricity resources and demand, accelerating and enhancing the energy grid, and potential use of hydrogen. The assessments and forecasted energy demand within this report will be used by the CEC to develop future energy policies.

California Senate Bill 1020: Revised Renewable Portfolio Standard Program

SB 1020 (September 2022) revises the standards from SB 100, requiring the following percentage of retail sales of electricity to California end-use customers to come from eligible renewable energy resources and zero-carbon resources: 90 percent by December 31, 2035, 95 percent by December 31, 2040, and 100 percent by December 31, 2045.

California Assembly Bill 1493: Pavley Regulations and Fuel Efficiency Standards

California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011.[82]

The standards were to be phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards were to result in an approximately 22 percent reduction compared with the 2002 fleet, and the midterm (2013–2016) standards were to result in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.[83]

The second phase of the implementation for the Pavley Bill was incorporated into Amendments to the Low Emission Vehicle (LEV) Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid EVs

[81] California Energy Commission (CEC). 2023. Draft 2023 Integrated Energy Policy Report. Available at:https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report. Accessed: July 18, 2024.

[82] California Air Resources Board (ARB). 2013. Clean Car Standards—Pavley, Assembly Bill 1493. Website: https://www.gsweventcenter.com/GSW_RTC_References/2015_0915_CleanAirStandards_Pavley.pdf. Accessed February 9, 2024.

[83] California Air Resources Board (ARB). 2011. Facts About the Advanced Clean Cars Program. November 9.

and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.[84]

ATCM: Transportation Refrigeration Unit

This Airborne Toxic Control Measure (ATCM) applies to Transportation Refrigeration Units (TRUs), which are commonly found on various transported containers, including truck vans, semi-truck trailers, shipping containers, and railcars. TRUs are temperature control systems powered by small (typically 9 to 36 horsepower) diesel internal combustion engines. Despite their small individual size, TRUs are often active in dense congregations around distribution centers, truck stops, and other facilities, resulting in a significantly greater combined loading. This ATCM focuses on the reduction of diesel particulate emissions as a toxic in order to improve air quality around these centers. Additionally, transitioning diesel TRUs to zero-emissions technologies is a priority because of Executive Order N-79-20, which set a goal of 100 percent zero-emission off-road vehicles and equipment in California by 2035.

California Senate Bill 375: Sustainable Communities and Climate Protection Act

SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

California Senate Bill 1368: Emission Performance Standards

In 2006, the State Legislature adopted SB 1368, which the Governor subsequently signed into law. SB 1368 directs the CPUC to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle, natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to, publicly owned utilities of 1,100 lb. CO_2 per megawatt-hour (MWh).

California Senate Bill X7-7: Water Conservation Act

This 2009 legislation directed urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this

[84] California Air Resources Board (ARB). 2011. Status of Scoping Plan Recommended Measures.

Statewide goal of 20 percent decrease in demand would have resulted in a reduction of almost 2 million acre-feet in urban water use in 2020.

California Air Resources Board Truck and Bus Regulation

As part of the ARB's Sustainable Freight Strategy, the ARB adopted the Truck and Bus Regulation. The latest amendments to the Truck and Bus Regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses had to meet particulate matter (PM) filter requirements as of January 1, 2012. Lighter and older heavier trucks had to be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

This regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks.[85]

California Air Resources Board Advanced Clean Trucks Rule

To further advance the State's Sustainable Freight Strategy, the ARB adopted the Advanced Clean Trucks (ACT) Rule in July 2020, which requires manufacturers of vehicle class 2b through vehicle class 8 trucks to begin meeting escalating in-State ZEV sales from 2024 through 2035. By 2035, the ACT Rule will require 55 percent of trucks class 2b through class 3 to be ZEVs, 75 percent of trucks class 4 through class 8 to be ZEVs, and 40 percent of truck tractors to be ZEVs. [86] Complementary to the ACT Rule, and as discussed further below, Executive Order N-79-20 set a goal of 100 percent of all in-State drayage truck sales to be ZEVs by 2035 and 100 percent of all in-State heavy-duty vehicle sales to be ZEVs by 2045.The ARB is also in process of developing an Advanced Clean Fleet (ACF) Rule to accelerate the ACT Rule by requiring 100 percent of all in-State sales to be ZEVs in 2040 for class 2b through class 3 trucks, class 4 through class 8 vocational trucks, and class 7 through class 8 tractor trucks. The ACF Rule also provides a clear timeline for requirements for phasing in in-State ZEV sales targets through 2040.[87]

California Code of Regulations Title 20: Appliance Efficiency Regulations

California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for

[85] California Air Resources Board (ARB). 2015. On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Website: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed February 9, 2024.

[86] California Air Resources Board (ARB). 2021. Advanced Clean Trucks Fact Sheet. Website: https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-trucks-fact-sheet. Accessed February 9, 2024.

[87] California Air Resources Board (ARB). 2022. Path to Zero-Emission Trucks FAQ. Website: https://ww2.arb.ca.gov/resources/fact-sheets/path-zero-emission-trucks-faq. Accessed February 9, 2024.

sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.

California Code of Regulations Title 24: Energy Efficiency Standards

Part 6 (Energy Efficiency Standards for Residential and Nonresidential Buildings)

California Code of Regulations Title 24 Part 6 (California's Energy Efficiency Standards for Residential and Nonresidential Buildings) was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2022 Building Energy Efficiency Standards went into effect on January 1, 2023. [88]

California Code of Regulations Title 24: California Green Building Standards Code

California Code of Regulations Title 24, Part 11, is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went into effect on January 1, 2011. The Code is updated on a regular basis, with the most recent update consisting of the 2022 California Green Building Standards Code (CALGreen) that became effective January 1, 2023. Local jurisdictions are permitted to adopt more stringent requirements, as State law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction ordinances and defers to them as the ruling guidance, provided that they provide a minimum 50 percent diversion requirement. The Code also provides exemptions for areas not served by construction and demolition recycling infrastructure. The State Building Code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

CALGreen (California Code of Regulations [CCR] Title 24, Part 11) requires:

- **Stormwater pollution prevention.** Prevent the pollution of stormwater runoff from construction activities through compliance with either a local ordinance or best management practices (4.106.2 [residential], 5.106.1 [nonresidential]).
- **Short-term bicycle parking**. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking**. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- **Facilitation for future installation of electric vehicle charging.** Install and clearly identify raceways capable of supporting a 208/240-volt dedicated branch circuit as shown in Table 5.106.5.3.3 (4.106.4 [residential], 5.106.5.3 [nonresidential]).

[88] California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. Website: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency. Assessed February 9, 2024.

- **Recycling by Occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling (4.410.2 [residential], 5.410.1 [nonresidential]).
- **Construction waste**. A minimum 65 percent diversion of construction and demolition waste from landfills. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).
- **Wastewater reduction**. Each building shall reduce the generation of wastewater by one of the following methods:
  1. The installation of water-conserving fixtures or
  2. Using nonpotable water systems (5.303.4).
- **Water use savings**. 20 percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters**. Separate water meters for buildings in excess of 50,000 square feet or any tenant projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency**. Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control**. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particleboard (4.501 [residential], 5.404 [nonresidential]).
- **Building commissioning**. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

California Model Water Efficient Landscape Ordinance

The Model Water Efficient Landscape Ordinance (Ordinance) was required by the AB 1881 Water Conservation Act. The Ordinance required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with the SB X7-7 2020 mandate were required. Former Governor Brown's Drought Executive Order of April 1, 2015 (Executive Order B-29-15) directed DWR to update the Ordinance through expedited regulation. The California Water Commission approved the revised Ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the Ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

California Public Utilities Code

The California Public Utilities Commission CPUC) regulates privately owned telecommunication, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. It is the responsibility of the CPUC to (1) assure California utility customers receive safe, reliable utility service at reasonable rates; (2) protect utility customers from fraud; and (3) promote a healthy California economy. The Public Utilities Code, adopted by the Legislature, defines the jurisdiction of the CPUC.

Solid Waste Diversion

The California Integrated Waste Management Act of 1989, as modified by AB 341 (Chesbro, 2011), requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; (2) diversion of 50 percent of all solid waste on and after January 1, 2000; and (3) source reduction, recycling and composting of 75 percent of all solid waste on or after 2020, and annually thereafter. CalRecycle is required to develop strategies, including source reduction, recycling, and composting activities, to achieve the 2020 goal.

CalRecycle published a discussion document, entitled California's New Goal: 75 Percent Recycling, which identified concepts that would assist the State in reaching the 75 percent goal by 2020. Subsequently, in August 2015, CalRecycle released the AB 341 Report to the Legislature, which identifies five priority strategies for achievement of the 75 percent goal: (1) moving organics out of landfills; (2) expanding recycling/manufacturing infrastructure; (3) exploring new approaches for State and local funding of sustainable waste management programs; (4) promoting State procurement of post-consumer recycled content products; and (5) promoting extended producer responsibility.

California Executive Order B-55-18 (GHG Emissions Reduction Targets)

On September 10, 2018, former California Governor Jerry Brown issued Executive Order B-55-18, which established the following GHG emissions reduction target:

By 2045, California shall achieve carbon net neutrality.

Executive Order B-55-18 identifies that the new Statewide goal is to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net neutrality emissions thereafter. This emissions goal is in addition to the existing targets established by Executive Orders S-3-05 and B-30-15 and SB 32, as described in greater detail below. This Executive Order also directs the ARB to work with other State agencies to identify and recommend measures to achieve this goal.

California Executive Order S-01-07: Low Carbon Fuel Standard

The Governor signed Executive Order S 01-07 on January 18, 2007. This order mandated that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the Executive Order established an LCFS and directed the Secretary for Environmental Protection to coordinate the actions of the CEC, the ARB, the University

of California, and other agencies to develop and propose protocols for measuring the "lifecycle carbon intensity" of transportation fuels.

California Executive Order N-79-20

On September 23, 2020, Governor Gavin Newsom issued Executive Order N-79-20, establishing a goal that 100 percent of new passenger cars and trucks sold in California shall be zero-emission by 2035. The Executive Order also set a goal that, where feasible, all operations include zero-emission medium- and heavy-duty trucks by 2045 and drayage trucks by 2035. Off-road vehicles have a goal to transition to 100 percent ZEVs by 2035 where feasible. While in-State sales of EVs will increase through 2045, the State does not currently have legislation which will restrict or preclude the use of fossil-fueled vehicles by or after 2045.

