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RE: Greenhouse Gas (GHG) Screening Letter– Rugged Solar Farm - PDS2017-MUP-12-007W1, PDS2017-MUP-12-007TE, PDS2017-ER-12-21-003A, PDS2017-ER-12-21-003B – San Diego County

The purpose of this greenhouse gas (GHG) screening letter is to identify GHG impacts, if any, which may be created through the modification and extension of an approved Major Use Permit (PDS2017-MUP-12-007). The Rugged Solar Project (Approved Project) is one of four individual solar energy projects analyzed in the Soitec Solar Development Program EIR (PEIR), certified by the County Board of Supervisors in 2015. The Project is located in the unincorporated community of Boulevard in eastern portion of San Diego County, CA.

The purpose of this analysis is to determine GHG significance for construction and operations of the modified Project under CEQA. More specifically, this screening analysis is to provide documentation showing Project conformance with greenhouse gas laws and regulations. Specific GHG regulations and policies are attached to this letter in **Attachment A**. GHGs of concern, as analyzed in this study, are Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) and Sulfur Hexafluoride (SF₆). To simplify GHG calculations, CH₄, N₂O and SF₆ are converted to equivalent amounts of CO₂ and are identified as carbon dioxide equivalent (MTCO₂e). CO₂e is calculated by multiplying the calculated emission rates of CH₄, N₂O and SF₆ by a Global Warming Potential (GWP) published by the Intergovernmental Panel on Climate Change (IPCC) 2007 report as source data for GWP factors for both CH₄ and N₂O using the 100-year periods of 25, 298, 22,800 respectively (IPCC, 2007).

The County currently does not have a locally adopted numeric threshold for determining significance. The County does recognize screening thresholds published by the California Air Pollution Control Officers Association (CAPCOA) for determining the need for additional analysis and mitigation for GHG-related impacts under CEQA (CAPCOA, 2008). The CAPCOA white paper recommends a 900 MT CO₂e/year screening level to determine the size of projects that would be likely to have a less than considerable contribution to the cumulative impact of climate change. Though the CAPCOA 900 MTCO₂e threshold was set to a 2020 horizon year, the

threshold is still relevant and is in fact more conservative when compared to other districts for CEQA level studies. For example, the Sacramento Metropolitan Air Quality Management District (SMAQMD) utilizes a 1,100 MT CO₂e which was just published in April of 2020 **Invalid source specified.** to be in line with the State's latest GHG emission reduction targets. Therefore, the CAPCOA threshold is still compliant with statewide reduction targets. Furthermore, it should be noted that this threshold was also utilized for the approved project.

The proposed Project (Modified Project) would reduce the development footprint from 450 acres to 391.2 acres and would modify the technology utilized for power generation. The power output would also be slightly less and would produce up to 74 megawatts (MW) of alternating current (AC) (MWac) photovoltaic (PV) power compared to the 80 MWac system currently approved. The Modified Project would utilize a simpler tracking system (single axis vice dual axis) when compared to the Approved Project and would require less maintenance, less water for panel cleanup and a smaller footprint per watt installed. The Proposed Project would produce up to 74 MWac generating capacity. The Modified project would also include fewer inverter stations, to convert the DC power to AC power as compared to the Approved Project.

GHG Modeling

GHG impacts related to construction and daily operations were calculated using CalEEMod 2016.3.2 model, which was developed by BREEZE Software for SCAQMD in 2017. The County recognizes CalEEMod as an acceptable model for projects of this nature. It should be noted that CalEEMod has since developed version 2020.4.0 though at the time this report was started was not available. CalEEMod 2016.3.2 is conservative however and has been found to yield slightly higher emissions than version 2020.4.0.

Proposed Project Related Construction Emissions

The construction module in CalEEMod is used to calculate the emissions associated with the construction of the project. The CalEEMod input/output model is shown in **Attachments B** to this report. GHG emissions for construction are provided as a total GHG emission generated over the construction duration. The Project construction dates were estimated based on a construction kickoff starting early 2022 with construction ending later that year. The earthwork associated with Project construction would include site preparation (Clearing and Grubbing) and grading for access roads and contouring for solar. Following the completion of earthwork activities, paving and building construction activities occur. The number of vehicle trips generated during construction activities would vary from phase to phase. Grading and earthwork activities would generate as many as 216 daily trips, which represents the greatest number of

trips generated during project construction however an average of 162 average daily trips would be generated over the project duration. It should be noted however, CalEEMod was manually updated to reflect the maximum number of trips per construction task and include trips for water or material deliveries. In addition, CalEEMod was updated to reflect an average worker trip length of 35 miles each way.

Table 1 shows the expected timeframes for the construction activities for all on-site infrastructure, facilities, improvements, as well as the expected number of pieces of equipment, based on information provided by the Project applicant. Additionally, earthwork activities will be balanced.

Table 1: Expected Construction Equipment

| Equipment Identification | Proposed Start | Proposed Complete | Quantity |
|---|-----------------------|--------------------------|-----------------|
| Clear and Grubb | 01/16/2022 | 01/31/2022 | |
| Crawler Tractors | | | 2 |
| Off-Highway Trucks | | | 2 |
| Tractors/Loaders/Backhoes | | | 1 |
| Access Roads, Contouring for Solar Arrays | 02/01/2022 | 03/31/2022 | |
| Crawler Tractors | | | 1 |
| Excavators | | | 1 |
| Off-Highway Trucks | | | 2 |
| Rollers | | | 1 |
| Solar Array & Facilities Construction | 04/01/2022 | 09/30/2022 | |
| Cranes | | | 2 |
| Forklifts | | | 2 |
| Generator Sets | | | 2 |
| Other Construction Equipment | | | 2 |
| Tractors/Loaders/Backhoes | | | 1 |
| Offsite Gen-Tie Connection (to Substation) | 10/01/2022 | 12/31/2022 | |
| Cranes | | | 2 |
| Forklifts | | | 2 |
| Off-Highway Trucks | | | 2 |
| Tractors/Loaders/Backhoes | | | 2 |
| Site Entrance Paving & Internal Access Finish Work | 10/01/2022 | 12/30/2022 | |
| Off-Highway Trucks | | | 9 |
| Pavers | | | 2 |
| Rollers | | | 1 |
| Painting O&M Building | 10/01/2022 | 10/14/2022 | |
| Air Compressors | | | 1 |

