4.8 Greenhouse Gas Emissions

4.8.1 Introduction

This section describes the regulatory and environmental setting related to GHG emissions and then evaluates impacts related to the Proposed Project's forecasted GHG emissions. The impacts analysis also considers the GHG emissions impacts associated with the reasonably foreseeable distribution components and alternatives.

4.8.2 Regulatory Setting

Federal Laws, Regulations, and Policies

Corporate Average Fuel Economy and GHG Emissions Standards

As described in Section 4.6, "Energy," the federal government has developed regulations to improve the efficiency of, and reduce GHG emissions from, motor vehicles. The CAFE and GHG emissions standards promulgated by the NHTSA and USEPA have been rolled out in several phases and for different weight classes. On August 9, 2011, USEPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses. In August 2016, USEPA and the NHTSA jointly finalized Phase 2 Heavy-Duty National Program standards to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles for model year 2018 and beyond (USEPA 2020a). In April 2020, NHTSA and USEPA amended the CAFE and GHG emission standards for passenger cars and light trucks and established new less stringent standards, covering model years 2021 through 2026 (USEPA 2020b).

GHG Emissions Reporting

The USEPA has implemented a mandatory GHG emission reporting regulation (40 CFR Part 98), which requires certain industries to report their annual GHG emissions. Electrical utilities are required to report emissions associated with their operations.

State Laws, Regulations, and Policies

Global Warming Solutions Act

In 2006, the California State Legislature enacted Assembly Bill (AB) 32, the Global Warming Solutions Act, which set the overall goals for reducing California's GHG emissions to 1990 levels by 2020. AB 32 required that the CARB develop a Scoping Plan (see below) which lays out California's strategies for meeting the emissions reduction goals. The Scoping Plan must be updated every five years. Since the passage of the Global Warming Solutions Act in 2006, subsequent bills and executive orders have further modified the GHG emission reduction goals to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. Executive Order (EO) S-3-05 established a goal of 80 percent below 1990 levels by 2050. EO B-30-15 established an interim target to reduce California's GHG emissions to 40 percent below 1990 levels by 2030, and the 2030 target has been codified in Senate Bill (SB) 32, which was signed

into law on September 8, 2016. Along with SB 32, AB 197 was also signed into law on September 8, 2016, and requires the state to focus its pollution-reduction efforts on disadvantaged communities and to increase legislative oversight of climate programs.

Climate Change Scoping Plan

In 2008, CARB approved the initial Scoping Plan, developed pursuant to AB 32, which included a suite of measures to sharply cut GHG emissions. The First Update to the AB 32 Scoping Plan was adopted in 2014, which, among other things, highlighted California's progress toward meeting the GHG emission reduction goals and evaluated how to align the State's longer term GHG reduction strategies with other state policy priorities for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014). CARB has subsequently released and adopted a 2017 Scoping Plan Update to reflect the 2030 GHG emissions reduction target (CARB 2020a).

Renewable Portfolio Standard

As described in Section 4.6, *Energy,* the RPS requires electricity suppliers to increase the amount of electricity generated from renewable sources. In 2018, SB 100 updated the RPS to require 50 percent renewable resources by the end of 2026, 60 percent by the end of 2030, and 100 percent renewable energy and zero carbon resources by 2045.

Mandatory GHG Reporting Regulation and California Cap-and-Trade Program

The Mandatory Reporting Regulation requires reporting of GHG emissions by major sources, including electricity generators, industrial facilities, fuel suppliers, and electricity importers. Reported GHG emissions must be verified by a third party. GHG emissions and other key product data required to be reported under this regulation are used to determine of emissions and allowances used in the Cap-and-Trade Program.

The Cap-and-Trade Program is implemented by CARB and is a key element of California's strategy to reduce GHG emissions. The Cap-and-Trade Program requires certain industries, including electrical utilities, to provide emission allowances for their annual GHG emissions (one allowance equals one metric ton of carbon dioxide equivalent [CO_2e] emissions) (CARB 2020b). CARB gives a certain number of free allowances to industries based on their efficiency of operation which decreases over time. Companies participate in allowance auctions to secure any additional GHG allowances that they require to cover their emissions. The price of GHG allowances is set to a minimum and increases over time.

Gas Insulated Switches Regulation

CARB has implemented the gas insulated switches (GIS) regulation to control emissions of sulfur hexafluoride (SF_6). This requires facilities to track the number and type of GIS as well as report any changes in SF_6 levels. There is a maximum allowed threshold for SF_6 emissions from GIS. Changes to the GIS regulation are being considered including future prohibition on SF_6 containing switches but these have not been finalized at this time.