California Executive Order S-13-08

Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy was adopted, which is the ". . . first Statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

California Executive Order B-30-15

On April 29, 2015, the Governor issued an Executive Order to establish a California GHG emissions reduction target of 40 percent below 1990 levels by 2030. The Governor's Executive Order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The Executive Order sets a new interim Statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050 and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MMT CO_2e. The Executive Order also requires the State's climate adaptation plan to be updated every 3 years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this Executive Order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to make post 2020 targets and requirements a mandate is in process in the State Legislature.

California Senate Bill 97 and the California Environmental Quality Act Guidelines Update

Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. SB 97 states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall

certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

The 2010 California Environmental Quality Act (CEQA) Amendments first guided public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The 2010 CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change. The 2010 CEQA Amendments also revised Appendix F of the CEQA Guidelines, which focuses on energy conservation, and the sample environmental checklist in Appendix G was amended to include GHG questions.

The most recent 2018 CEQA Amendments expanded upon the previous guidance by specifying that:

- The lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to Statewide, national, or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and State regulatory schemes.
- In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

A lead agency may use a model or methodology to estimate GHG emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision-makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

The 2010 changes to CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts, respectively, remained unchanged by the 2018 CEQA Amendment. The cumulative impact discussion requirement (CEQA Guidelines § 15130) simply directs agencies to analyze GHG emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable; however, it does not answer the question of when emissions are cumulatively considerable.

Under CEQA Guidelines Section 15064.4(b), a lead agency should consider the following factors, among others, when determining the significance of impacts from GHG emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

CEQA Guidelines Section 15183.5 continues to permit programmatic GHG analysis and later project-specific tiering, as well as the preparation of Greenhouse Gas Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to Section 15183.5(b).

CEQA emphasizes that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines § 15130(f)).

California Supreme Court Decisions on GHG Analysis

The California Supreme Court has issued two major decisions providing guidance to lead agencies regarding how to address, and assess the significance of, the GHG emissions from proposed project. The first was *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204; and the second was *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497. Each of these cases merits an extended discussion, as the City has taken their teachings to heart in formulating its own approach for assessing the GHG impacts of the proposed project.

Center for Biological Diversity v. California Department of Fish and Wildlife

In *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204, the California Supreme Court found problems with the GHG analysis performed in an EIR for certain biological permits needed for the proposed Newhall Ranch project (a new city-sized development in the northern part of the Los Angeles Basin). These permits would be issued by the California Department of Fish and Wildlife (CDFW). The Court concluded that, although assessing whether the project was consistent with meeting the Statewide emission reduction goals required by AB 32 was generally a legally permissible approach for assessing the significance of GHG emissions, here CDFW's significance finding for the Newhall Ranch project, though based on such an approach, was not supported by a reasoned explanation based on substantial evidence. In finding the impact less than significant, CDFW had accounted for the fact that, under AB 32, the State of California was required to reduce Statewide GHG emissions by approximately 29 percent from what would have occurred under a hypothetical future scenario in which AB 32 had not been enacted. This counterfactual scenario was called a "business as usual" (BAU) scenario. CDFW reasoned by analogy that, if Newhall Ranch as designed to reduce GHG emissions would reduce its own GHG emissions 29 percent or more below a project-specific BAU scenario, the GHG impacts of the project would be less than significant. Because the project's emissions would be 31 percent below a project-specific BAU scenario, CDFW found the impacts to be less than significant. The Court faulted CDFW's approach as being, in essence, too simplistic:

the administrative record discloses no substantial evidence that Newhall Ranch's *project-level* reduction of 31 percent in comparison to business as usual is consistent with achieving A.B. 32's *statewide* goal of a 29 percent reduction from business as usual . . . Even using the EIR's own significance criterion, the EIR's analysis fails to support its conclusion of no significant impact.

The Scoping Plan set out a statewide reduction goal and a framework for reaching it—a set of broadly drawn regulatory approaches covering all sectors of the California economy and projected, if implemented and followed, to result in a reduction to 1990–level greenhouse gas emissions by the year 2020. The plan expressed the overall level of conservation and efficiency improvements required as, among other measures, a percentage reduction from a hypothetical scenario in which no additional regulatory actions were taken. But the Scoping Plan nowhere related that *statewide* level of reduction effort to the percentage of reduction that would or should be required from *individual projects,* and nothing DFW or Newhall have cited in the administrative record indicates the required percentage reduction from business as usual is the same for an individual project as for the entire state population and economy.

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At bottom, the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas emissions reduction effort required by the state as a whole, and attempting to use that method, without consideration of any changes or adjustments, for a purpose very different from its original design: To measure the efficiency and conservation measures incorporated in a specific land use development proposed for a specific location. The EIR simply assumes that the level of effort required in one context, a 29 percent reduction from business as usual statewide, will suffice in the other, a specific land use development. From the information in the administrative record, we cannot say that conclusion is wrong, but neither can we discern the contours of a logical argument that it is right.

(62 Cal.4th at pp. 225-227, italics original.)

In remanding the matter back to CDFW for further work on the EIR, the Court offered CDFW some potential solutions to address this issue, as summarized below (see 62 Cal.4th at pp. 228-231):

Specifically, the Court advised that:

- **Substantiation of Project Reductions from Business as Usual**. A lead agency may use a BAU comparison based on the operative Scoping Plan's methodology if the agency also substantiates the reduction a particular project must achieve to comply with Statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (62 Cal.4th at p. 229).

- **Compliance with GHG Reduction Plans or Climate Action Plans**. A lead agency may use "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (62 Cal.4th at p. 230).
- **Compliance with Local Air District Thresholds**. A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (Cal.4th at pp. 230-231).
- **Compliance with Regulatory Programs or Performance Based Standards**. A lead agency "might assess consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].)" To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other State agencies, a lead agency could appropriately rely on their use as showing compliance with "performance based standards adopted to fulfill 'a Statewide . . . plan for the reduction or mitigation of greenhouse gas emissions' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions']).". (62 Cal.4th at p. 229).

Earlier in the decision, the Court had explained that

> because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself. The challenge for CEQA purposes is to determine whether the impact of the project's emissions of greenhouse gases is *cumulatively* considerable, in the sense that "the incremental effects of [the] individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (§ 21083, subd. (b)(2); see Guidelines, § 15064, subd. (h)(1).) "With respect to climate change, an individual project's emissions will most likely not have any appreciable impact on the global problem by themselves, but they will contribute to the significant cumulative impact caused by greenhouse gas emissions from other sources around the globe. The question therefore becomes whether the project's incremental addition of greenhouse gases is 'cumulatively considerable' in light of the global problem, and thus significant." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions Under CEQA: California's Search for Regulatory Certainty in an Uncertain World* (July 2011) 4 Golden Gate U. Envtl. L.J. 203, 207–208 ("Addressing the Significance of Greenhouse Gas Emissions").)
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> ***
>
> In short, neither A.B. 32 nor the Scoping Plan establishes regulations implementing, for specific projects, the Legislature's statewide goals for reducing greenhouse gas emissions. Neither constitutes a set of "regulations or requirements adopted to implement" a

> statewide reduction plan within the meaning of Guidelines section 15064.4, subdivision (b)(3). That guideline, however, does not expressly or impliedly prohibit a lead agency from using the A.B. 32 goals themselves to determine whether the project's projected greenhouse gas emissions are significant. As noted by the Natural Resources Agency in its amicus curiae brief, "a discussion of a project's consistency with the State's long-term climate stabilization objectives ... will often be appropriate ... under CEQA," provided the analysis is "tailored ... specifically to a particular project." Indeed, to proceed in this manner is consistent with CEQA's "inherent recognition ... that if a plan is in place to address a cumulative problem, **a new project's incremental addition to the problem will not be 'cumulatively considerable' if it is consistent with the plan and is doing its fair share to achieve the plan's goals."** *(Addressing the Significance of Greenhouse Gas Emissions, supra,* 4 Golden Gate U. Envtl. L.J. at pp. 210–211.) For this reason as well, we conclude DFW's choice to use that criterion does not violate CEQA.
>
> (62 Cal.4th at pp. 219, 223, bolded emphasis added.)

As this last discussion makes clear, one conceptual approach for assessing the significance of a project's GHG emissions is to determine whether the project as designed and mitigated "is doing its fair share to achieve" the Statewide reductions required under the most recent, operable Statewide, regional, or local plan for the reduction of GHGs. As explained below, the City has adopted this approach in assessing the operational GHG emissions from the proposed project based on direction received from BAAQMD.

Cleveland National Forest Foundation v. San Diego Association of Governments (SANDAG)

In *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497 (*SANDAG)*, the Supreme Court addressed the extent to which, if any, an EIR for a Regional Transportation Plan (RTP) with a Sustainable Communities Strategy (SCS) must address the proposed project's consistency with the 2050 target set forth in Executive Order S-03-05 (i.e., 80 percent below 1990 levels). The Court held that SANDAG did not abuse its discretion by failing to treat the 2050 GHG emissions target as a threshold of significance. The Court cautioned, however, that its decision applies narrowly to the facts of the case and that the analysis in the challenged EIR should not be used as an example for other lead agencies to follow going forward. Notably, the RTP itself covered a planning period that extended all the way to 2050.

The Court acknowledged the parties' agreement that "the Executive Order lacks the force of a legal mandate binding on SANDAG[.]" (*Id*. at p. 513.) This conclusion was consistent with the Court's earlier decision in *Professional Engineers in California Government v. Schwarzenegger* (2010) 50 Cal.4th 989, 1015, which held the Governor had acted in excess of his executive authority in ordering the furloughing of State employees as a money-saving strategy. In that earlier case, which is not mentioned in the *SANDAG* decision, the Court held that the decision to furlough employees was legislative in character, and thus could only be ordered by the Legislature, and not the Governor, who, under the State constitution, may only exercise executive authority. In *SANDAG*, the Court thus implied recognition that Governors do not have authority to set Statewide legislative policy, particularly for decades into the future. Even so, the Court noted, and did not question, the parties' agreement that "the Executive Order's 2050 emissions reduction target is grounded in sound

science." (3 Cal.5th at p. 513.) Indeed, the Court emphasized that, although "the Executive Order 'is not an adopted GHG reduction plan' and that 'there is no legal requirement to use it as a threshold of significance,'" the 2050 goal nevertheless "expresses the pace and magnitude of reduction efforts that the scientific community believes necessary to stabilize the climate."

This scientific information has important value to policymakers and citizens in considering the emission impacts of a project like SANDAG's regional transportation plan." (*Id*. at p. 515.) Toward the end of the decision, the Court even referred to "the state's 2050 climate goals" as though the 2050 target from Executive Order S-03-05 had some sort of standing under California law. (*Id*. at p. 519.) The Court seemed to reason that, because the Legislature had enacted both AB 32 and SB 32, which followed the downward GHG emissions trajectory recommended in the Executive Order, the Legislature, at some point, was also likely to adopt the 2050 target as well: "SB 32. . . reaffirms California's commitment to being on the forefront of the dramatic greenhouse gas emission reductions needed to stabilize the global climate." (*Id*. at p. 519.) Finally, the Court explained that "planning agencies like SANDAG must ensure that CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." (*Ibid*.)

