

## 4.8. GREENHOUSE GAS EMISSIONS

This section includes the following discussion and analysis related to greenhouse gas emissions: existing environmental and regulatory setting; criteria and methodology for evaluating impacts; and the results of the impact assessment, including identification of potentially significant impacts and corresponding mitigation measures to avoid or substantially lessen such impacts to the extent feasible.

### ***PEIR Scoping Comments***

During the PEIR Scoping Process, the District received one letter containing a comment related to greenhouse gas emissions. The comment submitted is quoted below.

#### Leadership Counsel for Justice and Accountability

“The EIR must include an analysis of any additional greenhouse gas emissions caused by the construction and operation of this and other existing and reasonably foreseeable projects.”

[Note: The analysis of greenhouse gas emissions is contained in Section 4.8.3. *Environmental Impact Analysis* under Impact GHG-1 and GHG-2. Cumulative impacts are addressed in Section 4.8.3.3.]

### 4.8.1. Environmental Setting

The accumulation of greenhouse gases (GHGs) in the atmosphere is a causative factor in climate change. The release of GHGs creates a layer of gases around the earth which allows sunlight to pass through, but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels where they are kept in balance by natural processes such as carbon absorption by forests and oceans. These activities, which have been occurring since the beginning of the industrial age, primarily include the emission of CO<sub>2</sub> from combustion of fossil fuels (coal, petroleum, natural gas) in electrical production, transportation, industrial production, and heating. The overabundance of GHGs in the atmosphere has increased the average temperature of the atmosphere near the earth’s surface and resulted in significant changes in global climate patterns. Impacts of climate change include rising sea levels, reductions in Sierra Nevada snowpack, increases in extreme weather events, increased risk of large wildfires, and adverse changes to marine and terrestrial ecosystems.

Some GHGs are naturally occurring and are emitted through natural processes, like organic decay, while others are emitted solely from human activities. The predominant source of human-caused GHG emissions is the use of fossil fuels which produce carbon dioxide (CO<sub>2</sub>) as a byproduct of combustion. Other GHGs include methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydroflourocarbons, perfluorocarbons, and sulfur hexafluoride. Each GHG differs in its ability to absorb heat in the atmosphere. The potency of each GHG is measured in terms of “Global Warming Potential” (GWP) over a specific period, relative to CO<sub>2</sub>, which has a GWP of 1. High GWP gases include: CH<sub>4</sub> (methane) which has a GWP over 25 times greater than CO<sub>2</sub>; and N<sub>2</sub>O (nitrous oxide) with a GWP which is 298 times greater than CO<sub>2</sub>. The application of these ratios for the various GHGs allows all GHG emissions to be converted to CO<sub>2</sub> equivalents (CO<sub>2</sub>e), which allows for an accurate estimate of aggregate greenhouse effect.

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A GHG that is widely used in the electric power industry is sulfur hexafluoride (SF<sub>6</sub>), a synthetic gas with an extremely stable molecular structure and excellent insulation qualities. Since the 1950s, the U.S. electric power industry has used SF<sub>6</sub> widely in circuit breakers, gas-insulated substations, and other switchgear used in the transmission system to manage the high voltages carried between generation stations and customer load centers. Fugitive emissions of SF<sub>6</sub> can escape from gas insulated substations and switchgear through seals and can also be released during equipment installation and when equipment is opened for servicing. While SF<sub>6</sub> comprises a small fraction of the total GHGs emitted globally, it is an extremely potent GHG with a global warming potential 22,800 times greater than an equivalent amount of CO<sub>2</sub>. SF<sub>6</sub> has an atmospheric lifetime of 3,200 years, compared with a lifetime of less than 10 years for methane, and 200 years for carbon dioxide. As described in Section 4.8.2. *Regulatory Context*, the California Air Resources Board (CARB) has established regulations and programs for the reduction and ultimate phase-out of SF<sub>6</sub> (CARB 2022b).