4.8.3 Environmental Setting

Global Climate Change

"Global climate change" and "global warming" are terms that describe changes in the Earth's climate. A global climate change could be, for example, an increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns. The term global warming is more specific and refers to a general increase in temperatures across the Earth. Although global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific locations may be cooler even though the Earth, on average, is warming. All of these climatic changes fit under the umbrella of global climate change.

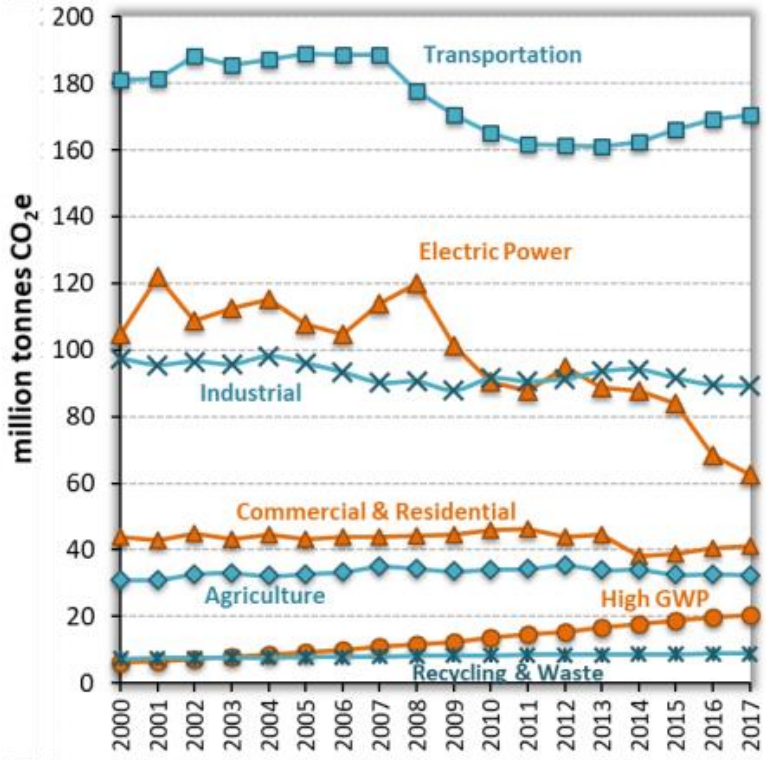
It is widely acknowledged that GHGs play a significant role in the global warming trend that has been observed over the last several decades. GHGs, such as carbon dioxide (CO_2), methane, and nitrogen oxide (N_2O), trap heat that is emitted from the Earth's surface, creating a "greenhouse effect" (National Aeronautics and Space Administration [NASA] 2020). Water vapor is the most abundant GHG, but it functions more as a "feedback" since it changes physically or chemically in response to temperature. By contrast, GHGs such as CO_2, methane, N_2O, and others may remain semi-permanently in the atmosphere and thereby act as a "forcing" of climate change (NASA 2020). In general, about half the light reaching the Earth's atmosphere passes through the air and clouds to the surface, where it is absorbed and then radiated upward in the form of infrared heat (NASA 2020). About 90 percent of this heat is then absorbed by the GHGs and radiated back toward the surface.

The scientific consensus is that present-day global warming is primarily the result of human activity on the planet, and specifically, is the result of increased concentrations of GHGs in the atmosphere due to human activities (International Panel on Climate Change [IPCC] 2014). According to the IPCC's Fifth Assessment Report: Climate Change 2014, the globally averaged combined land and ocean surface temperature data as calculated by a linear trend show a warming of 0.85 degrees Celsius over the period 1880 to 2012. It is extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (IPCC 2014).

GHG Emissions

In 2017, total California GHG emissions were 424 million metric tons (MMT) CO_2e (CARB 2019). This represents a decrease from 2016 and a 14 percent reduction compared to peak levels reached in 2004. Declining emissions from the electricity sector were responsible for much of the reduction. The transportation sector continues to be the largest source of emissions in California, accounting for approximately 40 percent of the total (CARB 2019). Figure 4.8-1 shows trends in California GHG emissions since 2000, while Figure 4.8-2 shows a breakdown of GHG emissions by Scoping Plan category.