In sum, the Court recognized that the Executive Order did not carry the force of law, but nevertheless considered it to be part of "state climate policy" because the Legislature, in enacting both AB 32 and SB 32, seems to be following both the IPCC recommendations for reducing GHG emissions worldwide and evolving science. Nothing in the decision, however, suggests that all projects, regardless of their buildout period, must address the 2050 target or treat it as a significance threshold.

Regional

Plan Bay Area 2050

As required by SB 375, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are jointly tasked with developing an SCS as part of its RTP development. The SCS integrates transportation, land use, and housing for the region to help the State meet its GHG legislative reduction targets. Plan Bay Area 2050 integrates the region's SCS, RTP, and Regional Housing Need Allocation (RHNA) into a single regional plan. Plan Bay Area 2050 contains several goals for the region to attain ranging in focus from housing, economic development, transportation, and environmental resilience.

Bay Area Air Quality Management District

While the ARB is responsible for the regulation of mobile emission sources within the State, local Air Quality Management Districts (AQMDs) and Air Pollution Control Districts (APCDs) are responsible for enforcing standards and regulating stationary sources. The project area is located within the San Francisco Bay Area Air Basin and is subject to the BAAQMD guidelines and regulations. On April 20, 2022, the BAAQMD Board of Directors held a public meeting and adopted the CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans (Guidance).[89]

[89] Bay Area Air Quality Management District (BAAQMD). 2022. CEQA Thresholds for Evaluating the Significance of Climate Impacts

Local

County of Solano

Climate Action Plan

In 2011, Solano County created a Countywide CAP to address climate change locally and reduce GHG emissions within the County. The plan proposes 31 measures and 94 implementing actions that can be taken to reduce countywide emissions and contribution to global climate change. California cities and counties are encouraged and incentivized by the State to adopt CAPs. Solano County's 2008 General Plan required the development of this CAP along with a Sea Level Rise Strategic Program. Because the proposed project site is in unincorporated Solano County, this CAP would apply to the project site if it were developed under a scenario in which the site is not annexed into Suisun City and instead obtained development approvals from Solano County. If the site is annexed, the County CAP would no longer apply.[90] The CAP sets forth the following goals, objectives, and policies relevant to air quality and GHG emissions:

Energy Efficiency Objective

Minimize energy consumption, increase energy efficiencies, and transition to clean renewable energy sources.

E-4 Adopt green building and energy efficiency ordinances to require green building practices, programs and design elements.

E-6 Partner with Solano Economic Development Corporation, Pacific Gas & Electric, and agricultural processing and industrial energy businesses to increase building and process energy efficiency.

Transportation and Land Use Objective

Support a transportation system and land use pattern that promotes carpooling, walking, biking, and using public transit.

Waste Reduction and Recycling Objective

Develop a zero-waste to achieve 75 percent diversion.

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goals, objectives, and policies relevant to air quality and GHG emissions:

Goal T-3 Manage travel demand in order to reduce up-front and ongoing cost of transportation infrastructure, enhance local mobility, improve air quality, and improve the local quality of life.

from Land Use Projects and Plans. Website: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en. Accessed July 22, 2024.

[90] County of Solano. 2011. Climate Action Plan. Available at: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080. Accessed: July 2024.

Objective T-3 Vehicle Miles Traveled (VMT) by Suisun City residents and to Suisun City destinations should increase at a lower rate than that of population and employment growth.

Policy T-3.1 The City will collaborate with other local, regional, and State agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ride sharing, and other strategies to reduce commute period travel demand.

Policy T-3.2 The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.

Policy T-3.6 New developments that would accommodate 100 full or part time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flex time and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.

Policy T-3.7 The City will support regional goals to reduce per capita GHG emissions reductions from automobiles and light-duty trucks in a way that also promotes 2035 General Plan objectives.

Goal PHS-4 Reduce Local Greenhouse Gas Emissions and Reduce the Local Effects of Global Climate Change

Objective PHS-4 Reduce the City's contribution to global climate change effects.

Policy PHS-4.2 The City will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.

Policy PHS-4.3 The City will actively pursue funding for transportation systems that promote public transit, bicycling, and pedestrian travel and other needed infrastructure, building and public realm energy efficiency upgrades, renewable energy production, land use transportation modeling, and other projects to reduce local GHG emissions.

3.6.4 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether greenhouse emissions and energy impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

c) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

d) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Significance Criteria

Impact GHG-1: GHG Emissions Generation

Construction

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site GHG emissions principally consist of exhaust emissions from heavy-duty construction equipment. Off-site GHG emissions would occur from motor vehicle exhaust from material delivery vehicles and construction worker traffic.

Neither Suisun City nor BAAQMD has an adopted threshold of significance for construction-related GHG emissions. Because construction would be temporary and would not result in a permanent increase in emissions, the proposed project would not interfere with the implementation of AB 32, SB 32, or AB 1279.

In Appendix B to its 2022 Air Quality Guidelines (CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans), BAAQMD states that "[t]here is no proposed construction-related climate impact threshold at this time. Greenhouse gas emissions from construction represent a very small portion of a project's lifetime GHG emissions. The proposed thresholds for land use projects are designed to address operational GHG emissions which represent the vast majority of project GHG emissions."

In the absence of a construction-related threshold, the City looks by analogy to BAAQMD's 2022 CEQA Air Quality Guidelines, which state that lead agencies are encouraged to incorporate Best Management Practices (BMPs) for reducing construction-related air pollution. Because these air pollution reduction measures also reduce construction-related GHG emissions, the City believes they should be applied to new development projects as feasible and applicable as means of reducing construction-related GHG emissions.

These construction GHG BMPs recommended by BAAQMD, some of which would be incorporated into the project (see Mitigation Measure [MM] GHG-1), include the following practices:

- Use zero-emission and hybrid-powered equipment to the greatest extent possible, particularly if emissions are occurring near sensitive receptors or located within a BAAQMD-designated Community Air Risk Evaluation (CARE) area of AB 617 community.
- Require all diesel-fueled off-road construction equipment to be equipped with EPA Tier 4 Final compliant engines or better as a condition of contract.
- Require all on-road heavy-duty trucks to be zero emissions or meet the most stringent emissions standards, such as model year (MY) 2024 to 2026, as a condition of contract.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the State ATCM [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure.
- Prohibit off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Use ARB-approved renewable diesel fuel in off-road construction equipment and on-road trucks.
- Use EPA SmartWay certified trucks for deliveries and equipment transport.
- Require that all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- When grid power is available, prohibit portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible.
- When grid power is not available, use alternative fuels, such as propane or solar electrical power, for generators at construction sites.
- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking to construction workers and offer meal options on-site or shuttles to nearby meal destinations for construction employees.
- Reduce electricity use in the construction office by using light emitting diode (LED) bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
- Minimize energy use during site preparation by deconstructing existing structures to the greatest extent feasible.
- Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24.
- Use locally sourced or recycled materials for construction materials (goal of at least 20 percent based on costs for building materials and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products used should be certified through a sustainable forestry program.
- Use low carbon concrete, minimize the amount of concrete used and produce concrete on-site if it is more efficient and lower emitting than transporting ready-mix.
- Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.

- Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities.

The incorporation of feasible and applicable GHG-reducing construction BMPs serves herein as the basis for determining whether or not project construction activities incorporate mitigation strategies that constitute the project's "fair share" of construction-related GHG emission reductions consistent with the legislative reduction targets codified by SB 32 and AB 1279 and the State's long-term climate goal of carbon neutrality by 2045. (See *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219-223 [explaining "fair share" approach to assessing impact significance].) Under this approach, the proposed project would be considered to result in less than cumulatively considerable construction-related GHG emissions if project construction activities incorporate feasible and applicable GHG-reducing construction BMPs recommended by BAAQMD.

Operations of Land Use Projects

For operational GHG emissions, BAAQMD's 2022 significance thresholds for land use projects are listed below. Note that proposed project GHG emissions are quantified below for informational purposes only.

Per BAAQMD-recommended 2022 thresholds of significance, if a land use development project cannot demonstrate consistency with Criterion A or Criterion B (both set forth below), that project would result in a potentially significant impact related to GHG emissions.

A. Projects must include, at a minimum, the following project design elements.
    1. Buildings:
        a) The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
        b) The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
    2. Transportation:
        a) Achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted SB 743 VMT target:
            i. Residential projects: 15 percent below the existing VMT per capita.
            ii. Office projects: 15 percent below the existing VMT per employee.
            iii. Retail projects: no net increase in existing VMT.
        b) Achieve compliance with EV charging requirements in the most recently adopted version of CALGreen Tier 2.

B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b)

In regard to the VMT threshold for industrial projects, one option is to follow the approach that BAAQMD used for retail projects: to assess whether industrial projects will result in a net increase in existing VMT. A second option is to follow BAAQMD's approach with respect to residential projects: to assess whether industrial projects will result in 15 percent below the existing regional VMT per capita. A third option is to follow BAAQMD's approach with respect to office projects: to assess whether industrial projects will result in VMT 15 percent below the existing VMT per employee. Because industrial projects more closely resemble office projects versus residential projects, and because the BAAQMD approach for office projects is more conservative than the approach for retail projects, this analysis will follow BAAQMD's approach for office projects—15 percent below the existing VMT per employee—as the threshold for assessing VMT impact for industrial uses for analyzing consistency with Criterion A.

Because the BAAQMD threshold for office projects focuses on only one type of vehicle trip—employee trips—the VMT analysis also focuses on employee trips only. As described in the Transportation analysis in Section 3 of this DEIR, a VMT analysis for the proposed project was conducted in accordance with the recommendations in the Suisun City SB 743 Implementation Summary of Findings and Recommendations for VMT-Based CEQA Thresholds technical memorandum. The City of Fairfield Travel Forecast Model was used to estimate VMT for the proposed project.

Within the City of Fairfield model, the proposed project site initially had an estimated daily trip generation of 9,110 trips. As such, a Fratar process was implemented to adjust the model-generated daily trips of the project to be more aligned with the projected number of daily trips for the proposed project per the Institute of Transportation Engineers (ITE) trip rate. With the Fratar adjustments, the VMT per employee was calculated on a consistent number of vehicle trips based on an ITE trip generation projection and the project trip distribution and trip lengths from the City of Fairfield model.