## 4.8.2. Regulatory Context

### *Federal*

#### **Mandatory Reporting of Greenhouse Gases Rule**

In 2009, the U.S. EPA promulgated the Federal Mandatory Reporting of Greenhouse Gases rule (40 Code of Federal Regulations (CFR) Part 98) to require mandatory reporting of GHGs from large GHG emissions sources. In general, the threshold for reporting is 25,000 metric tons CO<sub>2</sub>e (MTCO<sub>2</sub>e) or more. No VCIP projects are expected to trigger GHG reporting according to the rule; however, GHG emissions resulting from VCIP implementation are quantified in this PEIR.

### *State of California*

#### **California Greenhouse Gas Bill (AB 1493)**

The “California Greenhouse Gas Bill” (AB 1493 Pavley), signed into law in July 2002, required CARB to develop and adopt regulations that achieve maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks. In response, CARB adopted landmark regulations in 2004 limiting GHG emissions from new vehicles sold in California beginning in the 2009 model year. New vehicles complying with this regulation consume nearly 30 percent less fuel than vehicles built before 2009 (Health and Safety Code, sections 42823, 43018.5).

#### **California Global Warming Solutions Act (AB 32)**

To mitigate the consequences of climate change, the California Legislature (Legislature) passed the California Global Warming Solutions Act (AB 32) in 2006. AB 32 established a state goal of reducing GHG emissions to 1990 levels by 2020 (a reduction of approximately 25 percent from forecast emissions levels), and required CARB to prepare a Scoping Plan that establishes a comprehensive program to implement this goal. In 2016, the Legislature passed SB 32, which extended the goals of AB 32 and set a 2030 goal of reducing 2030 emissions by 40 percent from 2020 levels. In 2022, the legislature passed AB 1279, which establishes the policy of the state to achieve carbon neutrality by 2045, and to ensure that GHG emissions by that year are reduced at least 85 percent below 1990 levels. The AB 32 Scoping Plan has gone through four iterations as legislative mandates have evolved, with the latest being the 2022 Scoping Plan which provides the framework {00081387.1}

for achieving carbon neutrality by 2045, and which identifies policies and strategies that enable CO2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies (CARB 2022b).

### **Renewables Portfolio Standard (RPS)**

One of the key implementation programs under AB 32 is the Renewables Portfolio Standard (RPS) which has undergone several iterations mandating that renewable generation sources comprise an ever-increasing share of electrical utilities' total power generation by certain target dates. Qualifying renewable generation sources include solar, wind, small hydro, geothermal, and biomass. In September 2018, Governor Brown signed SB 100, which increased the required renewables content of electricity generation to 50 percent by 2025 and 60 percent by 2030, and which puts California on the path to implement a zero-carbon electricity grid by 2045. In September 2022, these targets were revised by SB 1020, which requires the following: 90 percent renewables or zero carbon content of all electricity sales in California by the end of 2035; 95 percent renewables content of electricity by 2040; and 100 percent renewables content of electricity consumed by state agencies by the end of 2035. SB 1020 also codifies the goal stated in SB 100 of achieving 100 percent renewables content by 2045.

In 2023, renewable energy sources, including biomass, geothermal, small-scale hydro, solar, and wind, accounted for an estimated 35.3 percent of California's power mix, with utility-scale solar generation accounting for 18.3 percent of the state's power mix (CEC 2024e). During the same year, fossil fuel energy sources – primarily natural gas with minor quantities of coal and oil – accounted for an estimated 43.8 percent of the state's power mix. Considering the discussion regarding AB 2661 (2024) below, it is anticipated that implementation of renewable energy projects under the VCIP would reduce reliance on fossil fuels for electricity generation.

### **Electricity: Westlands Water District (AB 2661)**

In recognition of “the unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals,” the Legislature enacted AB 2661 in 2024. The act, among other things, authorizes the District to: (1) provide, generate, and deliver solar photovoltaic electricity, and construct, operate, and maintain any and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for generating and delivering that electricity; (2) construct, operate, and maintain an energy storage system, as defined in section 2835 of the Public Utilities Code, and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the operation of an energy storage system, within the boundaries of the District; and (3) construct, operate, and maintain electrical transmission lines and all works, facilities, improvements, and property, or portions thereof, necessary or convenient for the conveyance of electricity within the boundaries of the District (Wat. Code, section 37860(b)-(d)).