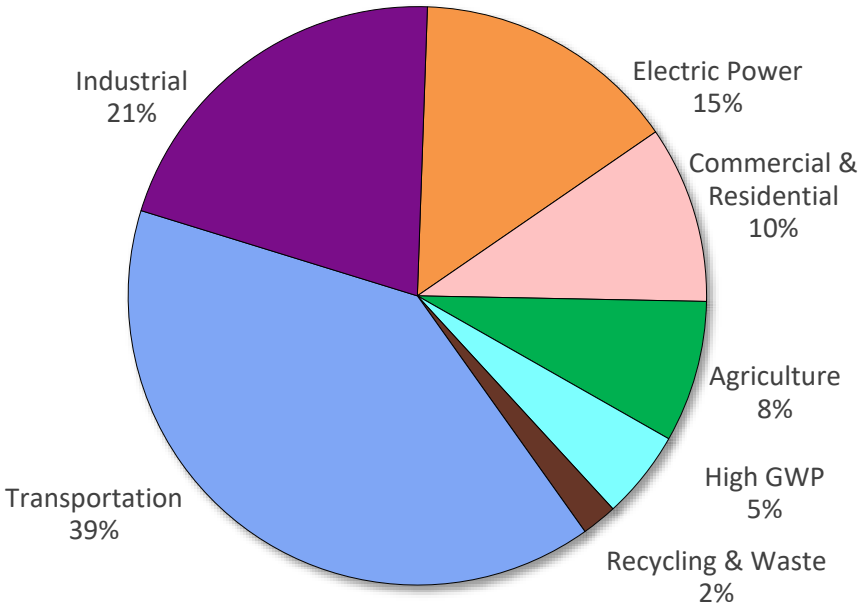
Figure 4.8-1. Trends in California GHG Emissions



Notes: CO2e = carbon dioxide equivalents

Source: CARB 2019

Figure 4.8-2. GHG Emissions by Scoping Plan Category



Notes: GWP = global warming potential

Source: CARB 2019

Emissions trends and distribution by sector in San Luis Obispo County are similar to that in the State as a whole. In 2013, San Luis Obispo County GHG emissions were 1.76 MMT CO_2e, which equated to a decrease of roughly 10 percent from 2006 (San Luis Obisbo County 2016). PG&E, which provides electricity to the county, obtains power from both GHG-emitting and non-GHG-emitting sources (see Table 4.6-1 in Section 4.6, "Energy").

4.8.4 Impact Analysis

Methodology

The impacts analysis used both quantitative and qualitative methods to evaluate the GHG emissions of the Proposed Project, reasonably foreseeable distribution components, and alternatives. Where possible, GHG emissions were estimated as follows:

- Construction emissions were estimated using CalEEMod version 2016.3.2. CalEEMod is an emissions model that estimates GHG emissions for land use development projects but can be used for other types of projects. CalEEMod incorporates both CARB's EMFAC for vehicles and current off-road in-use engine emissions model for construction equipment. Potential overlap in construction phases was considered if it was relevant to making a specific significance determination. Since construction was modeled for work to start in 2021 and changes would be less than 1 percent, no adjustments were made for the recently adopted SAFE Vehicles Rule, which is a joint NHTSA and USEPA rule. Detailed assumptions that informed the modeling and the modeling results are included in Appendix C of this DEIR.

- Helicopter emissions were estimated following the FAA's recommended methods consistent with their AEDT version 3c. A Sikorsky S92A helicopter was used to represent a typical helicopter type used in utility construction projects, as emission factors are readily available for this engine model. The helicopter was assumed to operate for 132 days with up to 10-hour days and it was assumed to have up to 20 LTOs per day. Detailed helicopter emission calculations are available in Appendix C of this DEIR.

- Operational GHG emissions would primarily come from SF_6 GIS and equipment used at the substations and power lines. These emissions were estimated using the volume of SF_6 that would be used in the equipment and assuming the maximum allowed leak rate under current regulations of 1 percent. Other operational emissions such as the transmission line distribution losses and energy used to power the equipment, control, and HVAC systems as part of the project are typically assessed at the larger corporate entity level resulting from the difference between generated and delivered energy. There was not sufficient detail available at this time to estimate the distribution loss and other energy use at the individual substation level. Based on information in PG&E's 2019 Corporate Responsibility and Sustainability Report, the 2017 system-wide percentage for PG&E for the transmission and distribution losses and facility electricity use is 4.5 percent of the total delivered electricity GHG emissions.

- Construction emissions (including helicopter emissions) were amortized over the life of the Proposed Project (assumed to be 30 years) and combined with operational emissions to determine the annual average emissions.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project, reasonably foreseeable distribution components, and alternatives would result in a significant impact related to GHG emissions if they would:

A. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

B. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs.