Based on modeling conducted, construction of the project would generate approximately 1,301 MT CO₂e over the construction life of the project. Based on South Coast Air Quality Management District (SCAQMD) methodology, it is recommended to average this emission over a 30 year duration. Given the fact that the total emissions would ultimately contribute to cumulative levels, it is acceptable to average the total construction emission over the life of the project which is assumed to be 30 years. Given this, the project would add approximately 43.3 MTCO₂e per year. A summary of the construction emissions is shown in Table 2. At some point, after the lifecycle of the proposed Project is completed, decommissioning would be likely. Based on the 2015 PEIR, decommissions impacts would be less than construction emissions since the decommissioning process would have a much shorter duration. Since the proposed project is smaller in footprint, size and has a simpler technology (single axis tracker vs dual axis tracker) decommissioning requirements for the Proposed Project would be less than was previously approved and would also be less than significant.

Table 2: Annual Construction Emissions MT CO₂e

| Year | Bio-CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e (MT) |
|--|---------|----------|-----------|-----|-----|--------------|
| 2022 | 0 | 1,294 | 1,294 | 0 | 0 | 1,301 |
| Total | | | | | | 1,301 |
| Amortized 30 Year Annual Emissions | | | | | | 43.3 |
| Expected Construction emissions are based upon CalEEMod modeling assumptions (Table 1 above) | | | | | | |

Operations

Once construction is completed, the proposed Project would generate GHG emissions from operational maintenance (O&M) and regular employee daily trips. Maintenance activities such as cleaning panels would occur once per year and water will be utilized within the 6,300 Square Foot (SF) O&M facility. The modified Project is estimated to consume 1.41 acre feet per year and will include all water necessary to wash panels and apply soil stabilizers once per year. Full operations would be expected in 2023. CalEEMod was updated to reflect these project specific parameters. Also, all water onsite will be sourced from onsite wells. For this purpose, the modeling has been updated to remove intensities for offsite supply and offsite treatment with water distribution intensities remaining in the model.

The project would generate approximately 8 trips per day (Dudek, 2022) within the modified project and was assumed to include an average distance of 35 miles one way. This assumption was utilized for consistency with the existing approved MUP.

Energy and waste generation were assumed for the 6,300 SF O&M building as a general light industrial building within CalEEMod. In addition, the solar tracking system and internal energy demand of the system is assumed to require some quantity of electricity. Although the single axis system is anticipated to utilize less energy than the Approved dual axis system, the energy consumed by the dual axis tracker system analyzed and approved in 2015 was assumed and included in this analysis which is 1,448,103 kilowatt hours (kWh) per year (Dudek, 2013).

The proposed project would generate renewable energy used on the San Diego Gas and Electric (SDG&E) grid. By default, whenever these emissions are distributed within the grid, the region as a whole is exposed to reduced GHG emissions cumulatively. Since GHG emissions are reduced as a whole, the net GHG emission is negative for the project. A system of this size using a single axis tracking system would generate at least 224,435,216 kilowatt hours (kWh) per year (kWh/Year) based on the National Renewable Energy Laboratory (NREL, 2021) PV Watts Calculator (shown as ***Attachment C*** to this report). CalEEMod 2016.3.2 has been updated to include the estimated electrical generation for the project site. The Project would have the potential to avoid generation of 73,603 MT CO₂e yearly.

Under Senate Bill 100 (SB 100) the State has established a new statewide policy goal that calls for eligible renewable energy resources and zero-carbon resources to supply 100 percent of electricity retail sales and 100 percent of electricity procured to serve all state agencies by December 31, 2045. This would in effect reduce all electrical energy demand to Zero within the state. After 2045 when 100% of the energy sold within the state is renewable electrical energy utilized within a project site would be 0 MT CO₂e regardless of how much electrical energy is utilized. This would also reduce water conveyance emissions to zero as well since water conveyance GHGs are generated from electricity use.

The project site would install gas-insulated circuit breakers which utilize Sulfur hexafluoride SF₆. For purposes of this screening assessment SF₆ from gas-insulated circuit breakers is assumed to be released at a consistent rate. CalEEMod does not provide a calculation means for SF₆ but was estimated at 4.07 MT CO₂e/year in 2015 (Dudek, 2013). for the Approved Project and is assumed in this analysis as well.

A summary of the Project emissions through December 2045 are provided in Table 3 below. Based upon the calculations, the annual emission for the project including construction would generate 556 MT CO₂e through 2045 which would not exceed CAPCOA's 900 MT CO₂e screening threshold and would be considered less than significant. Beyond 2045, all electrical energy consumed by the project would generate zero GHG emissions and would reduce onsite generation to mobile, waste and SF₆ sources or 44 MT CO₂e from operations and 43 MT CO₂e

for the remainder of the 30 year amortization of construction or to the year 2053. Beyond 2053, only operational emissions would occur as can be seen in Table 3.