### **Cap-and-Trade Program**

CARB administers the state's Cap-and-Trade Program, which covers GHG sources that emit more than 25,000 MTCO<sub>2</sub>e per year, such as refineries, power plants, and industrial facilities. This market-based approach to reducing GHG emissions provides economic incentives for achieving GHG emission reductions (CARB 2025a).

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### **Low Carbon Fuel Standard**

The Low Carbon Fuel Standard (LCFS), established in 2007 by Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products, starting with a 0.25-percent reduction in 2011 and culminating in a 10-percent reduction by 2020. Petroleum importers, refiners, and wholesalers can either develop their own low carbon fuel products, or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

### **Executive Order N-79-20**

EO N-79-20 (September 23, 2020) sets the following goals for the state: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium and heavy duty vehicles in the state shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the state shall be zero-emission by 2035, where feasible.

### **Senate Bill 375**

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, CARB approved GHG-reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). In 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Fresno Council of Governments (FCOG) was assigned targets of a 6 percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a 13 percent reduction in per capita GHG emissions from passenger vehicles by 2035 (CARB 2018).

### **Senate Bill 743**

California Senate Bill 743 (SB 743), which went into effect in January 2014, states that “[n]ew methodologies under the California Environmental Quality Act are needed for evaluating transportation impacts that are better able to promote the state’s goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations.” SB 743 shifted the focus of required transportation analyses from driver delay, which is typically measured by traffic level of service (LOS), to a new measurement – vehicle miles traveled (VMT). This change in metrics is intended to further the state’s long-term greenhouse gas reduction goals by reducing fuel consumption in the transportation sector, specifically through reductions in per capita VMT associated with new land use projects, and thereby promoting compact, mixed-use development patterns.

### **California Air Resources Board**

CARB is the state air pollution control agency charged with protecting the public from the harmful effects of air pollution and developing programs and actions to fight climate change.

#### ***California Mandatory Greenhouse Gas Reporting Regulation***

Pursuant to AB 32, CARB adopted the California Mandatory Greenhouse Gas Reporting Regulation (17 California Code of Regulations (CCR), sections 95100-95133). The facilities that are required to annually report their GHG emissions include electricity-generating facilities, electricity retail providers and power marketers,

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oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 MT/year of CO<sub>2</sub> from combustion. In addition, retail providers of electricity are required to report fugitive emissions of SF<sub>6</sub> related to transmission and distribution systems, substations, and circuit breakers located in California that the retail provider or marketer is responsible for maintaining in proper working order (CARB 2019).

#### ***CARB's Regulation for Reducing Sulfur Hexafluoride (SF<sub>6</sub>) Emissions***

In 2010, CARB adopted regulations which require switchgear owners to reduce their SF<sub>6</sub> emission rates, reaching a 1 percent emission rate by 2020. The purpose of this regulation is to achieve GHG emission reductions by reducing SF<sub>6</sub> emissions from gas-insulated switchgear. Owners must regularly inventory gas-insulated switchgear equipment, measure quantities of SF<sub>6</sub>, and maintain records of these for at least 3 years. In recognition of considerable progress made since 2010 in developing alternatives to SF<sub>6</sub>, CARB amended the regulation in 2021 to phase out the use of SF<sub>6</sub> altogether (CARB 2025b). The new phase out schedule begins in January 2025, with all switchgear needing to be SF<sub>6</sub> free by January 2033 (17 CCR, section 95352). These regulations would apply to any switchgear equipment containing SF<sub>6</sub> which may be installed within potential VCIP projects (CARB 2025h).

#### **California Green Building Code**

The California Green Building Code (CALGreen) (24 CCR, part 11), commonly referred to as CALGreen, establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, schools, and hospitals. Updated CALGreen standards are published every three years by order of the Legislature. The CALGreen 2022 standards became effective on January 1, 2023 (CBSC 2023)(see Section 4.17. *Utilities and Service Systems* for additional information).

