

## **C.5 Climate Change/Greenhouse Gas**

This section analyzes whether the Revised Project and PG&E Upgrades result in any new significant impacts related to climate change and greenhouse gas that were not previously identified and disclosed in the 2010 Final EIR, or whether there has been a substantial increase in the severity of any previously identified impacts. As part of this analysis, the section considers changes to the potential changes to regulations, impacts, and mitigation measures.

### **C.5.1 Environmental Setting**

The following section describes changes to the environmental setting that have occurred since 2010. Section C.5.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.5.1.2 describes the environmental setting for the area surrounding the PG&E Upgrades.

#### **C.5.1.1 Revised Solar Project**

The climate change and greenhouse gas environmental setting for the Revised Project site has remained substantially unchanged since approval of the 2010 Final EIR. Panoche Valley remains generally undeveloped and pastoral in character. No new development has occurred, and no major new structures have been built in the valley. Grazing remains the primary land use in the area. No new sources of emissions are present in the project area. The construction schedule for the Revised Project would be compressed to approximately 18 months compared to the Approved Project construction schedule of approximately five years. The generating capacity of the Revised Project would be 247 MW, rather than the 399 MW capacity under the Approved Project.

#### **C.5.1.2 PG&E Upgrades**

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) primarily on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County. The telecommunications system upgrades also include construction of three new microwave communication towers and upgrades to an existing microwave tower. The PG&E Upgrades would include eight new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switchyard, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

The environmental setting for these upgrades includes the area surrounding the Moss Landing–Panoche 230 kV transmission line between the project site and the Panoche Substation, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

These upgrades would occur over a period of 12 to 16 weeks and would be accomplished using a combination of helicopters and ground-based construction equipment.

### **C.5.2 Applicable Regulations, Plans, and Standards**

The applicable regulations, plans, and standards that apply to the assessment of climate change and greenhouse gas impacts within the project area are presented in Section C.5.2 of the 2010 Final EIR. Since 2010, various changes have occurred in the regulatory setting, including the implementation of standards by the California Air Resources Board (CARB) for gas-insulated electrical switchgear and the state-

wide Cap-and-Trade Program. However, the regulatory changes do not substantially alter the project regulatory setting for climate change and GHG. The emissions standard for the use of sulfur hexafluoride (SF<sub>6</sub>) in power transformers and circuit breakers is as follows:

**CARB SF<sub>6</sub> Regulations (17 CCR 95350).** In 2010, CARB adopted a regulation for reducing SF<sub>6</sub> emissions from electric power system gas insulated switchgear. The regulation requires owners of such switchgear to: (1) annually report their SF<sub>6</sub> emissions; (2) determine the emission rate relative to the SF<sub>6</sub> capacity of the switchgear; (3) provide a complete inventory of all gas insulated switchgears and their SF<sub>6</sub> capacities; (4) produce a SF<sub>6</sub> gas container inventory; and (5) keep all information current for CARB enforcement staff inspection and verification.

### C.5.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in any new significant impact or increase the severity of previously identified impacts related to climate change. Section C.9.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in any new or more severe significant impacts. Section C.9.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.9.3.3 presents the updated impact analysis for the Revised Project, and Section C.9.3.4 addresses changes in adopted mitigation measures. Section C.9.3.5 addresses the environmental impacts that would occur as a result of the PG&E Upgrades, and Section C.9.3.6 describes cumulative impacts.

#### C.5.3.1 Significance Criteria

The following significance criteria for climate change/greenhouse gas emissions are from the CEQA Guidelines Appendix G including 2010 amendments. Impacts of the Revised Project and the PG&E Upgrades would be considered significant and would require mitigation if they would:

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

Significance conclusions are presented regarding the significance of each identified impact, per the significance classification system provided in Section C.1 (Introduction to Environmental Analysis).