GHG emissions are, by their nature, cumulative impacts. Consequently, the cumulative analysis is the same as the discussion concerning Proposed Project impacts. The SLOCAPCD has established thresholds of significance for GHG emissions, including a threshold of 10,000 metric ton (MT) CO_2e/yr from industrial/stationary sources. The SLOCAPCD thresholds of significance are used as the SLOCAPCD is the air district in charge of setting air quality and GHG emission thresholds for the air basin that the project is located in. Construction emissions do not have a specific threshold, but are typically amortized over the life of the project and added to the annual emissions. In addition, as a mandatory reporter under the California mandatory reporting regulation and an entity subject to California Cap-and-Trade, the project would not be significant if it is consistent and following these regulations since these regulations are designed to achieve the goals of AB 32 and SB 32 for industrial sources.

Environmental Impacts

Proposed Project

Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment – *Less than Significant*

Construction of the Proposed Project would generate GHG emissions from operation of fossil-fueled construction equipment and vehicles, as well as helicopters. Additionally, use of SF_6 GIS and equipment would result in GHG emissions during the operation phase. These emissions were estimated and are shown in Table 4.8-1 with additional detail shown in Appendix C.

Table 4.8-1. Proposed Project GHG Emissions

Phase	GHG Emissions (Metric Tons CO_2e)
Ground-Based Construction Emissions	2,025
Helicopter Emissions	699
Total Construction Emissions	2,724
Amortized Construction Emissions	91
SF_6 Gas Insulated Switches and Equipment	96
Total Annualized Emissions	187

Notes: CO2e = carbon dioxide equivalents; SF6 = sulfur hexafluoride

As shown in Table 4.8-1, construction of the Proposed Project would result in emissions of 2,724 MT CO_2e over the 18-month construction period. Amortized over the 30-year life of the Proposed Project facilities, this equates to 91 MT CO_2e annually. When added to the quantified GHG emissions associated with GISs and equipment, this results in total annualized emissions of 187 MT CO_2e, which is well below the SLOCAPCD threshold of 10,000 MT CO_2e per year.

Other direct emissions associated with the Proposed Project that could not be quantified include emissions from fossil fuel-powered equipment and motor vehicles used during occasional maintenance and inspection activities.

While any GHG emissions can contribute to global climate change to some degree, the Proposed Project's GHG emissions from operation would be relatively minor and the Proposed Project would not create a substantial permanent source of emissions. Other operational GHG emissions for the substation and transmission lines would be minimal and were not quantified since adequate information is not available to make a reasonable estimate. These emissions include fossil fueled equipment and motor vehicles used for occasional maintenance and inspection, which is estimated to be less than once a month. Transmission and distribution losses as well as equipment energy use to operate the substation and transmission lines are a small percentage of PG&E's total electricity-based operation GHG emissions. The Proposed Project represents a small change to the total amount of substations and transmission lines for PG&E. These operational indirect emissions are not quantified as they are not released locally, but rather represent an overall loss of efficiency and are taken into account in the average carbon intensity of delivered electricity.

The Proposed Project would not generate electricity, but rather would transmit electricity that could be produced either via GHG-emitting or non-GHG-emitting sources. Several APMs would serve to reduce the Proposed Project's GHG emissions during construction and operation, including APMs AIR-1 and GHG-1. For instance, the use of alternatively-fueled construction equipment and limitation of vehicle idling (APM AIR-1) would reduce GHG emissions during construction. Under APM GHG-1, PG&E and HWT would incorporate Estrella Substation into their respective system-wide SF_6 emission reduction programs. Additionally, APM GHG-1 would require that the breakers at Estrella Substation have a manufacturer's guaranteed maximum leakage rate of 0.5 percent per year or less for SF_6. No reduction in emissions were included

since the current regulation allows up to 1 percent leak rate and it is not known how the vendor guarantee leak rate would perform in the field over time or specific information on how this is achieved and would be enforced.

Overall, the Proposed Project's GHG emissions during construction and operation would be below the SLOCAPCD threshold of significance. As a result, neither a significant project-level nor cumulative impact would occur. This impact would be **less than significant.**

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs – *Less than Significant*

The construction and operation of the project would result in GHG emissions, but these would not impede the implementation of statewide GHG goals and policies specifically outlined in AB 32 and SB 32 which codifies the goals of Executive Orders S-3-05 and B-30-15. The project's emissions would be below the industrial source threshold established by SLOCAPCD and the entity (PG&E) overall is subject to GHG mandatory reporting regulations, cap-and-trade, and other statewide regulations such as SF_6 gas insulated equipment. Cap-and-trade regulation as well as implementation of any adopted industry-specific regulations ensures that GHG emissions associated with electricity and other industrial sources are doing their fair share to reach the statewide goals of AB 32 and SB 32. The project would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the project is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the project if applicable. Therefore, the project would not conflict with any applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions, and the impact would be **less than significant.**