### ***Regional***

#### **San Joaquin Valley Air Pollution Control District (SJVAPCD)**

Under its mandate to provide local agencies with assistance in complying with CEQA in climate change matters, SJVAPCD developed *Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects under CEQA* (SJVAPCD Guidance). As a general principle, the SJVAPCD Guidance states that to demonstrate a less-than-significant impact related to global climate change, a project must be determined to have reduced or mitigated GHG emissions by 29 percent relative to Business-As-Usual conditions. Under the SJVAPCD Guidance, a project that meets this emissions reduction target is considered to meet the 29 percent statewide GHG emission reduction target established in CARB's Scoping Plan for AB 32 implementation (SJVAPCD 2015c). However, use of the SJVAPCD's 29 percent reduction metric was substantially limited by the California Supreme Court's 2015 Newhall Ranch decision (*Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204). While the 29 percent reduction is the statewide goal under AB 32, the court found no substantial evidence to support a nexus between the statewide goal and the percent reduction that a specific land use project would need to achieve in order to be consistent with the

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goals of AB 32. Therefore, if specific percentage reduction targets are to be applied, they must be demonstrably applicable to the land use type proposed.

### **2022 Regional Transportation Plan/Sustainable Communities Strategy**

In July 2022, the FCOG adopted the 2022 Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS), which is a long-range planning document that provides the framework for investments in roads, freeways, public transit, bikeways and other ways people move around Fresno County for the next 25 years. Each metropolitan planning organization is required to prepare an SCS pursuant to SB 375 (2008) (see above). The primary goal of each SCS is to reduce regional VMT and, as a result, reduce GHG emissions associated with mobile sources (FCOG 2022).

## ***Fresno County***

### **Fresno County General Plan**

The Fresno County General Plan (Fresno County 2024) includes the following goals and policies related to GHG emissions which are relevant to the VCIP. In addition, implementation of General Plan policies related to air quality (see Section 4.3.2. *Air Quality*) would result in reductions in GHG emissions.

## ***Health and Safety Element***

### **G. Adaptation and Resiliency**

Goal HS-G To improve the sustainability and resiliency of the County through continued efforts to reduce the causes of and adapt to climate change.

Policy HS-G.1 **Reduce Impacts of Climate Change**  
The County shall support plans, standards, regulation, incentives, and investments based on sound science to reduce the impacts of climate change.

Policy HS-G.3 **Collaborate on Climate Adaptation**  
The County shall continue to collaborate with Federal, State, regional, and local agencies, business and property owners, and residents to reduce generation of GHG and other emissions that contribute to climate change and effectively implement climate change adaptation policies and programs.

## **4.8.3. Environmental Impact Analysis**

### **METHODOLOGY**

This section analyzes the potential for implementation of the VCIP to result in significant environmental impacts related to GHG emissions. The evaluation of potential GHG emissions resulting from the VCIP implementation is based on the GHG emissions estimates for the VCIP prepared by Illingworth & Rodkin (see Appendix B of this PEIR). The analysis considers the estimated GHG emissions and evaluates the offsetting effects of the production

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of a clean energy source by VCIP solar projects compared with conventional fossil-fueled electrical generation, which currently accounts for approximately 40 percent of electricity generation in California.

## SIGNIFICANCE CRITERIA

Based on Appendix G of the state CEQA Guidelines, implementation of the VCIP would be considered to result in a significant impact related to GHG emissions if it would:

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

### 4.9.3.1. DIRECT AND INDIRECT EFFECTS

#### Impact GHG-1. Greenhouse Gas Emissions

**Implementation of the VCIP Energy Resource and Infrastructure Plans would result in the generation of greenhouse gas emissions, both directly and indirectly, during construction, operation, and decommissioning. However, the GHG emissions resulting from VCIP implementation would be vastly outweighed by the GHG emission reductions and substantial net benefit related to global climate change resulting from the clean power generation and storage provided by VCIP solar and energy storage projects. (*Less-than-Significant Impact*)**

#### *Introduction*

The emission of GHGs from many sources over long periods of time has resulted in, and continues to contribute to, global warming and climate change. The effects of climate change include: melting polar ice caps, sea level rise, increased coastal flooding, increased frequency and severity of extreme weather events, habitat disruption, increased frequency and severity of wildfires, and other adverse environmental effects. It is generally accepted that individual development projects, in and of themselves, are too small to have a perceptible effect on global climate (see, e.g., *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219; *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 512). However, the GHG emissions from each development project results in an incremental contribution related to global warming and climate change. The geographic scope of climate change is global, and the cumulative emissions of GHGs globally have resulted in cumulatively significant climate change impacts. Thus, in CEQA terms, GHG emissions associated with individual development projects are by nature cumulative in their effects (CEQA Guidelines, section 15064.4(b); *Upland Community First v. City of Upland* (2024) 105 Cal.App.5th 1, 15 [“[a] project's impacts on global GHG emissions and climate change are necessarily cumulative impacts”]).