Table 3: Operational Emissions Summary MT/Year

| Year | Bio-CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e (MT/Yr) |
|---|----------------|-----------------|------------------|------------|------------|---------------------------|
| Area | 0 | 0 | 0 | 0 | 0 | 0 |
| Electricity | 0 | 467 | 467 | 0 | 0 | 466 ¹ |
| Natural Gas | 0 | 3 | 3 | 0 | 0 | 3 |
| Mobile | 0 | 37 | 37 | 0 | 0 | 37 |
| Waste | 1 | 0 | 1 | 0 | 0 | 3 |
| Water | 0 | 0 | 0 | 0 | 0 | 0 |
| SF ₆ | | | | | | 4 |
| Amortized Construction Emissions (Table 2 above) | | | | | | 43 |
| Sub Total (2023-2045) | | | | | | 556 |
| Sub Total (2046-2053) | | | | | | 90 |
| Sub Total (MT/Year Beyond 2053) | | | | | | 47 |
| Screening Threshold | | | | | | 900 |
| Exceeds CAPCOA Screening Threshold? | | | | | | No |
| Electrical Avoidance from onsite Solar Generation Per Year | | | | | | 73,603² |
| Total Electrical Energy Avoidance through 2045 (MT CO₂e / 22 years) | | | | | | 1,619,266 |
| Data is presented in decimal format and may have rounding errors. | | | | | | |
| 1. GHG emissions from electrical consumption would be zero beyond 2045. | | | | | | |
| 2. Based on CalEEMod, Annual Electrical Avoidance from solar is 73,603 MT/Yr. Minus the annual electrical consumption of 466 MT/Yr, which results in 73,138 Mt/Yr as shown in the CalEEMod outputs. | | | | | | |

GHG avoidance from the proposed project was only assumed through 2045. After 2045, 100 percent of all electricity consumed in California would be from renewable sources which effectively generate zero GHG emissions, per SB 100. Based on this, the project would cap GHG avoidance to 1,619,266 MT CO₂e (73,603 times 22 years).

Conclusion

This GHG analysis generally is consistent with the original approved report. Notable GHG reductions from what was previously analyzed was from traffic emissions because the FEIR assumed that the project would generate as many as 40 trips per day for 264 days per year as well as additional truck trips. The revised Project description indicates there would be 8 trips per day. Electrical Generation in the FEIR include reductions for a renewable portfolio however no such credit was applied within this analysis. Finally, the proposed Project would not require an Emergency Generator and was not included in this analysis.

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Since this proposed Project would produce energy with zero GHG emissions, the energy generated by the project would contribute to the County's electrical demand and shift that demand from carbon based fuel sources which would have the potential to generate 73,603 MT CO₂e yearly to non-carbon based renewables which produce zero GHG emissions as shown in Table 3 above. Based on this, the project would have a less than significant GHG impact. If you have any questions, please do not hesitate to contact me directly at (760) 473-1253.

Sincerely,
Ldn Consulting, Inc.



Jeremy Loudon

Attachments:

Attachment A: GHG regulations

Attachment B: CalEEMod Annual Output

Attachment C: PV Watts Solar Energy Generation

References:

CAPCOA. (2008). *CAPCOA*. Retrieved from <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>

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IPCC. (2007). *IPCC Fourth Assessment Report: Climate Change 2007 : Working Group I: The Physical Science Basis*. Retrieved from https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

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Attachment A: CLIMATE CHANGE REGULATORY ENVIRONMENT

Federal

Massachusetts v. EPA

On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO₂, CH₄, N₂O, Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the “endangerment finding.”
- The Administrator further found the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the “cause or contribute finding.”

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

State

State Greenhouse Gas Targets

Executive Order S-3-05

Executive Order (EO) S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan

In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, the CARB is responsible for and is recognized as having the expertise to carry out and develop the programs and regulations necessary to achieve the GHG emissions reduction mandate of AB 32. Therefore, in furtherance of AB 32, CARB adopted regulations requiring the reporting and verification of GHG emissions from specified sources, such as industrial facilities, fuel suppliers and electricity importers (see Health & Safety Code Section 35830; Cal. Code Regs., tit. 17, §§95100 et seq.). CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 million metric tons (MMT) CO₂e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change (Scoping Plan)* in accordance with Health and Safety Code Section 38561. The *Scoping Plan* established an overall framework for the measures that will be implemented to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The 2008 *Scoping Plan* evaluated opportunities for sector-specific reductions, integrated all CARB and Climate Action Team¹ early actions and additional GHG reduction features by both entities, identified additional measures to be pursued as regulations, and outlined the role of a cap-and-trade program. The key elements of the 2008 *Scoping Plan* include the following (CARB, 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33 percent
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard

¹ The Climate Action Team is comprised of state agency secretaries and heads of state agencies, boards and departments; these members work to coordinate statewide efforts to implement GHG emissions reduction programs and adaptation programs.

6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

In the 2008 *Scoping Plan*, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the *Scoping Plan's* Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations (CARB, 2011). Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. When the 2020 emissions level projection was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (12 percent to 20 percent), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework (First Update)*. The stated purpose of the *First Update* was to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the *First Update*, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050." Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The *First Update* identified key

recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the *First Update*, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the *First Update*, CARB recalculated the state's 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO₂e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

In November 2017, CARB released *California's 2017 Climate Change Scoping Plan (Second Update)* for public review and comment (CARB, 2017). This update proposes CARB's strategy for achieving the state's 2030 GHG target as established in SB 32 (discussed below). The strategy includes continuing the Cap-and-Trade Program through 2030², inclusive policies and broad support for clean technologies, enhanced industrial efficiency and competitiveness, prioritization of transportation sustainability, continued leadership on clean energy, putting waste resources to beneficial use, supporting resilient agricultural and rural economics and natural and working lands, securing California's water supplies, and cleaning the air and public health.

When discussing project-level GHG emissions reduction actions and thresholds, the *Second Update* states "[a]chieving no additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development." However, the *Second Update* also recognizes that such an achievement "may not be feasible or appropriate for every project ... and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA." CARB's Governing Board adopted the *Second Update* in December 2017.

² In July 2017, AB 398 was enacted into law, thereby extending the legislatively-authorized lifetime of the Cap-and-Trade Program to December 31, 2030.

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim goal of reducing statewide GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050 as set forth in S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's *Scoping Plan* to express the 2030 target in terms of MMT CO₂e. The EO also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were required to prepare GHG reduction plans by September 2015, followed by a report on action taken in relation to these plans in June 2016.

SB 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction target; make changes to CARB's membership, and increase legislative oversight of CARB's climate change-based activities; and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies.