Exclusion of Heavy Truck Trips

According to the City's Guidelines, heavy truck trips should be excluded in CEQA SB 743 VMT analysis. Consequently, the target total daily estimate project trips of 3,726 for the Fratar process was adjusted to 3,253, which deducted 473 daily truck trips. The results of the VMT analysis indicated that the VMT per employee was 14.5 during the base year 2020. The VMT per employee for the year 2035 was 13.6.

The average 2020 (Base Year) VMT per employee for home-based work trips is 14.8 miles; 15 percent less than this figure would result in a VMT threshold of 12.6. For 2035, the average VMT per employee is projected to be 13.7, so the threshold of 15 percent less that this figure would be 11.7 VMT per employee.

Operations of Stationary Sources

The BAAQMD's CEQA Guidelines requires a quantitative evaluation of GHG emissions from new stationary sources through a comparison with the bright-line threshold of 10,000 MT CO_2e per year. This threshold of significance is applicable to only the proposed stationary sources of the project.

Impact GHG-2: GHG Emissions Reduction Plan Consistency

While the above methodology is employed under Impact GHG-1, which focuses on the proposed project's direct and indirect generation of GHG emissions, Impact GHG-2 methodology for determining whether a potentially significant impact would occur focuses on the proposed project's consistency with the applicable plan adopted for the purpose of reducing GHG emissions. Consistent with the BAAQMD's CEQA Air Quality Guidelines, for this impact to be less than significant, the proposed project must demonstrate consistency with the applicable GHG emissions reduction plan. As such, the proposed project would be determined to conflict with an applicable GHG emissions reduction plan if it would not adhere to applicable GHG reduction measures included in the City's General Plan, the Solano County CAP, MTC/ABAG Plan Bay Area 2050, and the ARB's 2022 Scoping Plan.

Impact GHG-3: Wasteful, Inefficient, or Unnecessary Energy Consumption

The methodology employed under Impact GHG-3, which focuses on determining whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources, follows the guidance provided in Appendix F of the CEQA Guidelines. A significant impact would occur if the proposed project would result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. The proposed project would be determined to result in wasteful, inefficient, or unnecessary consumption of energy resources based on project construction activity and anticipated operational activity.

Impact GHG-4: Renewable Energy and Energy Efficiency Plan Consistency

Similar to the impact discussion under Impact GHG-2, this impact discussion focuses on project consistency with a local plan or policy adopted for the purpose of improving energy efficiency or reliance on renewable energy sources. The impact discussion under Impact GHG-2 differs from this impact discussion in that Impact GHG-2 explores project consistency with relevant policies intended to reduce GHG emissions, which often encompass energy efficiency and renewable energy measures. Impact GHG-4, by contrast, focuses on project consistency with relevant policies intended to improve energy efficiency and encourage the use of renewable energy sources. Therefore, while both Impact GHG-2 and Impact GHG-4 will discuss project consistency with the City's General Plan, Impact GHG-4 focuses solely on policies applicable to energy consumption. As such, the proposed project would be determined to conflict with the applicable energy efficiency or renewable energy plan if it would not adhere to applicable energy consumption related measures included in the City's General Plan and Solano County CAP.

Approach to the Analysis

The California Emissions Estimator Model (CalEEMod) Version 2022.1 was developed in collaboration with the South Coast Air Quality Management District and other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential GHG emissions associated with construction and operation from various land uses (see also Appendix B2 [GHG Report], Section 4.1.1.2). The modeling used to support this analysis follows BAAQMD guidance where applicable from its CEQA Air Quality Guidelines.

At the time of this analysis, construction of the proposed project was anticipated to begin in 2025 and be completed 18 months later. In general, this analysis also includes estimated project trip generation and daily employee VMT provided in Section 3.12, Transportation. As the proposed project is a speculative warehouse development which could accommodate cold storage and accompanying TRUs, this analysis considers two project scenarios: a cold warehouse project scenario and a dry warehouse project scenario. Where appropriate, both project scenarios are presented herein to determine project impacts.

Construction-Related GHG Emissions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from both on-site and off-site activities. On-site emissions consist of exhaust emissions from the activity levels of heavy-duty construction equipment and motor vehicle operation. Off-site emissions result from motor vehicle exhaust from hauling and vendor trucks and worker traffic.

Construction emissions are generally calculated as the product of an activity factor and an emission factor. The activity factor for construction equipment is a measure of how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or the amount of fuel consumed in a given amount of time. The emission factor relates the process activity to the amount of pollutant emitted. Examples of emission factors include grams of emissions per VMT and grams of emissions per horsepower-hour. The operation of a piece of equipment is tempered by its load factor, which is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity. This analysis uses the CalEEMod default load factors for off-road equipment.

Operation-Related GHG Emissions

The operational-phase emissions are based on the development of the proposed industrial park. The modeling accounts for the average daily vehicle and truck trips and VMT, energy usage, water demand, and wastewater and solid waste generation. For purposes of this analysis, hours of operation for the proposed project are 24 hours per day, 7 days per week.

Transportation

On-road transportation sources are based on passenger vehicle and truck trip generation rates and VMT contained in a January 17, 2024, report prepared by Fehr & Peers entitled, Big Data Passenger Vehicle and Light-Duty Truck Trip Lengths and Project Generated VMT Comparison Assessment for the Suisun Logistics Center Project in Suisun City, California. According to the VMT information provided therein, the proposed project would result in an average one-way employee vehicle trip length of 13.2 miles. As this VMT would represent all travel to and from the project site for employees, an average of 13.2 miles per vehicle trip was utilized in the modeling. However, as provided in the January 2024 report by Fehr & Peers, the proposed project would also generate truck traffic for deliveries and shipments. Based on regional goods movement patterns within the Fairfield/Suisun City area, the weighted average length of heavy-duty truck trips that would be generated by the project is approximately 39.5 miles (see Appendix B2 [GHG Report], Table 4-6).

CalEEMod, Version 2022.1 was used to quantify passenger vehicle emissions using vehicle emission rates based on vehicle emissions data obtained from the ARB's EMFAC2021web database and adjusted based on methodology provided in Appendix B of the CalEEMod User's Guide.[91] The passenger vehicle trips were assumed to be distributed among the light-duty auto (LDA), light-duty truck 1 (LDT1), light-duty truck 2 (LDT2), and medium-duty vehicle (MDV) EMFAC 2021 vehicle categories proportional to that respective vehicle category's share between those four passenger vehicle categories within CalEEMod for Solano County.

Truck and TRU emissions were calculated utilizing the ARB's EMFAC2021 and OFFROAD2021 web databases, respectively, and adjusted based on methodology provided in Appendix B of the CalEEMod User's Guide. Please refer to the fleet mix adjustment calculations contained in Appendix B of the CalEEMod User's Guide for more details. The same databases were used for the forklifts and yard trucks used for on-site operations of the project.

Other Operational Emissions

Solid Waste Disposal

Indirect emissions from waste generation are based on the CalEEMod default solid waste generation rates, which are based on data from the California Department of Resources, Recycling, and Recovery (CalRecycle).

Water/Wastewater

GHG emissions from this sector are associated with the embodied energy used to supply water, treat water, distribute water, and then treat wastewater and fugitive GHG emissions from wastewater treatment. Indoor water consumption is based on CalEEMod default indoor water use rates.

Area Sources

Area sources are based on the CalEEMod defaults for use of landscaping equipment. Other categories of area sources do not generate GHG emissions or consume energy.

Energy

Emissions from this sector are from electricity use for lighting and power needs at the proposed buildings.

Stationary Sources

Stationary sources are based on the anticipated stationary source equipment included in the proposed project. Given the type and size of the proposed project, the project applicant anticipates the use of a backup diesel generator and diesel-fueled fire pump for each of the six proposed buildings; however, the exact specifications for this equipment are unknown at the time of this analysis. To account for potential operational emissions generated from the emergency and non-emergency use of this equipment, the proposed project was assumed to include six backup diesel generators and six diesel-fueled fire pumps, each assumed to be rated at 50 horsepower and operate

[91] California Air Pollution Control Officers Association (CAPCOA). 2017. California Emissions Estimator Model (CalEEMod). Version 2020.4.0 Prepared by: BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts.

for maintenance an estimated 150 hours per year, consistent with the BAAQMD's CEQA Air Quality Guidelines. All stationary sources are subject to BAAQMD permitting limits and requirements.

For additional detail on resources used in this analysis, see Appendix B2 (GHG Report) of this EIR, Section 4.1.1.2.

3.6.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Greenhouse Gas Emissions

Impact GHG-1:	**The proposed project would generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**

Impact Analysis

Both construction and operational activities have the potential to generate GHG emissions. The proposed project would generate GHG emissions during temporary (short-term) construction activities such as site grading, operation of construction equipment, operation of on-site heavy-duty construction vehicles, hauling of materials to and from the project site, asphalt paving, and construction worker vehicle trips. On-site construction activities would vary depending on the level of construction activity.

Long-term, operational GHG emissions would result from project-generated vehicular traffic, operation of any landscaping equipment, off-site generation of electrical power over the life of the proposed project, the energy required to convey water to and wastewater from the project site, the emissions associated with the hauling and disposal of solid waste from the project site, any fugitive refrigerants from air conditioning or refrigerators, and the operation of any proposed stationary sources such as backup generators or fire pumps.

Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough GHG emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact. Therefore, this section measures the proposed project's contribution to the cumulative environmental impact. The following is a discussion of the project's contribution to GHG emissions during both the construction and operation phases.

Construction

As previously discussed, neither the City nor BAAQMD has thresholds of significance for construction-related GHG emissions; therefore, the incorporation of feasible and applicable GHG-reducing construction BMPs, including those listed above, serves herein as the basis for whether project construction would contribute its "fair share" of GHG emission reductions consistent with the legislative reduction targets codified by SB 32 and the State's long-term climate goal of carbon neutrality by 2045. As such, the proposed project would be considered to result in a potentially

significant impact if project construction would not incorporate feasible and applicable GHG-reducing construction BMPs including those recommended by BAAQMD. However, the proposed project would incorporate several feasible and applicable BAAQMD-recommended air pollution-reducing construction BMPs, listed above in the Significance Criteria section, as these BMPs will also reduce construction-related GHG impacts. The incorporated BMPs are set forth below in Mitigation Measure GHG-1.

Project-related construction emissions assuming incorporation of feasible and applicable BAAQMD-recommended GHG-reducing construction BMPs are shown in Table 3.6-3. This analysis conservatively assumes that construction would start in 2025 and accounts for the vegetation changes that would occur at the project site. As vehicle and equipment fuel efficiencies and emission control standards continue to incrementally improve with each year, project construction emissions are likely to decrease nominally from what is shown in Table 3.6-3 should the construction schedule move to later years. Therefore, the construction GHG emissions contained in Table 3.6-3 represent a conservative assessment of project construction emissions. These emission estimates are provided for informational purposes.