As such, a significant impact would occur if a project’s incremental addition of GHG emissions is a considerable contribution to the cumulatively significant impacts resulting from global climate change (*Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 219; *Cleveland National Forest Foundation v.*

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*San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 512). In determining the significance of a project’s GHG emissions, CEQA Guidelines section 15064.4(b), provides that an agency’s analysis should: 1) consider a timeframe that is appropriate for the project; 2) reasonably reflect evolving scientific knowledge and state regulatory schemes; 3) consider the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting; 4) consider whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and 5) consider 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 GHG emissions.

**VCIP Energy Resource and Infrastructure Plan**

Energy and infrastructure projects developed under the VCIP would generate GHG emissions through direct consumption of fossil fuels, primarily related to equipment operation during construction, traffic generation, and facility maintenance. The GHG emissions resulting from VCIP project construction, operation and decommissioning were estimated by Illingworth & Rodkin using the California Emissions Estimator Model (CalEEMod) (see Table 12 in Appendix B of this PEIR). The estimated emissions from VCIP implementation are summarized in Table 4.8-1. The calculations include emissions from the solar generation and BESS facilities, gen-tie lines, collection substations, and connecting transmission lines. As shown in the table, annual average GHG emissions would be the equivalent of approximately 59,617 MTCO<sub>2</sub>e per year. The operation of VCIP solar and energy storage facilities would result in very low GHG emissions, given the small number of permanent operations staff, and the fact that fuel-consumptive operational activities mainly consist of facility maintenance, not electrical energy generation. The VCIP infrastructure would result in negligible GHG emissions given the lack of permanent staff and infrequent visits by personnel for inspection, maintenance and repair.

To calculate annual average GHG emissions, the emissions from VCIP project construction activities and the post-project decommissioning activities are amortized over the 35-year operational life anticipated for each VCIP facility, and added to operational emissions, as shown in Table 4.8-1.

**TABLE 4.8-1  
ESTIMATED PROJECT GREENHOUSE GAS EMISSIONS**

Project	Construction & Decommissioning Emissions (MTCO <sub>2</sub> e) <sup>1</sup>			Annual Emissions (MTCO <sub>2</sub> e)		
	Construction Emissions (Total)	Decommissioning Emissions (Total) <sup>2</sup>	Total Construction/Decommissioning Emissions	Construction/Decommissioning (Amortized) <sup>3</sup>	Project Operation	Total Annual Emissions
<b>VCIP Totals</b>	<b>968,593</b>	<b>968,593</b>	<b>1,937,186</b>	<b>55,348</b>	<b>4,269</b>	<b>59,617</b>

<sup>1</sup> MTCO<sub>2</sub>e = Metric Tons CO<sub>2</sub> Equivalent

<sup>2</sup> Decommissioning emissions would likely be less than construction emissions, but are assumed to be same for purposes of this analysis.

Source: Illingworth & Rodkin 2025.

<sup>3</sup> VCIP solar and energy storage facilities are anticipated to have a useful life of 35 years.

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As discussed in Section 4.8.1. *Environmental Setting*, small amounts of SF<sub>6</sub> commonly used as an insulating gas in substation switchgear can leak through seals and can also be released during equipment installation and when equipment is opened for servicing. While SF<sub>6</sub> comprises a small fraction of the total GHGs emitted globally, it is an extremely potent GHG with a global warming potential 22,800 times greater than an equivalent amount of CO<sub>2</sub>. As discussed in Section 4.8.2. *Regulatory Setting*, CARB has promulgated regulations for the phase-out of all equipment containing SF<sub>6</sub> or “gas-insulated switchgear” (GIE) by 2033, with GIE to be phased out in 230-kV switchgear by 2028. By the time the first VCIP substation would be planned for construction in 2028, it is expected that SF<sub>6</sub>-free electrical equipment will be widely available for procurement. Engineering plans for substations that would be constructed under the VCIP have not been developed. Thus, there is currently insufficient information to provide any meaningful emissions calculations that reliably forecast reasonably foreseeable emissions. However, it is expected that VCIP projects would utilize switchgear that would be entirely or mostly SF<sub>6</sub>-free, and thus any emissions associated with the substations are anticipated to be insubstantial.