Reasonably Foreseeable Distribution Components and Ultimate Substation Buildout

Construction and operation activities for the reasonably foreseeable distribution components would be similar to the Proposed Project, but on a much smaller scale. Installation of poles would require much less effort and equipment use than that for the 70 kV poles and only 1.7 miles of new distribution line would be constructed. Likewise, installation of the additional 21/12 kV transformers would require minimal site preparation and grading, while the work within the substation would require limited new ground disturbance. Some GIS could be included as part of the reasonably foreseeable distribution components, but these would be far fewer than for the Proposed Project, and thus would have reduced potential for SF_6 emissions. As such, the GHG emissions associated with the reasonably foreseeable distribution components would represent a small fraction of the Proposed Project's emissions. The Applicants would implement APM AIR-1 and GHG-1, which would reduce or minimize emissions, but regardless, the emissions would be well below the SLOCAPCD's significance threshold of 10,000 MT CO_2e. Ultimate buildout of the Estrella Substation similarly would involve activities on a smaller scale than the Proposed Project. Some ground disturbance would be required for constructing the new equipment (e.g., transformer, breakers, switches, etc.) foundations and substation wiring, which would result in some GHG emissions from operation of construction equipment. Construction activities and associated GHG emissions from any additional

distribution feeders or 70 kV power lines that could be facilitated through ultimate substation buildout are speculative at this time as the routes of these lines are unknown. Therefore, impacts under significance criterion A would be **less than significant.**

Like the Proposed Project, the GHG emissions from the reasonably foreseeable distribution components and ultimate substation buildout would be largely one-time, construction-related emissions that would not substantially affect the State's ability to achieve its GHG emissions reductions goals. The reasonably foreseeable distribution components would be below the industrial source threshold established by SLOCAPCD and the entity (PG&E) overall is subject to GHG mandatory reporting regulations, cap-and-trade, and other statewide regulations such as SF6 gas insulated equipment. Cap-and-trade regulation as well as implementation of any adopted industry-specific regulations ensures that GHG emissions associated with electricity and other industrial sources are doing their fair share to reach the statewide goals of AB 32 and SB 32. The project would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the project is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the project if applicable. As a result, impacts under significance criterion B would be **less than significant.**

Alternatives

No Project Alternative

Under the No Project Alternative, no new substation or new/reconductored power line would be constructed. Therefore, there would be no construction-related GHG emissions or potential for increased operational emissions during maintenance and operations. There would be no effect regarding conflicts with plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Therefore, **no impact** would occur under either significance criteria A or B.

Alternative SS-1: Bonel Ranch Substation Site

Alternative SS-1 would have slightly higher potential for GHG emissions during construction compared to the proposed Estrella Substation due to the slightly longer 230 kV interconnection, necessitating approximately one additional month of construction. Additionally, due to the Bonel Ranch Substation Site's close proximity to the Estrella River, it is possible that soft/unsuitable soils may be encountered, requiring greater excavation, off-haul, and/or import of soils (and associated GHG emissions). The GHG emissions from construction of Alternative SS-1 would need to increase more than four times compared to the Proposed Project, to exceed 10,000 MT per year, before amortization. Thus, it is unlikely even with the increased construction activity that Alternative SS-1's GHG emissions would come close to approaching this level of increase. Apart from these factors, the substation under Alternative SS-1 would be largely similar to the Estrella Substation, and would involve a similar number of vehicle trips during operation and maintenance activities. Even with the additional construction activity, it is unlikely that Alternative SS-1 would result in annualized GHG emissions above the 10,000 MT CO_2e threshold. Like the Proposed Project, APMs AIR-1 and GHG-1 would be implemented to reduce or minimize emissions during construction and operation of Alternative SS-1. Therefore, impacts under significance criterion A would be **less than significant**.

Like the Proposed Project, the GHG emissions from Alternative SS-1 would be largely one-time, construction-related emissions that would not substantially affect the State's ability to achieve its GHG emissions reductions goals. Alternative SS-1 emissions would be below the industrial source threshold established by SLOCAPCD and the entity (PG&E) overall is subject to GHG mandatory reporting regulations, cap-and-trade, and other statewide regulations such as SF6 gas insulated equipment. Cap-and-trade regulation as well as implementation of any adopted industry-specific regulations ensures that GHG emissions associated with electricity and other industrial sources are doing their fair share to reach the statewide goals of AB 32 and SB 32. The alternative would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the alternative is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the alternative if applicable. As a result, impacts under significance criterion B would be **less than significant.**