Table 3.6-3: Construction Greenhouse Gas Emissions

Period/Source	MT CO_2e
Year 2025	2,960
Year 2026	979
Vegetation Changes	55
Total Construction Emissions	**3,994**
Emissions Amortized Over 30 Years[1]	**133**

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent
[1] Construction GHG emissions are amortized over the anticipated 30-year lifetime of the project.
Source: CalEEMod Output; see also Appendix B2 (GHG report), Table 4-5.

Because the proposed project would incorporate GHG-reducing construction BMPs for construction impacts, including the use of construction vehicles and equipment equipped with EPA Tier 4 Final compliant engines or better as a condition of contract and the recycling and reuse of construction and demolition waste, any potential impact associated with construction-generated GHG emissions would be less than significant with the implementation of feasible and applicable BAAQMD-recommended GHG-reducing construction BMPs, included herein as MM GHG-1.

As project construction would constitute a small proportion of overall project GHG emissions, and with the incorporation of feasible and applicable GHG-reducing construction BMPs, the proposed project is considered to contribute its “fair share” of GHG emission reductions during construction consistent with the legislative reduction targets codified by SB 32 and AB 1279 and the State’s long-

term climate goal of carbon neutrality by 2045. Therefore, with the implementation of MM GHG-1, project construction impacts would be less than significant.

Operation

The proposed project would contribute to global climate change through direct and indirect emissions of GHG from mobile sources (e.g., passenger vehicles, trucks), energy (e.g., purchased electricity), water use and wastewater generation, and solid waste generation. All modeling parameters utilized in the Air Quality analysis are also utilized for this GHG analysis, including but not limited to trip generation rates, trip distances, building sizes and operations, energy consumption, water consumption, and waste generation. Please refer to Appendix B2 (GHG Report) for modeling results and detailed calculations.

The unmitigated GHG emissions associated with full operation of the proposed project, starting at operational year 2026, are shown in Table 3.6-4 for both the dry and cold storage scenarios as it is not yet undetermined whether cold storage would be a part of the proposed project. It should be noted that these emission estimates are conservative as the modeling does not incorporate emission reductions that would be achieved through air quality mitigation included in Section 3.2 of this EIR. In Table 3.6-4, Area emissions include the standard use of gasoline powered landscaping equipment; Buildings emissions include the use of electricity; On-Road Mobile Vehicles emissions include trucks, passenger vehicles, and TRUs (in the cold storage scenario); On-site Mobile Equipment emissions include yard trucks and standardly used diesel-powered forklifts; and Stationary Equipment emissions include emergency generators and fire pumps. For more detail, refer to Appendix B2 (GHG Report), Table 4-13. The land use-based emission estimates are included for informational purposes. The stationary source emissions are below the BAAQMD's threshold of significance for stationary sources.

Table 3.6-4: Unmitigated Operational GHG Emissions

Source	Dry Storage Scenario	Cold Storage Scenario
	MT CO_2e/year	
Area	30	30
Buildings	701	1,435
On-road Mobile Vehicles	19,463	21,994
On-site Mobile Equipment	1,501	1,501
Water	727	727
Solid Waste	604	604
Refrigerants	0	5,095
Stationary Equipment	48	48
Totals	**23,074**	**31,434**

Source	Dry Storage Scenario	Cold Storage Scenario
	MT CO_2e/year	

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent
* Operational natural gas usage rates are expected to be zero as it is omitted as part of project design.
* The installation of light-duty electric vehicle charging stations is assumed as it is part of project design.
Refrigerant emissions were scaled down to reflect the maximum global warming potential (GWP) allowed under SB-1206 (2022) which prohibits the sale of refrigerants with GWP greater than 2,200 beginning in 2025.
Source: CalEEMod; see also Appendix B2 (GHG Report), Table 4-13.

Implementation of some of the air quality mitigation measures would also result in changes in GHG emissions by reducing the consumption of fossil fuel and increasing the electricity used during Project operations. These air quality mitigation measures considered in the mitigated scenario, presented in Table 3.6-5, include MM AIR-2e, MM AIR-2f, MM AIR-2h, and MM AIR-2i. As shown in Table 3.6-5, under both the dry and cold storage scenarios, GHG emissions are noticeably reduced.

Table 3.6-5: Mitigated Operational GHG Emissions

Source	Dry Storage Scenario	Cold Storage Scenario
	MT CO_2e/year	
Area	1	1
Buildings	701	1,435
On-road Mobile Vehicles	19,237	20,029
On-site Mobile Equipment	853	853
Water	727	727
Solid Waste	604	604
Refrigerants	0	5,095
Stationary Equipment	48	48
Totals	**22,177**	**28,897**

Notes:
MT CO_2e = metric tons of carbon dioxide equivalent
- Operational natural gas usage rates are expected to be zero as it is omitted as part of project design.
- The installation of light-duty electric vehicle charging stations is assumed as it is part of project design.
- Refrigerant emissions were scaled down to reflect the maximum global warming potential (GWP) allowed under SB-1206 (2022) which prohibits the sale of refrigerants with GWP greater than 2,200 beginning in 2025.

Source: CalEEMod; see also Appendix B2 (GHG Report), Table 4-18.

As previously discussed, BAAQMD's 2022 GHG significance thresholds, as adapted by the City, represent a method for determining whether the proposed project would be cumulatively considerable or whether the proposed project contributes to solving the cumulative problem of climate change, taking into consideration the State's long-term climate goal of carbon neutrality by 2045. As such, BAAQMD's 2022 GHG significance thresholds reflect California's current short-term

climate goal of reducing Statewide emissions by 40 percent below 1990 levels by 2030 as well as California's long-term climate goal of achieving carbon neutrality by 2045. Therefore, the proposed project is analyzed herein against BAAQMD's 2022 GHG significance thresholds (as adapted) to determine whether potentially significant impacts related to GHG emissions would occur.

As explained earlier, BAAQMD's 2022 GHG significance thresholds identify two pathways for determining consistency with the State's climate goals: demonstrating project consistency with a qualified GHG reduction strategy under CEQA Section 15183.5(b) or ensuring that the proposed project incorporates design and operational features that support the region and State's adoption of EVs, facilitate reductions in project-generated VMT, and preclude the use of legacy emission sources such as natural gas.

Criterion A

Natural Gas Prohibition Provision

The first provision requires that the proposed project not include natural gas plumbing and instead rely on electricity as the primary building energy source. The proposed project would not include the use of natural gas appliances or the installation of natural gas plumbing (see Section 2.2.6).

Here, the project applicant is voluntarily foregoing the use of natural gas. Emission estimates contained in the above tables reflect the proposed project's prohibition of natural gas and, accordingly, present the results of emissions associated with electricity usage required to replace natural gas. Thus, the proposed project would be compliant with this provision of Criterion A.

Wasteful, Inefficient, or Unnecessary Electricity Consumption Provision

The second provision of BAAQMD's proposed 2022 GHG significance thresholds requires that electricity consumption would not be considered wasteful, inefficient, or unnecessary. As discussed in greater detail under Impact GHG-3, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Notably, this provision specifically refers to electricity consumption as opposed to the consumption of general energy resources. The proposed project would be required to be constructed compliant with the California Building Code Title 24 requirements, which requires that new buildings be designed to accommodate future rooftop solar systems among other energy conservation and energy efficiency standards. As such, the proposed project would be designed to accommodate the future use of on-site renewable energy and would not by design preclude the use of EVs or renewable energy sources. Moreover, natural gas would not be used during project operation, thereby reducing project dependence on fossil fuels and removing legacy GHG emission sources in contributing to achieving the State's long-term climate goal of carbon neutrality by 2045.

Nonetheless, the proposed project, according to its land use type, could consume up to an estimated 27,873 MWh per year under the dry storage scenario and 56,761 MWh electricity per year under the cold storage scenario during operation (see Appendix B2 [GHG Report], Table 4-11), as discussed in greater detail under Impact GHG-3, with proposed buildings constructed to at least the minimum energy efficiency standards contained in the California Building Code. Moreover, until California's electricity grid is 100 percent generated from renewable and carbon-free sources in 2045, the

proposed project's electricity consumption would result in additional demand of fossil fuel resources for electricity generation. Such fossil fuel usage would be substantially reduced by MMs GHG-1 and MM AIR-2e, MM AIR-2f, MM AIR-2h, and MM AIR-2i, which would require the use of numerous construction BMPs to reduce GHG emissions, require that each loading dock be outfitted with external power sources and connectors for TRUs, and require that all forklifts operating on the project be electric. Based on these measures, the proposed project would not result in building electricity consumption that is wasteful, inefficient, or unnecessary.

Electric Vehicle Charging Infrastructure Provision

The third provision of BAAQMD's proposed 2022 GHG significance thresholds requires that the proposed project achieve compliance with the EV charging infrastructure standards contained in the Tier 2 requirements of CALGreen. As described in Chapter 2 Project Description, Section 2.2.9, the proposed project would include California Green Building Code compliant EV charging stations. In addition to Tier 2 EV charging requirements for passenger vehicles, the project would also be required to include infrastructure at loading spaces to facilitate future installation of electric medium-duty and heavy-duty electric vehicle supply equipment (EVSE) in accordance with CALGreen Section 5.106.5.4. Overall, the proposed project would be compliant with the BAAQMD's provision on the compliance with CALGreen Tier 2 EV charging requirements.

Vehicle Miles Traveled Provision

Lastly, the fourth provision of BAAQMD's proposed 2022 GHG significance thresholds requires a 15 percent decrease below existing VMT per capita for residential projects, a 15 percent decrease below existing VMT per employee for office projects, and a no net increase in existing VMT for retail projects. As previously stated, this analysis will conservatively follow BAAQMD's approach for office projects—15 percent below the existing VMT per employee—as the starting point for assessing VMT for industrial uses. Because the BAAQMD threshold for office projects focuses on only one type of vehicle trip—employee trips—the VMT analysis also focuses on employee trips only.

As described in the Transportation analysis in Section 3, a VMT analysis for the proposed project was conducted in accordance with the recommendations in the Suisun City SB 743 Implementation Summary of Findings and Recommendations for VMT-Based CEQAS Thresholds technical memorandum. The City of Fairfield Travel Forecast Model was used to estimate VMT for the proposed project.

