

## 4.1 GREENHOUSE GAS EMISSIONS

---

As described in detail below the Greenhouse Gas Emissions of the Modified Project are expected to be less than those of the Approved Project.

### 4.1.1 Summary of Project Changes Related to Greenhouse Gas Emissions

The Modified Project would require slightly different construction techniques than those identified in the Final Commission Decision for the Approved Project. Details are included in Appendix B, and are summarized below.

- **Reduction in Expected Truck Trips associated both with Deliveries and Construction Workers:** The Modified Project construction workforce would be reduced as the need for the high quantities of assembly workers is specific to the SunCatcher. Similarly, because of their dimensions, the PV modules might be packaged more efficiently, reducing deliveries associated with the Modified Project.
- **Phasing:** The Modified Project would develop a Phase 1 of up to 294 MW south of the railroad. This change in phasing would require the movement of the main services complex and substation to the area south of the railroad and would postpone the construction of the bridge to Phase 2, compared to beginning in Month 7 of the Approved Project. Phase 2 would consist of up to 324 MW that will be developed north of the railroad.
- **Road and Route Treatment:** As with the Approved Project, the main access road would be paved and all other roads developed in the Modified Project would be treated with Soiltac or the equivalent. However, the length and quantities of roads would decrease under the Modified Project layout and many roads in the Approved Project would be replaced with unimproved module access points, which would require little to no development during construction.
- **Total Mileage Decrease:** As a result of moving the main services complex and on-site substation south of the railroad, the average distances traveled would be much shorter in the Modified Project than in the Approved Project. For example, the approximate distance from the Modified Project site entrance to the main services complex would be 1.26 miles, a shorter distance than that contemplated in the Approved Project.

Additionally, the Greenhouse Gas Emissions associated with the operation of the Modified Project would be less than the Approved Project. Details are included in Appendix B, and are summarized below.

- Reduction in Expected Modified Project Operational Workforce: The Modified Project operational workforce would be reduced as the maintenance requirements for PV technology would be less than those contemplated for the Approved Project.
- Operational Fleet: The revised operational fleet would require fewer and smaller vehicles to conduct the panel washing, inspections, and minor maintenance tasks. No significant changes would be made to the remaining maintenance fleet.
- Road and Route Treatment: As with the Approved Project, the main access road would be paved, and all other roads developed in the Modified Project would be treated with Soiltac or the equivalent. However, the length and quantities of roads would be decreased in the Modified Project layout, and many roads in the Approved Project would be replaced with unimproved module access points. The unimproved module access points would be utilized up to four times a year for maintenance and PV module washing.
- Washing Methods: PV modules would be washed using the unimproved module access points. The vehicle operator on these paths would park at one or two places along the access lane, exit the vehicle, and manually spray multiple PV modules with a spray wand. PV modules would be manually sprayed with a spray wand, via a water tank and hose reel attached to the PV Module Washing Truck.

#### **4.1.2 Changes in Greenhouse Gas Emissions**

GHG emissions generated from construction activities were calculated using revised information described above and shown in Appendix B, including revised vehicle inventory and travel distances. Tables 4.1-1 and 4.1-2 present the GHG emissions estimated during the construction phase and operation phases for the Modified Project.

**TABLE 4.1-1  
ESTIMATED ENTIRE CONSTRUCTION PERIOD GREENHOUSE GASES EMISSIONS (METRIC TONS)  
FOR THE MODIFIED PROJECT**

Activity	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>On-Site Construction Emissions</b>				
<b>On-Site Combustion Emissions</b>				
Construction Equipment	7,760.21	1.99	--	7,802.09
Worker Vehicles	846.46	0.08	0.08	871.70
Security Vehicles	110.51	0.01	0.00	111.68
On-site Generators	11,102.63	0.44	0.11	11,145.73
All Delivery Trucks	1,470.10	0.02	0.01	1,474.83
<b>Subtotal of On-site Combustion Emissions</b>	<b>21,289.91</b>	<b>2.53</b>	<b>0.20</b>	<b>21,406.03</b>
<b>On-Site Fugitive Dust Emissions</b>				
Construction Equipment				
Worker Vehicles				
Security Vehicles				
All Delivery Trucks				
<b>Subtotal of On-Site Fugitive Emissions</b>				
<b>Subtotal of On-Site Emissions</b>	<b>21,289.91</b>	<b>2.53</b>	<b>0.20</b>	<b>21,406.03</b>
<b>Off-Site On-Road Emissions</b>				
<b>Off-Site Combustion Emissions</b>				
Worker Vehicles	5,301.27	1.27	1.17	5,690.44
All Delivery Trucks	7,113.65	0.02	0.02	7,120.44
<b>Subtotal of Off-Site Combustion Emissions</b>	<b>12,414.91</b>	<b>1.29</b>	<b>1.19</b>	<b>12,810.88</b>
<b>Off-Site Paved Road Fugitive Emissions</b>				
Worker Vehicles				
All Delivery Trucks				
<b>Subtotal of Off-Site Fugitive Emissions</b>				
<b>Subtotal of Off-Site Emissions</b>	<b>12,414.91</b>	<b>1.29</b>	<b>1.19</b>	<b>12,810.88</b>
<b>Total Entire Construction Period Emissions</b>	<b>33,704.82</b>	<b>3.83</b>	<b>1.39</b>	<b>34,216.91</b>

Acronyms:  
CO<sub>2</sub> = carbon dioxide  
CO<sub>2</sub>e = carbon dioxide equivalent

CH<sub>4</sub> = methane  
N<sub>2</sub>O = nitrous oxide  
-- = not applicable

**TABLE 4.1-2  
ESTIMATED ANNUAL MAXIMUM OPERATIONAL GREENHOUSE GAS EMISSIONS (METRIC  
TONS/YEAR)**

Activity	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	SF <sub>6</sub>	CO <sub>2</sub> e
<b>On-Site Operational Emissions</b>					
<b>On-Site Combustion Emissions</b>					
Diesel Generator	0.81	0.00	0.00	0.00	0.82
Maintenance & Security Vehicles and Equipment	1,140.06	0.21	0.07	0.00	1,072.72
Worker Vehicles	145.01	0.01	0.01	0.00	149.13
Visitor Cars and Delivery Trucks	10.91	0.00	0.00	0.00	11.16
Potential SF <sub>6</sub> leakage emissions from proposed circuit breakers and other transmissions system equipment				0.02	384.42
<b>Subtotal of On-Site Emissions</b>	<b>1,296.79</b>	<b>0.22</b>	<b>0.08</b>	<b>0.02</b>	<b>1,618.24</b>
<b>Off-Site On-Road Emissions</b>					
<b>Off-Site Combustion Emissions</b>					
Worker Vehicles	990.04	0.23	0.21	0.00	1,059.28
Visitor Cars and Delivery Trucks	160.67	0.03	0.03	0.00	169.58
<b>Subtotal of Off-Site Emissions</b>	<b>1,150.71</b>	<b>0.26</b>	<b>0.23</b>	<b>0.00</b>	<b>1,228.86</b>
<b>Total Maximum Emissions</b>	<b>2,447.50</b>	<b>0.48</b>	<b>0.31</b>	<b>0.02</b>	<b>2,847.10</b>

Acronyms:  
CO<sub>2</sub> = carbon dioxide  
CO<sub>2</sub>e = carbon dioxide equivalent

CH<sub>4</sub> = methane  
NO<sub>2</sub> = nitrous oxide  
SF<sub>6</sub> = sulfur hexafluoride