Alternative PLR-1A: Estrella Route to Estrella Substation

Due to its longer length (approximately 6.5 miles longer) and duration of construction (16 months longer), Alternative PLR-1A would have greater construction-related GHG emissions compared to the Proposed Project. The additional construction activity (e.g., site preparation, excavation) for installation of additional 70 kV poles would involve use of fossil fuel-power equipment that would emit GHGs, while the longer construction duration would equate to additional worker commute trips, each of which would emit some amount of GHGs. However, the GHG emissions from construction of Alternative PLR-1A would need to increase more than four times compared to the Proposed Project to exceed 10,000 MT per year before amortization. Thus, it is unlikely even with the increased construction activity that Alternative PLR-1A's GHG emissions would come close to approaching this level of increase. Once constructed, operation and maintenance of Alternative PLR-1A would involve a similar number and frequency of vehicle trips compared to the Proposed Project's 70 kV power line. Even with the increased construction activities, it is unlikely that Alternative PLR-1A would result in annualized GHG emissions above the 10,000 MT CO_2e threshold. Like the Proposed Project, APMs AIR-1 and GHG-1 would be implemented, which would reduce or minimize GHG emissions during construction and operation of Alternative PLR-1A. As a result, impacts under significance criterion A would be **less than significant**.

Like the Proposed Project, the GHG emissions from Alternative PLR-1A would be largely one-time, construction-related emissions that would not substantially affect the State's ability to achieve its GHG emissions reductions goals. Alternative PLR-1A emissions would be below the industrial source threshold established by SLOCAPCD and the entity (PG&E) overall is subject to GHG mandatory reporting regulations, cap-and-trade, and other statewide regulations such as SF6 gas insulated equipment. Cap-and-trade regulation as well as implementation of any adopted industry-specific regulations ensures that GHG emissions associated with electricity and other industrial sources are doing their fair share to reach the statewide goals of AB 32 and SB 32. The alternative would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the alternative is complete. Any future regulations that may impact operational emissions that

may be implemented as part of the statewide goals of SB 32 must be complied with by the alternative if applicable. As a result, impacts under significance criterion B would be **less than significant.**

Alternative PLR-1C: Estrella Route to Bonel Ranch, Option 1

Alternative PLR-1C would be similar in length to Alternative PLR-1A and would require a similarly extended construction duration compared to the Proposed Project. As such, the alternative would similarly result in increased construction-related GHG emissions compared to the Proposed Project. The additional construction activity (e.g., site preparation, excavation) for installation of additional 70 kV poles would involve use of fossil fuel-power equipment that would emit GHGs, while the longer construction duration would equate to additional worker commute trips, each of which would emit some amount of GHGs. However, the GHG emissions from construction of Alternative PLR-1C would need to increase more than four times compared to the Proposed Project to exceed 10,000 MT per year before amortization. Thus, it is unlikely even with the increased construction activity that Alternative PLR-1A's GHG emissions would come close to approaching this level of increase. Once constructed, operation and maintenance of Alternative PLR-1C would involve a similar number and frequency of vehicle trips compared to the Proposed Project's 70 kV power line. Even with the increased construction activities, it is unlikely that Alternative PLR-1C would result in annualized GHG emissions above the 10,000 MT CO_2e threshold. Like the Proposed Project, APMs AIR-1 and GHG-1 would be implemented, which would reduce or minimize GHG emissions during construction and operation of Alternative PLR-1C. As a result, impacts under significance criterion A would be **less than significant**.

Like the Proposed Project, the GHG emissions from Alternative PLR-1C would be largely one-time, construction-related emissions that would not substantially affect the State's ability to achieve its GHG emissions reductions goals. Alternative PLR-1C emissions would be below the industrial source threshold established by SLOCAPCD and the entity (PG&E) overall is subject to GHG mandatory reporting regulations, cap-and-trade, and other statewide regulations such as SF6 gas insulated equipment. Cap-and-trade regulation as well as implementation of any adopted industry-specific regulations ensures that GHG emissions associated with electricity and other industrial sources are doing their fair share to reach the statewide goals of AB 32 and SB 32. The alternative would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the alternative is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the alternative if applicable. As a result, impacts under significance criterion B would be **less than significant.**

Alternative PLR-3: Strategic Undergrounding (Options 1 & 2)