Within the City of Fairfield model, the proposed project site initially had an estimated daily trip generation of 9,110 trips. As such, a Fratar process was implemented to adjust the model-generated daily trips of the project to be more aligned with the projected number of daily trips for the proposed project per the ITE trip rate. With the Fratar adjustments, the VMT per employee was calculated on a consistent number of vehicle trips based on an ITE trip generation projection and the project trip distribution and trip lengths from the City of Fairfield model.

Exclusion of Heavy Truck Trips

According to the City's Guidelines, heavy truck trips should be excluded in CEQA SB743 VMT analysis. Consequently, the target total daily estimate project trips of 3,726 for the Fratar process was adjusted to 3,253, which deducted 473 daily truck trips. The results of the VMT analysis indicated

that the VMT per employee was 14.5 during the base year 2020. The VMT per employee for the year 2035 was 13.6.

The average 2020 (Base Year) VMT per employee for home-based work trips is 14.8 miles; 15 percent less than this figure would result in a VMT threshold of 12.6. For 2035 (Year with the Proposed Project), the average VMT per employee is projected to be 13.7, so the threshold of 15 percent less than this figure would be 11.7 VMT per employee. The proposed project's VMT per employee would not be less than the threshold of 15 percent below the citywide average, thus the proposed project has a potentially significant VMT impact based on the City's VMT Guidelines and threshold criteria.

VMT reduction measures were identified in MM TRANS-2a and would have the potential to reduce VMT by 5.6 percent, reducing the proposed project's VMT to 13.7 VMT per employee for 2020 and 12.8 VMT per employee for 2035. These reduced values are still greater than the City's thresholds of 12.6 and 11.7 VMT per employee for 2020 and 2035, respectively, and therefore VMT impacts were found to be significant and unavoidable.

Accordingly, the proposed project would be inconsistent with the final design element in Criteria A of the BAAQMD thresholds.

Criterion A Conclusion

Considering the above assessment, the project operation would be inconsistent with BAAQMD's Criterion A and, therefore, with BAAQMD's proposed 2022 GHG significance thresholds as adapted to this industrial project by the City pursuant to its discretion as CEQA lead agency. As such, with project design features and mitigation, the project operation would have a significant impact related to GHG emissions.

Criterion B

As previously mentioned, the City does not have an adopted CAP that meets the requirements to be considered a qualified GHG reduction strategy capable of being tiered from under CEQA Guidelines Section 15183.5(b). Therefore, the proposed project is not capable of satisfying Criterion B from the above 2022 GHG significance thresholds and must therefore demonstrate consistency with the provisions of Criterion A to determine a less than significant impact related to GHG emissions, which it does not.

Conclusion

The proposed project would generate GHG emissions during construction and operation. BAAQMD and the City do not have an emissions threshold for determining potentially significant impacts related to construction GHG emissions; therefore, BAAQMD's recommended GHG-reducing BMPs were utilized as the basis for determining the proposed project's construction-related impact. The proposed project would include feasible and applicable GHG-reducing BMPs during construction, as documented in MM GHG-1.

As it relates to operational-related GHG emissions, the proposed project is inconsistent with the VMT design element of BAAQMD's GHG significance thresholds, specifically Criterion A. As a result, the proposed project's operational GHG emissions impacts could have potentially significant impacts. MM GHG-1 would reduce construction-related GHG emissions; however, it would not reduce operational-related GHG emissions. MM TRANS-2a would be implemented to reduce VMT; however, impacts would not be reduced to a less than significant impact. Therefore, impacts would remain significant and unavoidable even after implementation of all feasible mitigation measures.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement MM GHG-1:

MM GHG-1 Prior to the issuance of any grading permits, the project applicant shall provide the Suisun City Planning Department with documentation (e.g., site plans) demonstrating project construction will include the following feasible and applicable construction Best Management Practices (BMPs):

- Require all diesel-fueled off-road construction equipment greater than 50 horsepower be equipped with United States Environmental Protection Agency (EPA) Tier 4 Final compliant engines or better as a condition of contract. (See Mitigation Measure [MM] AIR-2a).
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the State Airborne Toxics Control Measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure. (See MM AIR-2c).
- Prohibit off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Require that all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation. (See MM AIR-2c).
- Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15 percent more by weight than the diversion requirement in Title 24.
- Use low carbon concrete, minimize the amount of concrete used and produce concrete on-site if it is more efficient and lower emitting than transporting ready-mix.
- Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.

Implement MM TRANS-2a.

Level of Significance After Mitigation

Significant unavoidable impact.

Conflict with Plan, Policy, or Regulation that Reduces Emissions

Impact GHG-2:	**The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.**

Impact Analysis

The following discusses project consistency with applicable plans adopted to reduce GHG emissions, including the City's General Plan, the Solano County CAP, MTC/ABAG Plan Bay Area 2050/Sustainable Communities Strategies, and the ARB's 2017 and 2022 Scoping Plans.

California Air Resources Board Scoping Plan

On December 15, 2022, nearly two years after the January 2021 publication of the Notice of Preparation (NOP) for the proposed project, the ARB adopted an updated 2022 Scoping Plan. The 2022 Scoping Plan reflects the addition of climate legislation and executive orders issued since the adoption of the 2017 Scoping Plan.

Appendix D of the 2022 Scoping Plan states that a development project can determine consistency with the Scoping Plan by using significance criteria from an air district or other lead agencies if the criteria align with the State's current GHG emission reduction goals. Because the BAAQMD's current GHG significance criteria were created to determine a project's "fair share" of what is necessary to meet California's 2045 climate goals, the criteria are sufficient to determine consistency with the 2022 Scoping Plan. Based on evaluation in Section 5, because the proposed project is consistent with the BAAQMD's CEQA significance criteria for building and transportation design features (as adapted by the City to apply to this industrial project), the proposed project would also be consistent with the 2022 Scoping Plan.

The proposed project would be consistent with key State plans and regulatory requirements referenced in the 2022 Scoping Plan Update designed to reduce Statewide emissions. According to the 2022 Scoping Plan Update, reductions needed to achieve the 2045 target are expected to be achieved by decarbonizing the electricity sector, greatly increasing the fuel economy of vehicles and the number of zero-emission or hybrid vehicles, reducing the rate of growth in VMT, supporting high speed rail and other alternative transportation options, and increasing the use of high efficiency appliances, water heaters, and heating, ventilation, and air conditioning (HVAC) systems. The proposed project would not impede with these potential reduction strategies identified by the ARB. The proposed project would also benefit from Statewide and utility-provider efforts toward increasing the portion of electricity generated by renewable resources, increasing fuel economy standards for vehicles, and reducing carbon content of fuels. The proposed project would utilize energy efficient appliances and equipment, as required by Title 24, and provide electric vehicle charging infrastructure to support the current and future use of electric and hybrid-electric vehicles

for employee travel. For these reasons, the proposed project would be consistent with the objectives of the 2022 Scoping Plan Update.

Transportation Sector

Trucks

In general, the State strategy for the transportation sector for medium- and heavy-duty trucks focuses on making trucks more efficient and expediting truck turnover. Emissions associated with heavy-duty trucks involved in goods movements are generally controlled on the technology side and through fleet turnover of older trucks and engines to newer and cleaner trucks and engines. The following State strategies reduce GHG emissions from medium- and heavy-duty trucks:

- ARB's Mobile Source Strategy focuses on reducing GHGs by transitioning to zero and low emission vehicles and from medium-duty and heavy-duty trucks.[92]
- ARB's Sustainable Freight Action Plan establishes a goal to improve freight efficiency by 25 percent by 2030, deploy over 100,000 freight vehicles and equipment capable of zero-emission operation, and maximize both zero and near zero-emission freight vehicles and equipment powered by renewable energy by 2030.[93]
- ARB's Truck and Bus Regulation requires diesel-fueled trucks and buses that operate in California to be upgraded to reduce emissions.
- ARB's Emissions Reduction Plan for Ports and Goods Movement (Goods Movement Plan) in California focuses on reducing heavy-duty truck-related emissions and the establishment of emissions standards for trucks, fleet turnover, truck retrofits, and restriction on truck idling.[94] While the focus of the Goods Movement Plan is to reduce criteria air pollutant and air toxic emissions, the strategies to reduce these pollutants would also generally have a beneficial effect in reducing GHG emissions.

The proposed project would be subject to the above trucking and freight regulations. Thus, these strategies would contribute to controlling heavy-duty truck GHG emissions associated with the proposed project. The proposed project would not conflict with or inhibit these Statewide strategies. Any on-site trucks would be required to comply with ARB's Heavy-Duty (Tractor-Trailer) GHG Regulation, which requires SmartWay tractor trailers that include idle-reduction technologies, aerodynamic technologies, and low-rolling resistant tires that would reduce fuel consumption and associated GHG emissions. Furthermore, truck manufacturers would be required to comply with the ARB ACT Rule, which requires manufacturers of medium- and heavy-duty trucks and vans to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. Under the ACT Rule, by 2035, zero-emission truck/chassis sales would need to be 55 percent of Class 2b to Class 3 truck sales, 75 percent of Class 4 to Class 8 straight truck sales, and 40 percent of truck tractor sales.[95] As the proposed project would not include any feature or design which would

[92] California Air Resources Board (ARB). 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target.
[93] Ibid.
[94] California Air Resources Board (ARB). 2006. Emission Reduction Plan for Ports and Goods Movement in California. April 20.
[95] California Air Resources Board (ARB). 2020. Advanced Clean Trucks: Accelerating Zero-Emission Truck Markets. June 25. Website: https://ww2.arb.ca.gov/sites/default/files/2020-06/200625factsheet_ADA.pdf. Accessed February 9, 2023.

prohibit the implementation of these vehicle emission standards, the proposed project would be consistent with these requirements.

Passenger Vehicles

Statewide strategies to reduce GHG emissions from passenger vehicles and the transportation sector in general include the LCFS and changes in the CAFE Standards (e.g., Pavley I and Pavley California Advanced Clean Cars program). Furthermore, Executive Order N-79-20 would require that 100 percent of new passenger cars and trucks sold in California be zero-emission by 2035, which would indirectly contribute to the extent of EV utilization in the proposed project's passenger vehicle fleet beyond 2035. As the proposed project would not include any feature or design which would prohibit the implementation of these vehicle emission standards, the proposed project would be consistent with these requirements.

Energy Sector

Energy use generated by the proposed project generally represents the second largest source of emissions after considering mobile source GHG emissions. New buildings under the proposed project would meet the current CALGreen and Building Energy Efficiency Standards. The proposed project would include roof structures designed to accommodate additional weight for rooftop photovoltaic electricity generation panel arrays (provided they are compatible with Travis Air Force Base aviation operations). Moreover, the proposed project would be sourcing electricity from on-site generation sources and/or utility providers in the State. As such, the proposed project would meet the requirements contained in the 2019 California Building Code and would be consistent with the State's current CALGreen and Building Energy Efficiency Standards and the State's renewable energy legislation, SB 100.