AB 197 also added two members of the Legislature to CARB as nonvoting members. The legislation further requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and identify specific information for GHG emissions reduction measures when updating the scoping plan, including information regarding the range of projected GHG emissions and air pollution reductions that result from each measure and the cost-effectiveness (including avoided social costs) of each measure (see Health & Safety Code Section 38562.7).

EO B-55-18

In 2018, the Governor expanded upon EO S-3-05 by issuing Executive Order B-55-18 and creating a statewide goal of carbon neutrality by 2045. EO B-55-18 identifies the California Air Resources Board as the lead agency to develop a framework for implementation and progress tracking toward this goal. It should be noted that consistency with a statewide

carbon neutrality target by 2045 represents the Governor's policy goal but is not required to make a significance determination. The state has already determined that 80% below 1990 levels by 2050 is a long-term target that represents California's share of emissions reductions to stabilize and limit global warming and "avoid dangerous climate change". EO B-30-15 sets forth the 2050 target endorsed by the Intergovernmental Panel on Climate Change's finding and notes that the state's 2050 target will "attain a level of emissions necessary to avoid dangerous climate change" because it may limit global warming to 2 degrees Celsius by 2050.

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new buildings and alterations or additions to existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2016 Title 24 standards, which went into effect on January 1, 2017, are the currently applicable standards. When comparing the 2013 and 2016 standards for electrical consumption, it is expected that low-rise, single-family detached homes and multi-family homes would use 12 percent and 15 percent less electricity under the 2016 standards, respectively. Similarly, implementation of the 2016 standards is expected to reduce natural gas consumption by 21 percent in single-family homes and 31 percent in multi-family homes. Newly constructed non-residential buildings are estimated to achieve a 5 percent reduction in electricity consumption under the 2016 standards and no significant change relative to natural gas consumption (California Energy Commission, 2015). The current version of CalEEMod used in this analysis employs, as a default parameter, the 2016 Title 24 standards to estimate GHG emissions.

The Project would be required, at a minimum, to comply with the latest version of Title 24 standards at the time the Project seeks building permits. This will likely be the 2019 standards, as those standards went into effect on January 1, 2020. The 2019 standards improve upon the 2016 standards for residential and nonresidential buildings. One of the

most notable changes in the 2019 standards is the requirement for the installation of rooftop solar on residential buildings (California Energy Commission, 2017). It should be noted that the State updates these regulations every three years. Thus, throughout Project construction, buildings will need comply with the most recently adopted standards.

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CalGreen, and 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 initially 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 and schools and hospitals. The CalGreen 2019 standards became effective on January 1, 2020. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- Sixty-five (65) percent of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of EV charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CalGreen standards for residential uses include mandatory measures primarily for water and energy efficiency (CBSC, 2019). The project would be required to utilize the latest CalGreen standards.

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air

conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwashers; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Mobile Sources

AB 1493

In response to the transportation sector accounting for more than half of California's CO₂ emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30 percent (CARB, Clean Car Standards - Pavley, Assembly Bill 1493, 2017).

EO S-1-07

Issued in January 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO₂e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

In 2018, CARB extended and expanded the Low Carbon Fuel Standard regulations to include a 20 percent target for reduction in carbon intensity by 2030.

SB 375

SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPOs) are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible and if implemented, the GHG reduction targets. If a SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for SANDAG adopted in 2010 are a 7 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035; the targets are expressed as a percent change in per capita passenger vehicle GHG emissions relative to 2005.

In October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*, which contains the region's current SCS. In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region. More specifically, as set forth in CARB Executive Order G-15-075, CARB determined that SANDAG's SCS would achieve a 15 percent per capita reduction by 2020 and a 21 percent per capita reduction by 2035.

In 2018, CARB updated the SB 375 targets. For purposes of SANDAG, the updated targets include a 15 percent reduction in emissions per capita by 2020 and a 19 percent reduction by 2035. SANDAG is in the process of preparing its next SCS, which will consider whether and how the region could attain these reduction targets.

Safer Affordable Fuel-Efficient Vehicle Rule

In August 2019, the U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) jointly published a notice of the proposed rulemaking for the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule). The SAFE Vehicles Rule proposes amended Corporate Average

Fuel Economy (CAFE) and Light-Duty Vehicle Greenhouse Gas Emissions Standards. This Notice of Proposed Rulemaking (NPRM) was the first formal step in setting the 2021-2026 Model Year (MY) standards that must be achieved by each automaker for its car and light-duty truck fleet (US EPA, 2018). Part One of the SAFE Rule withdrew the State of California's waiver, afforded under the CAA to set GHG and zero-emissions vehicle (ZEV) standards separate from the federal government and became effective in November 2019. In March 2020, Part Two of the SAFE Rule was published which set amended fuel economy and CO₂ standards for Passenger Cars and Light Trucks for model years 2021 through 2026. (US EPA, 2020).

The SAFE Rule relaxed federal greenhouse gas emissions and CAFE standards to increase in stringency at only about 1.5 percent (%) per year from model year (MY) 2020 levels over MYs 2021–2026. The previously established emission standards and related “augural” fuel economy standards would have achieved about 4% per year improvements through MY 2025.

CARB has prepared off-model adjustment factors for the Emissions Factors model (EMFAC) to account for the Final SAFE Rule. These adjustment factors account for changes in criteria pollutant estimates from mobile sources for NO₂, respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and carbon monoxide (CO). Similar adjustment factors were developed by CARB for CO₂ and are applied in this analysis to account for the potential changes to estimate vehicle GHG emissions as a result of the SAFE Rule (CARB, 2020).

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2017). To improve air quality, CARB also has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that, in 2025, cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, also has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025 (California Air Resources Board, 2012).

The Zero Emission Vehicle (ZEV) program acts as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles (PHEVs) in the 2018 to 2025 model years (California Air Resources Board, 2017). PHEVs contain both an internal combustion engine and an electric

motor, which is powered by batteries. As defined by CARB, ZEVs includes PHEVs, Battery Electric Vehicles (BEV) and Fuel Cell Electric Vehicles (FCEV). The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market. In the context of this report, "EV" is used to refer to all types of electric, and low- or zero-emission vehicles.