Alternative PLR-3 would involve a longer construction duration compared to the same segment of the Proposed Project's 70kV power line and would involve additional excavation activities (e.g., trenching). The type of construction equipment used for trenching the power line underground is different from equipment used to construct overhead lines. Generally, the underground power line construction would be expected to be more intensive, resulting in additional GHG emissions. However, the GHG emissions from construction of Alternative PLR-3

would need to increase more than four times to exceed 10,000 MT per year before amortization. Thus, it is unlikely even with the increased construction that Alternative PLR-3's GHG emissions would come close to approaching this level of increase. Once constructed, operation and maintenance of Alternative PLR-3 would involve similar number and frequency of vehicle trips compared to the Proposed Project's 70 kV power line. Even with additional or more intensive underground power line construction, it is unlikely that Alternative PLR-3 would result in annualized GHG emissions above the 10,000 MT CO_2e threshold. Like the Proposed Project, APMs AIR-1 and GHG-1 would be implemented, which would reduce or minimize GHG emissions during construction and operation of Alternative PLR-3. As a result, impacts under significance criterion A would be **less than significant**.

Like the Proposed Project, the GHG emissions from Alternative PLR-3 would be largely one-time, construction-related emissions that would not substantially affect the State's ability to achieve its GHG emissions reductions goals. Alternative PLR-3 emissions would be below the industrial source threshold established by SLOCAPCD and the entity (PG&E) overall is subject to GHG mandatory reporting regulations, cap-and-trade, and other statewide regulations such as SF6 gas insulated equipment. Cap-and-trade regulation as well as implementation of any adopted industry-specific regulations ensures that GHG emissions associated with electricity and other industrial sources are doing their fair share to reach the statewide goals of AB 32 and SB 32. The alternative would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the alternative is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the alternative if applicable. As a result, impacts under significance criterion B would be **less than significant.**

Alternative SE-1A: Templeton Substation Expansion – 230/70 kV Substation

Similar to Alternative SS-1, Alternative SE-1A would have slightly higher potential for GHG emissions during construction compared to the proposed Estrella Substation due to the slightly longer 230 kV interconnection, necessitating approximately one additional month of construction. The longer construction duration would result in an increased number of worker commute trips, which would result in increased GHG emissions. However, the GHG emissions from construction of Alternative SE-1A would need to increase more than four times to exceed 10,000 MT per year before amortization. Thus, it is unlikely even with the increased construction activity that Alternative SE-1A's GHG emissions would come close to approaching this level of increase. Apart from the longer 230 kV interconnection, the substation under Alternative SE-1A would be largely similar to the Estrella Substation, and would involve a similar number of vehicle trips during operation and maintenance activities. Even with the additional construction activity, it is unlikely that Alternative SE-1A would result in annualized GHG emissions above the 10,000 MT CO_2e threshold. Like the Proposed Project, APMs AIR-1 and GHG-1 would be implemented to reduce or minimize emissions during construction and operation of Alternative SE-1A. Therefore, impacts under significance criterion A would be **less than significant**.

Like the Proposed Project, the GHG emissions from Alternative SE-1A would be largely one-time, construction-related emissions that would not substantially affect the State's ability to achieve its GHG emissions reductions goals. Alternative SE-1A emissions would be below the industrial

source threshold established by SLOCAPCD and the entity (PG&E) overall is subject to GHG mandatory reporting regulations, cap-and-trade, and other statewide regulations such as SF6 gas insulated equipment. Cap-and-trade regulation as well as implementation of any adopted industry-specific regulations ensures that GHG emissions associated with electricity and other industrial sources are doing their fair share to reach the statewide goals of AB 32 and SB 32. The alternative would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the alternative is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the alternative if applicable. As a result, impacts under significance criterion B would be **less than significant.**

Alternative SE-PLR-2: Templeton-Paso South River Road Route

Alternative SE-PLR-2 would be approximately 4.8 miles shorter in length than the Proposed Project's 70 kV power line and would require a reduced construction schedule (9 months shorter). As such, it would result in fewer total construction-related GHG emissions due to the reduced construction activity associated with installation of fewer 70 kV poles and fewer construction worker commute trips. Once constructed, operation and maintenance of Alternative SE-PLR-2 would involve a similar number and frequency of vehicle trips compared to the Proposed Project's 70 kV power line. Given the reduced construction activities, Alternative SE-PLR-2 would not result in annualized GHG emissions above the 10,000 MT CO_2e threshold. Additionally, APMs AIR-1 and GHG-1 would be implemented, which would further reduce or minimize GHG emissions during construction and operation of Alternative SE-PLR-2. As a result, impacts under significance criterion A would be **less than significant**.