Other Sources

Other sources of GHG emissions include solid waste disposal, which is associated with landfilling municipal solid waste. The amount of methane emitted to the atmosphere as a fraction of the total amount of methane generated from the decomposition of accumulated waste has gradually declined over time as more landfills install landfill gas collection and control systems and existing systems are operated more efficiently as a result of ARB's Landfill Methane Control Measure.[96] Because the proposed project would be served by a waste collector which would be subject to this requirement, the proposed project would be consistent with the State's goals for the recycling and waste sector.

Metropolitan Transportation Commission/Association of Bay Area Governments Plan Bay Area

As part of the implementing framework for MTC/ABAG Plan Bay Area 2050/SCS, local governments have identified planned development areas to focus growth. The project site is within the Travis Airforce Base Land Use Compatibility Plan area. Thus, the proposed project would be consistent with the overall goals of Plan Bay Area, which includes concentrating new investment in areas that would encourage job growth. In addition, the proposed project would be developed in an area with existing infrastructure. Table 3.6-6 lists the applicable and relevant objectives of the MTC/ABAG Plan Bay Area 2050/SCS and analyzes how the proposed project would conflict or be consistent with these

[96] California Air Resources Board (ARB). 2020. Advanced Clean Trucks: Accelerating Zero-Emission Truck Markets. June 25. Website: https://ww2.arb.ca.gov/sites/default/files/2020-06/200625factsheet_ADA.pdf. Accessed February 9, 2023.

objectives. For more detail on inapplicable goals and objectives, refer to Appendix B2 (GHG Report), Table 6-1.

Table 3.6-6: Consistency with MTC/ABAG Plan Bay Area 2050/Sustainable Communities Strategy

Strategy	Objective	Consistency Analysis
Economic	**EC2.** Expand job training and incubator programs. Fund assistance programs for establishing new businesses, as well as job training programs, primarily in historically disinvested communities.	**Inapplicable but Consistent**. Although this goal is not applicable to an individual commercial development project, the proposed project would generate new jobs for the surrounding community and is accessible via nearby public transit, which provides a low-cost option for commuting.
	EC5. Provide incentives to employers to shift jobs to housing-rich areas well served by transit. Provide subsidies to encourage employers to relocate offices to housing-rich areas near regional rail stations.	**Inapplicable but Consistent**. Although the vicinity is not categorized as a priority development area, the proposed project would create new jobs near housing-rich areas and is located less than 0.5 mile from public transit stops. Therefore, the proposed project would create jobs that are accessible via public transit.
Transportation	**T8.** Build a Complete Streets network. Enhance streets to promote walking, biking and other micro-mobility through sidewalk improvements, car-free slow streets, and 10,000 miles of bike lanes or multiuse paths.	**Consistent**. The proposed project would provide new and improved sidewalks on Walters and Petersen Road frontages.
Environmental	**EN4**. Maintain urban growth boundaries. Using urban growth boundaries and other existing environmental protections, focus new development within the existing urban footprint or areas otherwise suitable for growth, as established by local jurisdictions. **EN5**. Protect and manage high-value conservation lands. Provide strategic matching funds to help conserve and maintain high-priority natural and agricultural lands, including, but not limited to, Priority Conservation Areas and wildland-urban interface areas. **EN6**. Modernize and expand parks, trails and recreation facilities. Invest in quality parks, trails and open spaces that provide inclusive recreation opportunities for people of all backgrounds, abilities and ages to enjoy.	**Consistent.** The proposed project would continue to preserve approximately 47 acres of open space, part of which is protected by a conservation easement containing wetlands and suitable for livestock grazing.

Strategy	Objective	Consistency Analysis
	EN7. Expand commute trip reduction programs at major employers. Set a sustainable commute target for major employers as part of an expanded Bay Area Commuter Benefits Program, with employers responsible for funding incentives and disincentives to shift auto commuters to any combination of telecommuting, transit, walking and/or bicycling.	**Consistent.** The proposed project would result in the preparation of a Transportation Demand Management (TDM) plan (see MM TRANS-2a), which would reduce commute trips through various measures, such as establishing vanpool programs and providing on-site infrastructures for bikers and pedestrians.
	EN8. Expand clean vehicle initiatives. Expand investments in clean vehicles, including more fuel-efficient vehicles and electric vehicle subsidies and chargers.	**Consistent.** The proposed project would meet CALGreen Tier 2 electric vehicle charging requirements (see Section 2.2.9).
	EN9. Expand transportation demand management initiatives. Expand investments in programs like vanpools, bikeshare, carshare and parking fees to discourage solo driving.	**Consistent.** The proposed project would result in the preparation of a TDM plan (see above).
Source: Metropolitan Transportation Commission (MTC)/Association of Bay Area Governments (ABAG). 2021. Plan Bay Area 2050. October 2021. See also Appendix B (GHG Report), Table 6-1.		

Thus, as demonstrated just above, the proposed project would not conflict with the (MTC/ABAG) Plan Bay Area 2050/Sustainable Communities Strategies.

Solano County Climate Action Plan

As previously discussed, the City has not adopted a CAP. However, Solano County adopted a CAP in June 2011 to address climate change and reduce the community's GHG emissions at the local level. If the Solano County Local Agency Formation Commission LAFCo approves the proposed annexation associated with the proposed project, thereby bringing the subject property into the City, the Solano County CAP would not apply to the proposed project. Even so, Table 3.6-7 lists the relevant objectives and measures of the County's CAP that would apply to the proposed project if it stayed in the County's unincorporated area and analyzes how the proposed project would or would not conflict or be consistent with the CAP and those relevant measures. For more detail on inapplicable County CAP measures, refer to Appendix B2 (GHG Report), Table 6-2.

Table 3.6-7: Consistency with Solano County Climate Action Plan

Type	CAP Objective/Measure	Consistency Analysis
Energy and Efficiency	**Objective**: Minimize energy consumption, increase energy efficiencies, and transition to clean renewable energy sources.	**Consistent**. The proposed project would be designed in compliance with the 2019 California Building Code and would implement the most current set of energy efficiency requirements.
	Measure E-1: Investigate the potential to establish a countywide community choice aggregation program and increase the community's use of locally produced renewable energy.	**Inapplicable but Consistent**. This measure does not apply to individual developments.
	Measure E-3: Develop a comprehensive energy efficiency program that provides outreach, financing, and other forms of assistance to residential, commercial, agricultural, and industrial uses. **Measure E-4:** Adopt green building and energy efficiency ordinances to require green building practices, programs and design elements.	**Inapplicable but Consistent**. Although these measures do not apply to individual developments, the proposed project's buildings are subject to the energy efficiency standards in the most recent (2022) Title 24 Energy Code.
Transportation and Land Use	**Objective:** Support a transportation system and land use pattern that promotes carpooling, walking, biking, and using public transit.	**Consistent**. The proposed project would include an internal pedestrian network, including, but not limited to, 10-footwide sidewalks along the proposed project's frontage along Petersen Road. Through Suisun City's design review process, the sidewalks that are either improved or provided along the project frontages of Walter Road and Petersen Road would be designed in accordance with the City's design guidelines. As such, the proposed project would support a transportation system which promotes alternative modes of transportation.
	Measure TC-1: Solano County will work with STA to enhance countywide rideshare infrastructure and services. **Measure TC-2:** Work with STA to increase public transit ridership by expanding	**Inapplicable but Consistent**. Although these measures do not apply to individual developments, the proposed project would implement a

Type	CAP Objective/Measure	Consistency Analysis
	express bus service and improving transit stop amenities and transit connections. **Measure TC-3:** Work with cities and STA to improve bicycle and pedestrian connectivity in the county.	Transportation Demand Management (TDM) plan (see Mitigation Measure [MM] TRANS-2a), which would reduce commute trips through various measures, such as establishing vanpool programs and providing on-site infrastructures for bikers and pedestrians.
	Measure TC-4: Educate residents and businesses about options to reduce motor vehicle emissions.	**Inapplicable but Consistent**. Although this measure does not apply to individual developments, the proposed project would implement various air quality mitigation measures that reduce motor vehicle emissions.
	Measure LU-1: Protect and preserve forested areas, agricultural lands, wildlife habitat, and wetlands that provide carbon sequestration.	**Consistent**. The proposed project would continue to preserve approximately 47 acres of open space, part of which is currently protected by a conservation easement that contains wetlands and is suitable for livestock grazing.
Waste Reduction and Recycling	**Measure W-2:** Work with Solano County water providers, including representatives for well users that share water with their neighbors for residential water use, to expand and promote outreach programs and incentives for water conservation.	**Consistent**. Construction of the proposed project is subject to the City's ordinance, which requires compliance with CALGreen recycling requirements, including the 65 percent recycling and reuse rate of construction debris.
Source: Solano County. 2011. Climate Action Plan. Website: https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=10080. Accessed February 9, 2023. See also Appendix B (GHG Report), Table 6-2.		

As discussed in Table 3.6-7, the proposed project includes features that would contribute to the County's strategy to minimize GHG emissions. With these features, the proposed project would not conflict with the applicable objectives and measures within the Solano County CAP.

Suisun City General Plan

As previously discussed, the City has not adopted a CAP. However, the City's General Plan contains several policies which intend to address climate change and reduce the community's GHG emissions at the local level. A comprehensive consistency analysis is provided in Table 3.9-2 in Section 3.9, Land

Use. As indicated in that table, the proposed project is consistent with applicable goals, objectives, and policies.

Accordingly, as demonstrated in the above analysis, the proposed project would not conflict with any applicable plan, policy, or regulation adopted to reduce GHG emissions. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Energy Consumption

Impact GHG-3:	**The proposed project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.**

Impact Analysis

A significant impact would occur if the proposed project would result in the inefficient, wasteful, or unnecessary use of energy.

Construction

The anticipated construction schedule for the proposed project was assumed to begin in 2025 and conclude in 2026, lasting approximately 18 months. If the anticipated construction schedule moves to later years, construction energy demand would likely decrease because of improvements in technology and more stringent regulatory requirements as older, less efficient equipment is replaced by newer and cleaner equipment. The proposed project would require site preparation, grading, building construction, architectural coating, and paving activities. Project construction would require energy for the manufacture and transportation of building materials, preparation of the site (e.g., site clearing, and grading), and the actual construction of the buildings. Petroleum-based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks.

The types of on-site equipment used during the proposed project's construction could include gasoline- and diesel-powered construction and transportation equipment, including trucks, bulldozers, front-end loaders, forklifts, and cranes. Construction equipment is estimated to consume approximately 131,900 gallons of diesel fuel over the entire construction duration (Appendix B3 [Energy Report]).