As of the publication date of this report, FCEVs are not common in the San Diego region due to limited refueling capabilities. Based on information obtained from the California Fuel Cell Partnership, only one hydrogen fuel station (located in the City of Del Mar) exists in San Diego County. At this time, one station is planned for construction in the City of San Diego sometime in the future. (California Fuel Cell Partnership, 2017). Therefore, for purposes of this analysis, only BEVs and PHEVs are referenced when ZEVs are discussed. If FCEVs gain traction in San Diego, additional GHG reductions would be realized.

EO B-16-12

EO B-16-12 (March 2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution of ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet. As of January 2018, the Governor has called for as many as 1.5 million EV by 2025 and up to five million EV by 2030 (Office of Governor Edmund G. Brown Jr., 2018).

AB 1236

AB 1236 (2015), as enacted in California's Planning and Zoning Law, requires local land use jurisdictions to approve applications for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless there is substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill requires local land use jurisdictions with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that creates an expedited and streamlined permitting process for electric vehicle charging stations, as specified. In August 2016, the County Board of Supervisors adopted Ordinance No. 10437

adding a section to its County Code related to the expedited processing of electric vehicle charging stations permits consistent with AB 1236.

SB 350

In 2015, SB 350 – the Clean Energy and Pollution Reduction Act – was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state’s 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

Renewable Energy Procurement

SB 1078

SB 1078 (2002) established the Renewables Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010.

SB X1 2

SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350

SB 350 (2015) further expanded the RPS by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030 be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency.

SB 100

SB 100 (2018) has further accelerated and expanded the RPS, requiring achievement of a 50 percent RPS by December 31, 2026 and a 60 percent RPS by December 31, 2030. SB 100 also established a new statewide policy goal that calls for eligible renewable energy resources and zero-carbon resources to supply 100 percent of electricity retail sales and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Water

EO B-29-15

In response to drought-related concerns, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (Public Resources Code Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority

strategies that CalRecycle believes would assist the state in reaching the 75 percent goal by 2020.

Increasing the amount of commercial solid waste that is recycled, reused, or composted will reduce GHG emissions primarily by 1) reducing the energy requirements associated with the extraction, harvest, and processing of raw materials and 2) using recyclable materials that require less energy than raw materials to manufacture finished products (CalRecycle, 2018). Increased diversion of organic materials (green and food waste) will also reduce GHG emissions (CO₂ and CH₄) resulting from decomposition in landfills by redirecting this material to processes that use the solid waste material to produce vehicle fuels, heat, electricity, or compost.

Local Regulations

County of San Diego General Plan

The County's General Plan Update (approved in 2011) provides smart growth and land use planning principles designed to reduce GHG emissions. GHG reduction policies are addressed within multiple elements of the General Plan Update. The strategies for reduction of GHG emissions in the General Plan Update include reducing vehicle miles traveled (VMT), energy consumption, water consumption and solid waste. The General Plan Update also discusses the increased generation and use of renewable energy sources to reduce non-renewable electrical and natural gas energy consumption.

A project's adherence to the County's General Plan can be determined through demonstrating consistency with General Plan land use assumption and policies. If a project would generate fewer GHG emissions than the maximum allowable buildout of the site under the General Plan land use designations, the project would have a less than significant GHG impacts. Further consistency with the General Plan can be demonstrated through compliance with applicable General Plan policies.

County of San Diego Climate Action Plan (CAP)

In February 2018, the County's Board of Supervisors adopted a CAP that serves as a long-term programmatic plan that identifies strategies and measures to meet the County's targets to reduce GHG emissions by 2020 and 2030, consistent with the State's legislative GHG reduction targets, and demonstrates progress towards the State's 2050 GHG reduction goal (County of San Diego, 2017). The Board's adoption of the CAP is the culmination of a multi-year plan development process that followed from the judicial invalidation (see *Sierra Club v.*

County of San Diego (Case No. D064243)) of the County's prior CAP, which was adopted in 2012.

In March 2018, several petitioners filed a lawsuit against the County. In December 2018, the San Diego County Superior Court issued a writ ordering the approval of the CAP and its SEIR to be set aside. In January 2019, the County appealed the San Diego County Superior Court's ruling, but the Fourth District Court of Appeal, Division One (Case No. D075478) upheld the trial Superior Court's ruling. Accordingly, there is no approved CAP in San Diego and the CAP cannot be used as a threshold of significance until such time as it is reapproved in compliance with CEQA.

Framework for CEQA Analysis

Appendix G of the CEQA Guidelines

Appendix G of the CEQA Guidelines was revised December 28, 2018. According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact related to GHGs if it would:

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

For purposes of this analysis, the two Appendix G checklist questions set forth above are utilized as the thresholds of significance when evaluating the environmental effects of the project's GHG emissions. In applying these thresholds, reference is made to CEQA Guidelines Section 15064.4(b)(1)-(3), as described above.