#### C.5.3.2 Approved Project Impacts and Mitigation Measures

Table C.5-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

**Table C.5-1. Summary of Impacts and Mitigation: Climate Change/Greenhouse Gas**

Impact No. and Text	Mitigation Required	CEQA Conclusion
Impact CC-1: Construction would generate exhaust emissions of greenhouse gases.	None.	Class III
Impact CC-2: Operation, maintenance, and inspections would generate exhaust emissions of greenhouse gases.	None.	Class III
Impact CC-3: Power generated by operation of the solar power plant would avoid greenhouse gas emissions and land use conversion related to the solar project would alter natural carbon sinks.	None.	Class IV

**Table C.5-1. Summary of Impacts and Mitigation: Climate Change/Greenhouse Gas**

Impact No. and Text	Mitigation Required	CEQA Conclusion
Impact CC-4: The project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	None.	No Impact
Impact CC-5: Contribute to cumulatively considerable greenhouse gas emissions.	None.	Class III

### C.5.3.3 Revised Solar Project Impacts

Four climate change impacts are addressed in this section; cumulative impacts are evaluated in Section C.5.3.6.

***Impact CC-1: Construction would generate exhaust emissions of greenhouse gases (Class III)***

The Approved Project would have had a generating capacity of 399 MW, with 2,203 acres of permanent disturbance, and the Revised Project would generate 247 MW with 1,888 acres of permanent disturbance. The expected construction activity for the originally proposed 420 MW solar project was estimated at approximately 43,900 metric tonnes of CO<sub>2</sub>-equivalent (based on Applicant estimates, see Appendix 3 of the 2010 Final EIR for supporting calculations). The Revised Project would be about 51% of the fenced area of the originally proposed project and 78% of the fenced area of the Approved Project; so the Revised Project would be expected to have proportionally fewer GHG emissions from the use of construction equipment and employee commuting. Although the construction schedule for the Revised Project would be compressed to approximately 18 months (compared to the Approved Project schedule of approximately 5 years), the emissions of the Revised Project would still be amortized over the 30-year life of the project. Total emissions are estimated at approximately 22,390 metric tonnes of CO<sub>2</sub> equivalent (about 51% of those of the originally proposed project and about 78% of those of the Approved Project because the Revised Project would involve a smaller development overall and less overall ground disturbance). Therefore, construction emissions amortized over the anticipated 30-year life of the project would be about 746 metric tonnes CO<sub>2</sub> per year, not exceeding the CARB Mandatory Reporting applicability level of 2,500 metric tonnes CO<sub>2</sub> per year. Therefore, the short-term emission of greenhouse gas during construction would remain adverse but less than significant (Class III).

***Impact CC-2: Operation, maintenance, and inspections would generate exhaust emissions of greenhouse gases (Class III)***

Greenhouse gas emissions would occur during operation, maintenance, and inspection of the Revised Project from the use of carbon-based fuels for on-site vehicles and off-site delivery vehicles. The Revised Project would be about 78% of the fenced area of the Approved Project, leading to a small reduction in on-site vehicle use for maintenance and inspections. Also, as described in detail in Section 6.5.1.1 of the 2010 Final EIR, the greenhouse gas sulfur hexafluoride (SF<sub>6</sub>), which serves to insulate transformers in electric substations, would be used at the PG&E switching station. The quantity of SF<sub>6</sub> would be small in quantity and emission rate and would easily be controlled or minimized because the gas can be reused and recycled. Greenhouse gas emissions for operation, maintenance, and inspections would be lower for the Revised Project than for the Approved Project, and this impact would remain less than significant (Class III).

***Impact CC-3: Power generated by operation of the solar power plant would avoid greenhouse gas emissions and land use conversion related to the solar project would alter natural carbon sinks (Class IV)***

The Revised Project would generate about 62% of the electrical energy of the Approved Project, and therefore would offset less greenhouse gas emissions from fossil fuel-fired California and western U.S. power plants. The potential to alter natural carbon sinks would be lower than that of the Approved Project because the Revised Project would involve less overall ground disturbance. Because the renewable energy generated by the Revised Project would still offset fossil fuel-fired emissions of GHG, this impact would remain beneficial (Class IV).

***Impact CC-4: The project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases (No Impact)***

The Revised Project would remain a notable contributor to the successful implementation of AB32. Like the Approved Project, the Revised Project would not conflict with any applicable plan, policy or regulation for greenhouse gas reduction or managing global climate change. No impact would occur.