Like the Proposed Project, the GHG emissions from Alternative SE-PLR-2 would be largely one-time, construction-related emissions that would not substantially affect the State's ability to achieve its GHG emissions reductions goals. Alternative SE-PLR-2 emissions would be below the industrial source threshold established by SLOCAPCD and the entity (PG&E) overall is subject to GHG mandatory reporting regulations, cap-and-trade, and other statewide regulations such as SF6 gas insulated equipment. Cap-and-trade regulation as well as implementation of any adopted industry-specific regulations ensures that GHG emissions associated with electricity and other industrial sources are doing their fair share to reach the statewide goals of AB 32 and SB 32. The alternative would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the alternative is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the alternative if applicable. As a result, impacts under significance criterion B would be **less than significant.**

Alternative BS-2: Battery Storage to Address the Distribution Objective

The sizes of FTM BESSs under Alternative BS-2 are not yet known and would depend on future load growth in the Paso Robles area; however, it is likely that GHG emissions associated with BESS construction would be similar or reduced compared to the proposed Estrella Substation. With the exception of a possible flow battery at example FTM Site 6 (i.e., Templeton

Substation), individual BESSs would likely be substantially smaller than the Estrella Substation and would involve less earthwork and heavy equipment, thereby resulting in fewer GHG emissions. Once constructed, BESSs under Alternative BS-2 would be operated remotely and GHG emissions would largely be limited to those from vehicles and equipment used in periodic inspections, maintenance, and repairs, which would not be substantial. No GIS would be included in the FTM BESSs; thus, no emissions of SF_6 would occur during operation. Overall, given that FTM BESSs under Alternative BS-2 would likely involve similar or reduced construction-related GHG emissions compared to the Proposed Project, and would have reduced emissions during operation, it is unlikely that Alternative BS-2 would result in annualized GHG emissions above the 10,000 MT CO_2e threshold.

In many ways, Alternative BS-2 would serve to implement State plans and policies related to GHG emissions reductions. While construction of FTM BESSs under Alternative BS-2 would result in GHG emissions, operation of the BESSs could reduce GHG emissions associated with the electrical grid over the long-term. Specifically, use of battery stored power during high demand periods will reduce the need for higher carbon intensity sources of electricity generation, such as the use of peaker plants, which are fossil-fuel-based. The alternative would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it does not involve generation of electricity (only storage of already generated electricity). GHG emissions from construction equipment use are one-time emissions and would cease once construction of the alternative is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the alternative if applicable.

Overall, FTM BESS sites were selected for illustrative purposes only, BESS installations have not been designed and technologies have not been selected, and the specifics of Alternative BS-2 are unknown. Thus, project-level determinations cannot be made as impacts are speculative. Therefore, consistent with CEQA Guidelines Section 15145, no significance conclusion is provided for any of the significance criteria.

Alternative BS-3: Third Party, Behind-the-Meter Battery Storage with Solar Power

Construction activities under Alternative BS-3 would include deliveries of individual BESS units to customers' properties, installation of the units on-site, and wiring work to connect the BESS to existing electrical systems. BESS units for larger commercial properties could be heavy, may require larger/specialized trucks for delivery, and may require use of a small crane for installation. These activities would be considerably smaller in scale than the Proposed Project and would therefore likely result in fewer GHG emissions. Depending on the size of solar power installations, it is unknown how the construction emissions would compare to the Proposed Project. However, it is unlikely that amortized GHG emissions would be above the 10,000 MT CO_2e threshold. Once installed, BESS and solar facilities under Alternative BS-3 would require minimal operation and maintenance.

Like Alternative BS-2, Alternative BS-3 would largely function to implement the State's plans and policies for GHG emissions reduction. Deployment of BTM BESSs would result in an overall energy efficiency savings as energy stored in BESSs could be released to the grid or used directly by customers during peak periods, thereby avoiding or reducing the need for peaker plant generation (which is typically fossil fuel-based). Likewise, BTM solar units would generate renewable energy that may be stored on-site or discharged to the grid, potentially decreasing

the amount of new conventional generating facilities needed in the future to supply the local area's energy needs, and thereby reducing overall GHG emissions. The alternative would not impede the regulations and policies aimed at decarbonizing the electricity supply such as the RPS as it would potentially generate renewable electricity which would assist in reaching the RPS goals. GHG emissions from construction equipment use are one-time emissions and would cease once construction of the alternative is complete. Any future regulations that may impact operational emissions that may be implemented as part of the statewide goals of SB 32 must be complied with by the alternative if applicable.

Overall, due to the fact that specific locations and characteristics of BTM resources procured under Alternative BS-3 are unknown at this time, project-level impact determinations are not possible as the impacts are speculative. Therefore, consistent with CEQA Guidelines Section 15145, no significance conclusion is reached under any of the significance criteria.

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