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San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|-------------------------|------|-------------------|-------------|--------------------|------------|
| General Light Industry | 5.40 | 1000sqft | 0.50 | 5,400.00 | 0 |
| User Defined Industrial | 1.00 | User Defined Unit | 391.00 | 1.00 | 0 |

1.2 Other Project Characteristics

| | | | | | |
|--------------------------------|--------------------------|--------------------------------|-------|----------------------------------|-------|
| Urbanization | Rural | Wind Speed (m/s) | 2.6 | Precipitation Freq (Days) | 40 |
| Climate Zone | 13 | | | Operational Year | 2023 |
| Utility Company | San Diego Gas & Electric | | | | |
| CO2 Intensity (lb/MWhr) | 720.49 | CH4 Intensity (lb/MWhr) | 0.029 | N2O Intensity (lb/MWhr) | 0.006 |

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - 392 acres disturbed for project

Construction Phase - Schedule Provided by Project Engineer

Off-road Equipment - Construction Equipment

Off-road Equipment - CE OHT used for water truck

Off-road Equipment - Construction Equipment Off Highway Truck used for water truck

Off-road Equipment - Off Highway truck in place of boom truck

Off-road Equipment -

Off-road Equipment - Off highway trucks include dump trucks (6) Water Truck (2) and Chip Seal Truck

Off-road Equipment - Other Construction Equipment assumed as a pile driver

Trips and VMT - Trips provide by project applicant

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - 8 trips per day assuming 35 mile trip distance

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating -

Energy Use - Electricity Consumption (O&M) Building, Conservatively included electrical consumption from tracking system from approved 2015 technical study
See Table "Rugged Solar Farm Project Other Operational Electricity Usage" Page 67

Water And Wastewater - O&M would consume onsite well water at the rate of 1.41

Solid Waste -

Construction Off-road Equipment Mitigation - Tier 4 90%

Energy Mitigation - PV Watts Calculator: 225,264 PV modules. Each module would be 420W

Fleet Mix -

Stationary Sources - Emergency Generators and Fire Pumps -

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| Table Name | Column Name | Default Value | New Value |
|-------------------------|-----------------------------------|---------------|--------------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 2,701.00 | 2,700.00 |
| tblArchitecturalCoating | ConstArea_Nonresidential_Interior | 8,102.00 | 8,100.00 |
| tblAreaCoating | Area_Nonresidential_Exterior | 2701 | 2700 |
| tblAreaCoating | Area_Nonresidential_Interior | 8102 | 8100 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 15.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstructionPhase | NumDays | 240.00 | 11.00 |

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| | | | |
|----------------------|----------------------------|----------|--------------|
| tblConstructionPhase | NumDays | 620.00 | 43.00 |
| tblConstructionPhase | NumDays | 6,200.00 | 131.00 |
| tblConstructionPhase | NumDays | 6,200.00 | 65.00 |
| tblConstructionPhase | NumDays | 440.00 | 65.00 |
| tblConstructionPhase | NumDays | 440.00 | 10.00 |
| tblEnergyUse | NT24E | 0.00 | 1,375,203.00 |
| tblGrading | AcresOfGrading | 21.50 | 24.00 |
| tblLandUse | LandUseSquareFeet | 0.00 | 1.00 |
| tblLandUse | LotAcreage | 0.12 | 0.50 |
| tblLandUse | LotAcreage | 0.00 | 391.00 |
| tblOffRoadEquipment | HorsePower | 158.00 | 40.00 |
| tblOffRoadEquipment | HorsePower | 80.00 | 102.00 |
| tblOffRoadEquipment | HorsePower | 97.00 | 131.00 |
| tblOffRoadEquipment | HorsePower | 97.00 | 131.00 |
| tblOffRoadEquipment | HorsePower | 212.00 | 215.00 |
| tblOffRoadEquipment | HorsePower | 212.00 | 215.00 |
| tblOffRoadEquipment | HorsePower | 80.00 | 100.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |

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| | | | |
|---------------------------|-------------------|-------|--------|
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 12.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 12.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 12.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 156.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 72.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 20.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 16.00 |
| tblTripsAndVMT | VendorTripNumber | 1.00 | 32.00 |
| tblTripsAndVMT | VendorTripNumber | 1.00 | 20.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 120.00 |
| tblTripsAndVMT | WorkerTripLength | 16.80 | 35.00 |
| tblTripsAndVMT | WorkerTripLength | 16.80 | 35.00 |
| tblTripsAndVMT | WorkerTripLength | 16.80 | 35.00 |
| tblTripsAndVMT | WorkerTripLength | 16.80 | 35.00 |
| tblTripsAndVMT | WorkerTripLength | 16.80 | 35.00 |
| tblTripsAndVMT | WorkerTripLength | 16.80 | 35.00 |
| tblTripsAndVMT | WorkerTripLength | 16.80 | 35.00 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 22.00 |
| tblTripsAndVMT | WorkerTripNumber | 13.00 | 30.00 |
| tblTripsAndVMT | WorkerTripNumber | 2.00 | 144.00 |
| tblTripsAndVMT | WorkerTripNumber | 2.00 | 40.00 |
| tblTripsAndVMT | WorkerTripNumber | 30.00 | 24.00 |
| tblTripsAndVMT | WorkerTripNumber | 0.00 | 10.00 |
| tblVehicleTrips | CW_TL | 14.70 | 35.00 |
| tblVehicleTrips | CW_TTP | 0.00 | 100.00 |

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| | | | |
|-----------------|------------------------------------|--------------|------------|
| tblVehicleTrips | PR_TP | 0.00 | 100.00 |
| tblVehicleTrips | ST_TR | 1.32 | 0.00 |
| tblVehicleTrips | ST_TR | 0.00 | 8.00 |
| tblVehicleTrips | SU_TR | 0.68 | 0.00 |
| tblVehicleTrips | SU_TR | 0.00 | 8.00 |
| tblVehicleTrips | WD_TR | 6.97 | 0.00 |
| tblVehicleTrips | WD_TR | 0.00 | 8.00 |
| tblWater | ElectricityIntensityFactorToSupply | 9,727.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToSupply | 9,727.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToTreat | 111.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToTreat | 111.00 | 0.00 |
| tblWater | IndoorWaterUseRate | 1,248,750.00 | 59,450.00 |
| tblWater | OutdoorWaterUseRate | 0.00 | 400,000.00 |

2.0 Emissions Summary

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| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|-----------|--|--|
| 6 | 1-1-2022 | 3-31-2022 | 0.5992 | 0.1520 |
| 7 | 4-1-2022 | 6-30-2022 | 1.0345 | 0.2925 |
| 8 | 7-1-2022 | 9-30-2022 | 1.0459 | 0.2957 |
| | | Highest | 1.0459 | 0.2957 |