Upon completion, full buildout of the contemplated VCIP solar facilities would have a total generating capacity of 21,000 megawatts (MW), which would generate approximately 33,484,500 megawatt hours per year (MWh/yr), which is based on the 2023 average generation of 1,594.5 MWh/MW from the five largest solar operating solar facilities in Fresno County (CEC 2024e). This is equivalent to the average electrical consumption of 5,683,045 California homes in 2023 (at 5,892 kilowatt-hours per year [kWh/yr] per home) (US EIA 2024a). This electric power would be dispatched to the California Independent System Operator (CAISO) in accordance with a complex and dynamic formula that considers numerous variables in ongoing dispatching decisions to meet demand for electricity at any given time. One of those variables is compliance with the mandates to integrate electricity generated from renewable sources into the system at a predetermined rate, i.e., 60 percent renewables by 2030, 90 percent by 2035, 95 percent by 2040, and 100 percent by 2045 as mandated by SB 100 and SB 120. Therefore, relative to existing conditions, additional renewable sources of electricity, such as solar generation, are considered to offset or displace an equivalent amount of generation from other fuel sources, such as natural gas or coal. In other words, installation and operation of solar facilities, like those proposed to be developed under the VCIP, would displace an equivalent amount of fossil-based generation, and hence would result in a net reduction in overall CO<sub>2</sub> emissions, relative to overall CO<sub>2</sub> emissions that would occur without the project.

To quantify the amount of displacement of CO<sub>2</sub> emissions due to VCIP implementation, the CO<sub>2</sub> emissions from fossil-fueled plants with the same aggregate electrical output were considered for comparison. The average carbon intensity for Pacific Gas and Electric (PG&E) natural gas fueled power plants was 0.402 MTCO<sub>2</sub>e/MWh in 2021 (latest year data available) (PG&E 2022). Based on this PG&E emissions factor, a natural gas-fired plant generating 33,484,500 MWh/yr (the equivalent of all the VCIP solar facilities at full operation) would produce annual GHG emissions of approximately 13,460,769 MTCO<sub>2</sub>e/yr.<sup>1</sup> Compared to the GHG annual emissions of 59,617 MTCO<sub>2</sub>e/yr from VCIP facilities shown in Table 4.8-1 (i.e., 0.0018 MTCO<sub>2</sub>e/MWh for VCIP solar vs. 0.402 MTCO<sub>2</sub>e/MWh for PG&E gas-fired plants), the annual emissions from gas-fired power plants would be approximately 223 times greater. Under full buildout, the VCIP solar facilities would represent an annual net

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<sup>1</sup> In 2023, there was a total generation of 94,192 gigawatt-hours per year (GWh/yr) from natural gas fuel sources, which equates to 94,192,000 MWh/yr in California (CEC 2024e). This greatly exceeds the maximum amount of electricity that would be generated under the VCIP and highlights the need for substantial offsets to meet the state’s renewables targets. Thus, it is reasonably foreseeable that all dispatched renewable electricity generated by potential VCIP projects would offset electricity generated by natural gas and other fossil-fuel power plants, thereby offsetting the rate of associated GHG emissions compared to existing conditions.  
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reduction of 13,401,152 MTCO<sub>2</sub>e/yr, or a 99.5 percent net reduction in GHG emissions compared to the natural gas fueled alternative.

In summary, while the VCIP energy and infrastructure projects would result in a relatively low level of GHG emissions during project construction and decommissioning, the near-zero emissions from electrical generation during solar facilities operation would result in displacement of an equivalent amount of fossil-fueled generation, representing a substantial net reduction of overall GHG emissions from electricity generation in California. Therefore, VCIP implementation would have a beneficial effect in terms of GHG emissions and the impact would be *less than significant*.