Fuel use associated with construction vehicle trips generated by the proposed project was also estimated; trips include construction worker trips, haul truck trips for material transport, and vendor trips for construction material deliveries. Fuel use from these vehicles traveling to the project site

was based on (1) the projected number of trips the proposed project would generate during construction, (2) average trip distances by trip type, and (3) fuel efficiencies estimated in the ARB Emissions Factors model (EMFAC) mobile source emission model. The specific parameters used to estimate fuel usage are included in Appendix B3 (Energy Report). In total, the proposed project is estimated to consume approximately 84,900,000 gallons of gasoline and 7,200,000 gallons of diesel for vehicle travel during construction. For any given construction year, the estimated fuel use would be less than 0.5 percent of the gasoline and less than 0.4 percent of the diesel fuel production in Northern California region in 2022.

Other equipment could include construction lighting, field services (office trailers), and electrically driven equipment such as pumps and other tools. The project construction would consume approximately 0.9 MWh of electricity in total (Appendix B3 [Energy Report]). The electricity demand associated with construction of the proposed project would be supplied by the existing grid, if available. In the event of an emergency or during a power outage, the use of generator sets would be permissible. Therefore, relatively negligible impacts to energy demand would be expected as a result of the proposed project's construction activities.

The proposed project's construction activities would involve standard grading and building practices are not anticipated to result in unusually high energy use. Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. Similarly, compliance with State regulations would limit idling from both on-road and off-road diesel-powered equipment and are enforced by the ARB. Additionally, the overall construction schedule and process is already designed to be efficient to avoid excess monetary costs. For example, equipment and fuel are not typically used wastefully due to the added expense associated with renting the equipment, maintaining it, and fueling it. In addition, MM GHG-1 requires the proposed project to implement feasible and applicable construction BMPs, such as minimizing idling time and properly tuning and maintaining construction equipment.

Therefore, project construction would not require more fuel or electricity compared to construction of similar scales, would have minimal impacts on local and regional energy supplies including fuel production and peak and base period electricity demand, and would comply with existing energy standards. Therefore, it is anticipated that the construction phase of the proposed project would not result in wasteful, inefficient, and unnecessary consumption of energy. Construction-related energy impacts would be less than significant.

Operation

The proposed project would consume energy as part of building operations and transportation activities. Unmitigated project energy consumption is summarized in Table 3.6-8, and mitigated project energy consumption is summarized in Table 3.6-9.

Table 3.6-8: Unmitigated Annual Project Energy Consumption

Energy Consumption Activity	Annual Consumption		
	Electricity MWh	Gasoline gallons	Diesel gallons
Cold Storage			
Mobile	280	536,283	1,114,228
TRU Operations	–	–	204,644
On-site Equipment	–	–	147,416
Buildings	56,481	–	–
Landscaping Equipment	–	4,896	–
Stationary Sources	–	-	4,611
Total	56,761	541,178	1,470,899
Dry Storage			
Mobile	280	536,283	1,114,228
On-site Equipment	–	–	147,416
Buildings	27,593	–	–
Landscaping Equipment	–	4,896	–
Stationary	–	–	4,611
Total	27,873	541,178	1,266,255

Notes:
MWh = megawatt-hour
TRU = Transport Transportation Unit
Source: Appendix B3 (Energy Report), Table 5-2.

Table 3.6-9: Mitigated Annual Project Energy Consumption

Energy Consumption Activity	Annual Consumption		
	Electricity MWh	Gasoline gallons	Diesel gallons
Cold Storage			
Mobile	280	536,283	1,114,228
TRU Operations	4,145	–	64,058
On-site Equipment	1,472	–	92,103
Buildings	56,481	–	–
Landscaping Equipment	40	–	–
Stationary Sources	–	–	4,611
Total	62,418	536,283	1,275,000

Energy Consumption Activity	Annual Consumption		
	Electricity MWh	Gasoline gallons	Diesel gallons
Dry Storage			
Mobile	280	536,283	1,114,228
On-site Equipment	1,472	–	92,103
Buildings	27,593	–	–
Landscaping Equipment	40	–	–
Stationary	–	–	4,611
Total	29,384	536,283	1,210,942

Notes:
MWh = megawatt-hour
TRU = Transport Transportation Unit
Source: Appendix B3 (Energy Report), Table 5-2

As summarized in Table 3.6-8 and Table 3.6-9, operations of the proposed project would consume less than 0.02 percent of gasoline and less than 0.08 percent of diesel produced in 2022 in Northern California, would consume about 0.02 percent of Statewide electricity demand, and would create a negligible demand on the peak grid demand. Furthermore, the proposed project would not consume any natural gas. The proposed project's buildings would be designed and constructed in accordance with the State's latest Building Energy Efficiency Standards. The proposed project would also provide more electrical vehicle charging spaces than the minimum code requirements. The State's Building Energy Efficiency Standards are widely regarded as some of the most advanced building energy efficiency standards in the country, and compliance would ensure that building energy consumption would not be wasteful, inefficient, or unnecessary.

With the implementation of project features and air quality mitigation measures (MM AIR-2e, MM AIR-2h, and MM AIR-2i), the proposed project would reduce its reliance on fossil fuels and increase its reliance on renewable energy sources. These project features and mitigation measures would increase the proposed project's use of electricity provided from the grid by PG&E, 38 percent of which is sourced from renewable energy sources, 8 percent of which is sourced from large hydroelectric, and 49 percent of which is from nuclear power.[97] To accomplish the same functions of the project (e.g., maintaining TRU temperatures when docking), electrifying the proposed project's operations would rely more on renewable energy sources than fossil fuels. In addition, the proposed project would include solar photovoltaic systems as a renewable energy features if such facilities are determined not to create potential hazards for Travis Air Force Base's operations.

Project-related vehicle trips would consume fuel throughout the life of the proposed project due to employee vehicles, delivery vehicles, and heavy-duty trucks. This analysis evaluated operational fuel

[97] Pacific Gas and Electric Company (PG&E). 2022. 2022 Power Content Label. Available at: https://www.pge.com/content/dam/pge/docs/account/billing-and-assistance/bill-inserts/1023-Power-Content-Label.pdf. Accessed December 2023.

consumption based on the proposed project's operational assumptions, which include heavy-duty truck operation. Gasoline and diesel fuel usage for the proposed project from mobile sources, as shown in Table 3.6-8 and Table 3.6-9, would decrease over time as fleets become more fuel efficient and switch to more electric vehicles. In addition, diesel fuel usage for TRUs installed on the heavy-duty trucks accessing the project site would be subject to Executive Order N-79-20 and the subsequent rulemaking to transition truck TRUs to zero-emission. Therefore, diesel fuel usage for TRUs would also decrease over time.

Regional access to the project site is provided by Petersen Road and Walters Road connecting to State Route (SR) 12, which is approximately 30 feet from the project site. The proposed project is located near regional and local roadways that would provide convenient access for future employees. Thus, transportation fuel consumption would not be wasteful, inefficient, or unnecessary. Impacts would be less than significant.

Notably, the applicant has committed to install solar photovoltaic systems in the proposed project if such systems prove to be feasible despite the proposed project site's close proximity to the Travis Air Force Base (TAFB). The feasibility of such systems, however, cannot be determined at the current, relatively early stage of the planning process, but rather must be deferred until the subsequent design stage. The issue to be resolved at that time would be whether photovoltaic systems would create glint and glare hazards for TAFB, which would be inconsistent with Travis Air Force Base's Land Use Compatibility Plan. During the design phase, the applicant and City of Suisun would conduct modeling pursuant to the Solar Glare Hazard Analysis Tool (SGHAT) model developed by Sandia National Laboratories in order to assess the amount of glint and glare that photovoltaic systems might produce and whether such glint and glare could create problems either in an existing or planned Airport Traffic Control Tower cab at TAFB or within or along the final approach path for any existing landing threshold or future landing threshold (including any planned interim phases of the landing thresholds) as shown on the Layout Plan for Travis AFB. The modeling could also be used to modify proposed systems to eliminate any potential glint and glare problems. No commercial scale solar facilities could be installed, however, without review by the Solano County Airport Land Use Commission pursuant to Section 5.6 of the Travis Air Force Base's Land Use Compatibility Plan.[98]

Overall, the proposed project's operations would not create inefficient or wasteful energy use including those for the transportation sources, would incorporate renewable energy resources when feasible, would not create substantial demands on local and regional energy supplies, and would comply with existing energy standards. The proposed project's operations would not result in any potentially significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Appendix B3 (Energy Report) contains detailed impact evaluation based on guidance provided in Appendix F of the CEQA Guidelines,

Level of Significance Before Mitigation

Less than significant impact.

[98] Environmental Science Associates (ESA). 2023. Suisun Logistics Center – Travis Air Force Base Land Use Compatibility Plan Consistency Evaluation. October 18.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Conflict with Plan for Renewable Energy or Energy Efficiency

Impact GHG-4:	**The proposed project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency?**

Impact Analysis

A significant impact would occur if the proposed project conflicts with or obstructs a State or local plan for renewable energy or energy efficiency. Therefore, a significant impact would occur if the proposed project were considered inconsistent with applicable plans adopted to promote or improve energy efficiency or renewable energy, including the City's General Plan and the Solano County CAP.

The proposed project would be designed in accordance with Title 24, California's Energy Efficiency Standards for Nonresidential Buildings techniques and practices. These standards include minimum energy efficiency requirements related to building envelope, mechanical systems (e.g., HVAC and water heating systems), and indoor and outdoor lighting. Incorporating the Title 24 standards into the proposed project's design would ensure that the proposed project would not result in the use of energy in a wasteful manner. Furthermore, the proposed project would have roof structures designed to accommodate additional weight for rooftop photovoltaic electricity generation panel arrays, so it is possible that the proposed project could use solar electricity generation.

The Suisun City General Plan and Solano County CAP contain policies related to energy conservation that are relevant to the proposed project. As discussed in Table 3.9-2 and Table 3.6-7, the proposed project would be consistent with the energy efficiency measures contained in the City's General Plan and County's CAP.

The proposed project would comply with existing State energy standards and be consistent with the energy efficiency goals and measures contained in the City's General Plan and the County's CAP. Moreover, GHG-1 would reduce construction equipment fuel consumption through the requirement that 15 percent of equipment be alternatively fueled or electric. MM AIR-2e, MM AIR-2h, and MM AIR-2i would increase use of electricity on the site, a part of which would be generated by renewable energy sources, and would reduce reliance on fossil fuel supply.

As such, the proposed project would not conflict with State or local renewable or energy efficiency objectives. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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