2.2 Overall Operational

Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0274 | 0.0000 | 6.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0000 | 1.2000e-004 |
| Energy | 3.4000e-004 | 3.0600e-003 | 2.5700e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | 0.0000 | 467.4248 | 467.4248 | 0.0187 | 3.9300e-003 | 469.0633 |
| Mobile | 5.2400e-003 | 0.0245 | 0.0951 | 4.0000e-004 | 0.0384 | 2.9000e-004 | 0.0387 | 0.0103 | 2.7000e-004 | 0.0106 | 0.0000 | 36.8188 | 36.8188 | 1.6600e-003 | 0.0000 | 36.8603 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 1.3600 | 0.0000 | 1.3600 | 0.0804 | 0.0000 | 3.3694 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0189 | 0.2281 | 0.2470 | 1.9500e-003 | 5.0000e-005 | 0.3098 |
| Total | 0.0329 | 0.0276 | 0.0978 | 4.2000e-004 | 0.0384 | 5.2000e-004 | 0.0389 | 0.0103 | 5.0000e-004 | 0.0108 | 1.3789 | 504.4718 | 505.8507 | 0.1027 | 3.9800e-003 | 509.6030 |

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2.2 Overall Operational

Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|------------------|------------------|----------------|----------------|------------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0274 | 0.0000 | 6.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0000 | 1.2000e-004 |
| Energy | 3.4000e-004 | 3.0600e-003 | 2.5700e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | 0.0000 | - | - | -2.9335 | -0.6069 | - |
| Mobile | 5.2400e-003 | 0.0245 | 0.0951 | 4.0000e-004 | 0.0384 | 2.9000e-004 | 0.0387 | 0.0103 | 2.7000e-004 | 0.0106 | 0.0000 | 36.8188 | 36.8188 | 1.6600e-003 | 0.0000 | 36.8603 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 1.3600 | 0.0000 | 1.3600 | 0.0804 | 0.0000 | 3.3694 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0189 | 0.2281 | 0.2470 | 1.9500e-003 | 5.0000e-005 | 0.3098 |
| Total | 0.0329 | 0.0276 | 0.0978 | 4.2000e-004 | 0.0384 | 5.2000e-004 | 0.0389 | 0.0103 | 5.0000e-004 | 0.0108 | 1.3789 | - | - | -2.8495 | -0.6068 | - |
| | | | | | | | | | | | | 72,842.92 | 72,841.54 | | | 73,093.62 |
| | | | | | | | | | | | | 43 | 54 | | | 18 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|------------------|------------------|-----------------|------------------|------------------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14,539.44 | 14,499.81 | 2,873.81 | 15,347.24 | 14,443.25 |

3.0 Construction Detail

Construction Phase

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| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|--------------|--|-----------------------|------------|------------|---------------|----------|-------------------|
| 1 | Clear and Grubb | Site Preparation | 1/16/2022 | 1/31/2022 | 5 | 11 | |
| 2 | Access Roads, Contouring for Solar Arrays | Grading | 2/1/2022 | 3/31/2022 | 5 | 43 | |
| 3 | Solar Array & Facilities Construction | Building Construction | 4/1/2022 | 9/30/2022 | 5 | 131 | |
| 4 | Offsite Gen-Tie Connection (to Substation) | Building Construction | 10/1/2022 | 12/31/2022 | 5 | 65 | |
| 5 | Site Entrance Paving & Internal Access Finish Work | Paving | 10/1/2022 | 12/30/2022 | 5 | 65 | |
| 6 | Painting O&M Building | Architectural Coating | 10/1/2022 | 10/14/2022 | 5 | 10 | |

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 8,100; Non-Residential Outdoor: 2,700; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|--|------------------------------|--------|-------------|-------------|-------------|
| Clear and Grubb | Crawler Tractors | 2 | 8.00 | 215 | 0.43 |
| Clear and Grubb | Off-Highway Trucks | 2 | 8.00 | 402 | 0.38 |
| Clear and Grubb | Tractors/Loaders/Backhoes | 1 | 8.00 | 131 | 0.37 |
| Access Roads, Contouring for Solar Arrays | Crawler Tractors | 1 | 8.00 | 215 | 0.43 |
| Access Roads, Contouring for Solar Arrays | Excavators | 1 | 8.00 | 40 | 0.38 |
| Access Roads, Contouring for Solar Arrays | Off-Highway Trucks | 2 | 8.00 | 402 | 0.38 |
| Access Roads, Contouring for Solar Arrays | Rollers | 1 | 8.00 | 100 | 0.38 |
| Solar Array & Facilities Construction | Cranes | 2 | 7.00 | 231 | 0.29 |
| Solar Array & Facilities Construction | Forklifts | 2 | 8.00 | 89 | 0.20 |
| Solar Array & Facilities Construction | Generator Sets | 2 | 8.00 | 84 | 0.74 |
| Solar Array & Facilities Construction | Other Construction Equipment | 2 | 8.00 | 172 | 0.42 |
| Solar Array & Facilities Construction | Tractors/Loaders/Backhoes | 1 | 7.00 | 131 | 0.37 |
| Offsite Gen-Tie Connection (to Substation) | Cranes | 2 | 8.00 | 231 | 0.29 |
| Offsite Gen-Tie Connection (to Substation) | Forklifts | 2 | 8.00 | 89 | 0.20 |
| Offsite Gen-Tie Connection (to Substation) | Off-Highway Trucks | 2 | 8.00 | 402 | 0.38 |
| Offsite Gen-Tie Connection (to Substation) | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Site Entrance Paving & Internal Access Finish Work | Off-Highway Trucks | 9 | 8.00 | 402 | 0.38 |
| Site Entrance Paving & Internal Access Finish Work | Pavers | 2 | 8.00 | 130 | 0.42 |
| Site Entrance Paving & Internal Access Finish Work | Rollers | 1 | 8.00 | 102 | 0.38 |
| Painting O&M Building | Air Compressors | 1 | 6.00 | 78 | 0.48 |