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## **Impact GHG-2. Conflict with GHG Reduction Plans**

**Implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. (No Impact)**

At the state level, the determination of significance under this criterion is based on whether the project would hinder or delay implementation of the statewide GHG reduction targets set forth in AB 32 and its successor legislation and regulations. The state's strategies for achieving the mandated GHG emissions reduction targets are outlined in the 2022 Climate Change Scoping Plan adopted by CARB. One of the key strategies is the RPS, which currently requires all electric utilities in California to include a minimum of 60 percent renewable generation sources in their overall energy mix by 2030, with the target increasing thereafter in five-year increments, reaching 100 percent renewables by 2045. The VCIP solar projects would help increase the proportion of renewables in the statewide energy portfolio, thereby furthering the implementation of RPS by the target years instead of hindering or delaying its implementation. In enacting AB 2661, the Legislature recognized "the unique need of the Westlands Water District to support the development of solar electrical generation for the electrical grid and to facilitate the development of transmission capacity to help California reach its clean energy and climate goals." While not counted as renewable generation under RPS, the VCIP energy storage facilities would maintain the supply of renewable energy during peak evening demand periods and when solar generation diminishes due to lack of sunlight. The addition of the VCIP solar generation to the state's electrical supply would help facilitate the retirement of existing older fossil-fueled generation plants, thereby avoiding or displacing those sources of GHG emissions, and the VCIP battery facilities would store renewable energy for additional grid support during peak demand periods. Therefore, the VCIP would not conflict with CARB's 2022 Climate Change Scoping Plan.

The Fresno County General Plan includes several policies which address climate change, including Health and Safety Policy HS-G.1 which states: "[t]he County shall support plans, standards, regulation, incentives, and investments to reduce the impacts of climate change;" and Policy HS-G.3 which states: "[t]he County shall continue to collaborate with Federal, State, regional, and local agencies, business and property owners, and residents to reduce generation of GHG and other emissions that contribute to climate change and adapt to potential effects of climate change" (Fresno County 2024). The VCIP solar projects would advance the implementation of these policies by providing new sources of renewable energy, thereby helping to reduce

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overall GHG emissions and reducing the impacts of climate change. Therefore, the VCIP would not conflict with the Fresno County General Plan.

In summary, the implementation of the VCIP Energy Resource and Infrastructure Plans would not conflict with applicable local plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs, and thus would have *no impact* in this regard.

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### 4.8.3.2. TRANSMISSION CORRIDORS OUTSIDE THE VCIP

The transmission corridors for delivery of solar generation from potential VCIP projects to urban electricity markets in northern and southern California have been identified at a conceptual level in this PEIR to allow a general discussion of environmental impacts associated with transmission line development for informational purposes. These transmission delivery corridors extend far beyond the District's boundaries and are not part of the proposed VCIP. Planning and approval of these outside transmission lines are under the jurisdiction of the state and federal energy regulatory agencies, and public utilities. The following discussion provides an overview of potential impacts of the outside transmission lines with respect to GHG emissions.

The outside transmission lines would result in GHG emissions during construction but would have negligible emissions during operation. Based on an emissions factor of approximately 1,000 MTCO<sub>2</sub>e per mile of transmission line, the construction of 549 line miles of outside transmission lines would result in total GHG emissions of approximately 549,000 MTCO<sub>2</sub>e over the 10-year construction period. The construction emissions would be amortized over 35 years, for an annual emissions rate of 15,686 MTCO<sub>2</sub>e/yr.<sup>2</sup> It is anticipated that the outside transmission lines would be constructed as several projects, the longest of which would be the 177-mile-long transmission line extending south from VCIP Substation 5 to the Vincent Substation located in northern Los Angeles County. The GHG emissions from construction of this southern corridor would total approximately 5,057 MTCO<sub>2</sub>e/yr, as amortized. In the absence of a "bright line" emissions threshold from SJVAPCD, the emissions were compared to the threshold applied by the South Coast Air Quality Management District (SCAQMD) of 10,000 MTCO<sub>2</sub>e/yr. The southern transmission corridor emissions fall well below this threshold, as would the other outside transmission line projects since they are shorter. Thus, despite the absence of construction details given the conceptual nature of the outside transmission corridors, it is concluded that the construction of the outside transmission line projects would not result in significant GHG emissions.