### **C.5.3.4 Changes to Adopted Mitigation Measures**

The 2010 Final EIR concluded that the Approved Project would result in a less than significant climate change impacts; therefore, no mitigation measures were recommended or required for the Approved Project. As documented above, the same is true for the Revised Project.

### **C.5.3.5 PG&E Upgrades Impacts**

The temporary and permanent climate change/greenhouse gas impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only the Impacts CC-1, CC-2 and CC-5 apply to the PG&E Upgrades and are discussed. The following two impacts would not occur as a result of construction or operation of the PG&E Upgrades, and are not further addressed:

- Impact CC-3: Power generated by operation of the solar power plant would avoid greenhouse gas emissions and land use conversion related to the solar project would alter natural carbon sinks
- Impact CC-4: The project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

***Impact CC-1: Construction would generate exhaust emissions of greenhouse gases (Class III)***

Construction of the PG&E Upgrades would generate exhaust GHG emissions through the use of helicopters and ground-based construction equipment. Construction activities would occur over a period of 12 to 16 weeks and would include installation of new OPGW primarily on existing structures as well as construction of up to three new microwave communication towers. PG&E would also construct 8 new tubular steel poles (TSPs) to tie the existing transmission line into the new PG&E switchyard located within the Revised Project boundaries. Although these activities would generate exhaust emissions of GHG, the total volume of emissions would not occur at a significant level due to the short construction period, the limited extent of equipment use, and the small footprint of the proposed upgrades. This impact would be less than significant (Class III).

***Impact CC-2: Operation, maintenance, and inspections would generate exhaust emissions of greenhouse gases (Class III)***

Operation, maintenance, and inspections of the PG&E Upgrades would cause greenhouse gas emissions from the use of carbon-based fuels for maintenance and inspection vehicles. However, these inspections would be completed in conjunction with PG&E's existing and ongoing routine inspection program of the transmission line; there would be no separate or increased inspection protocol for the OPGW that would be installed. The operation and maintenance activities and emissions would be comparable to those occurring for the existing transmission and communication systems in the setting. These emissions would not occur in quantities notably different from those already occurring as the existing systems are inspected and maintained. The impact would be less than significant (Class III).

### **C.5.3.6 Cumulative Impacts**

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D, and now include numerous solar power facilities. These other solar generation projects will jointly contribute to the overall reduction of greenhouse gas by offsetting current and past generation from coal and natural gas fired power plants.

Greenhouse gas emissions would be generated by vehicles and equipment used in construction, operation, and maintenance of the Revised Project and the PG&E Upgrades. These emissions could combine with emissions from other projects in the region, but those emissions are offset by the larger reductions in greenhouse gas resulting from reductions in fossil fueled generation facilities. Therefore, the overall contribution to cumulative impacts for greenhouse gas emissions would be negligible.

## **C.5.4 Summary of Impacts**

The significance of impacts for climate change/greenhouse gas for the Revised Project and for the PG&E Upgrades is summarized in Sections C.5.4.1 and C.5.4.2. Section C.5.4.3 summarizes the impacts of all project components.

### **C.5.4.1 Revised Solar Project**

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.5-1 remain accurate. The Revised Project would result in less than significant (Class III) impacts on climate change/greenhouse gas due to the generation of exhaust emissions during construction, operations, and maintenance. Operation of the Revised Project would result in a beneficial (Class IV) impact through the avoidance of emissions from fossil fuel-fired power plants. Construction and operation of the Revised Project would cause a less than significant (Class III) contribution to cumulatively considerable greenhouse gas emissions.

### **C.5.4.2 PG&E Upgrades**

The PG&E Upgrades would result in less than significant (Class III) impacts on climate change/greenhouse gas due to the generation of exhaust emissions during construction, operations, and maintenance. Construction and operation of the PG&E Upgrades would cause a less than significant (Class III) contribution to cumulative greenhouse gas emissions.

### **C.5.4.3 Overall Significance of Impacts**

Greenhouse gas impacts of the Revised Project and the PG&E Upgrades would remain less than significant. The electricity generated by the Revised Project would reduce regional GHG emissions, resulting in an overall beneficial impact.