The purpose of the outside transmission corridors is to provide California's major population centers with access to the VCIP's renewable energy sources, thus reducing the state's dependence on non-renewable generation sources. As such, the outside transmission lines would be instrumental in facilitating displacement of fossil fuel generation, and would indirectly result in a substantial net reduction in GHG emissions as provided by VCIP solar facilities, quantified under Impact GHG-1. Therefore, the outside transmission lines would help advance the state goals of achieving carbon neutrality in the state's electrical grid by 2045.

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<sup>2</sup> While the outside transmission lines would not be decommissioned and would be expected to have an operational life of over 35 years, a 35-year amortization period is conservatively used for consistency and for informational purposes. {00081387.1}

In summary, the outside transmission lines would not have a significant impact with regard to GHG emissions, and would be consistent with state goals and mandates for reducing GHG emissions.

### 4.8.3.3. CUMULATIVE IMPACTS

As discussed above, the VCIP's solar generating and energy storage facilities would comprise and facilitate the use of a renewable source of energy which will help displace an equivalent amount of existing fossil-based generation. The construction, operation, and decommissioning of the VCIP energy and infrastructure facilities would generate some GHG emissions from fossil-fueled vehicles and equipment; however, the substantial offset of fossil-fueled electrical generation represented by the VCIP solar projects would greatly outweigh the small amount of fossil fuels consumed in project construction and decommissioning. The cumulative projects considered in this analysis are listed in Table 4.0-2 and shown in Figure 4.0-1, which encompasses all cumulative projects within the Plan Area and those within a 10-mile radius of the Plan Area.<sup>3</sup> Based on GHG estimates for the individual cumulative projects, it is calculated that the cumulative projects would result in total annual GHG emissions of approximately 90,344 MTCO<sub>2</sub>e/yr. Since solar projects represent over 96 percent of the cumulative projects by acreage, the emissions displaced by the solar projects would far outweigh the total cumulative emissions. It is estimated that the 4,755 MW of solar generation by the cumulative projects would generate 7,581,848 MWhr/yr, which would displace a total of approximately 3,047,902 MTCO<sub>2</sub>e/yr, which would offset the cumulative project GHG emissions by a factor of 34. With the addition of the 21,000 MW of potential VCIP solar projects (with a net GHG reduction of 14,527,281 MTCO<sub>2</sub>e/yr), the total cumulative net reduction in GHG emissions is 17,575,183 MTCO<sub>2</sub>e/yr, which would offset the total cumulative GHG emissions from all cumulative projects (including the 59,617 MTCO<sub>2</sub>e/yr VCIP projects) by a factor 118 annually.

By conveying the renewable energy from the VCIP to the state's load centers, the outside transmission lines would contribute to the net GHG reductions facilitated by the VCIP solar projects, as discussed in Section 4.8.3.2 above. As such, the GHG impacts of the outside transmission lines would be beneficial overall, and their contribution to any cumulative effect would not be considerable.

In summary, the GHG emissions from the construction, operation, and decommissioning of the cumulative projects, including the VCIP energy and infrastructure projects, would be more than offset by the displaced GHG emissions resulting from the renewable electricity they would generate. Since the cumulative projects would facilitate the avoidance of substantial existing fossil-fueled power generation, they would collectively result in a substantial net reduction in overall GHG emissions. As discussed under Impact GHG-2 for the potential VCIP projects, the other cumulative projects would also be consistent with applicable plans, policies, and regulations adopted for the purpose of reducing emissions of GHGs. Therefore, the *cumulative impact would be less than significant*, and the *contribution from VCIP projects would not be cumulatively considerable*.

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<sup>3</sup> Table 4.0-2 and Figure 4.0-1 include a total of 72 cumulative projects; however, four of these projects comprise solar/BESS projects within the VCIP DFAs. Since the plan level impacts of the DFAs, including these projects, are addressed in the main impact analysis sections of this PEIR, they are not addressed again in the cumulative analyses. {00081387.1}

## 4.8.4. References – Greenhouse Gas Emissions

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