Trips and VMT

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| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Clear and Grubb | 5 | 22.00 | 20.00 | 12.00 | 35.00 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Access Roads, Contouring for Solar A | 5 | 30.00 | 16.00 | 12.00 | 35.00 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Solar Array & Facilities Construction | 9 | 144.00 | 32.00 | 12.00 | 35.00 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Offsite Gen-Tie Connection (to Substa | 8 | 40.00 | 20.00 | 156.00 | 35.00 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Entrance Paving & Internal Access Fini | 12 | 24.00 | 120.00 | 72.00 | 35.00 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Painting O&M Building | 1 | 10.00 | 0.00 | 0.00 | 35.00 | 6.60 | 20.00 | LD_Mix | HDT_Mix | HHDT |

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Clear and Grubb - 2022

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 5.8300e-003 | 0.0000 | 5.8300e-003 | 6.3000e-004 | 0.0000 | 6.3000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0122 | 0.1194 | 0.0773 | 2.6000e-004 | | 4.5500e-003 | 4.5500e-003 | | 4.1900e-003 | 4.1900e-003 | 0.0000 | 22.4400 | 22.4400 | 7.2600e-003 | 0.0000 | 22.6214 |
| Total | 0.0122 | 0.1194 | 0.0773 | 2.6000e-004 | 5.8300e-003 | 4.5500e-003 | 0.0104 | 6.3000e-004 | 4.1900e-003 | 4.8200e-003 | 0.0000 | 22.4400 | 22.4400 | 7.2600e-003 | 0.0000 | 22.6214 |

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3.2 Clear and Grubb - 2022

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.0000e-005 | 1.4300e-003 | 3.8000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.1000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.4510 | 0.4510 | 4.0000e-005 | 0.0000 | 0.4520 |
| Vendor | 3.0000e-004 | 0.0103 | 2.7200e-003 | 3.0000e-005 | 6.6000e-004 | 2.0000e-005 | 6.8000e-004 | 1.9000e-004 | 2.0000e-005 | 2.1000e-004 | 0.0000 | 2.6300 | 2.6300 | 2.0000e-004 | 0.0000 | 2.6349 |
| Worker | 1.0600e-003 | 8.1000e-004 | 7.9300e-003 | 3.0000e-005 | 3.1400e-003 | 2.0000e-005 | 3.1600e-003 | 8.3000e-004 | 2.0000e-005 | 8.5000e-004 | 0.0000 | 2.5940 | 2.5940 | 7.0000e-005 | 0.0000 | 2.5957 |
| Total | 1.4000e-003 | 0.0125 | 0.0110 | 6.0000e-005 | 3.9000e-003 | 4.0000e-005 | 3.9500e-003 | 1.0500e-003 | 4.0000e-005 | 1.0900e-003 | 0.0000 | 5.6750 | 5.6750 | 3.1000e-004 | 0.0000 | 5.6826 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 5.8300e-003 | 0.0000 | 5.8300e-003 | 6.3000e-004 | 0.0000 | 6.3000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.7900e-003 | 0.0206 | 0.1191 | 2.6000e-004 | | 8.0000e-004 | 8.0000e-004 | | 7.7000e-004 | 7.7000e-004 | 0.0000 | 22.4399 | 22.4399 | 7.2600e-003 | 0.0000 | 22.6214 |
| Total | 3.7900e-003 | 0.0206 | 0.1191 | 2.6000e-004 | 5.8300e-003 | 8.0000e-004 | 6.6300e-003 | 6.3000e-004 | 7.7000e-004 | 1.4000e-003 | 0.0000 | 22.4399 | 22.4399 | 7.2600e-003 | 0.0000 | 22.6214 |

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3.2 Clear and Grubb - 2022

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.0000e-005 | 1.4300e-003 | 3.8000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.1000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.4510 | 0.4510 | 4.0000e-005 | 0.0000 | 0.4520 |
| Vendor | 3.0000e-004 | 0.0103 | 2.7200e-003 | 3.0000e-005 | 6.6000e-004 | 2.0000e-005 | 6.8000e-004 | 1.9000e-004 | 2.0000e-005 | 2.1000e-004 | 0.0000 | 2.6300 | 2.6300 | 2.0000e-004 | 0.0000 | 2.6349 |
| Worker | 1.0600e-003 | 8.1000e-004 | 7.9300e-003 | 3.0000e-005 | 3.1400e-003 | 2.0000e-005 | 3.1600e-003 | 8.3000e-004 | 2.0000e-005 | 8.5000e-004 | 0.0000 | 2.5940 | 2.5940 | 7.0000e-005 | 0.0000 | 2.5957 |
| Total | 1.4000e-003 | 0.0125 | 0.0110 | 6.0000e-005 | 3.9000e-003 | 4.0000e-005 | 3.9500e-003 | 1.0500e-003 | 4.0000e-005 | 1.0900e-003 | 0.0000 | 5.6750 | 5.6750 | 3.1000e-004 | 0.0000 | 5.6826 |

3.3 Access Roads, Contouring for Solar Arrays - 2022

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0127 | 0.0000 | 0.0127 | 1.3700e-003 | 0.0000 | 1.3700e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0407 | 0.3713 | 0.2695 | 8.4000e-004 | | 0.0148 | 0.0148 | | 0.0136 | 0.0136 | 0.0000 | 73.8486 | 73.8486 | 0.0239 | 0.0000 | 74.4457 |
| Total | 0.0407 | 0.3713 | 0.2695 | 8.4000e-004 | 0.0127 | 0.0148 | 0.0275 | 1.3700e-003 | 0.0136 | 0.0150 | 0.0000 | 73.8486 | 73.8486 | 0.0239 | 0.0000 | 74.4457 |

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3.3 Access Roads, Contouring for Solar Arrays - 2022

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.0000e-005 | 1.4300e-003 | 3.8000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.1000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.4510 | 0.4510 | 4.0000e-005 | 0.0000 | 0.4520 |
| Vendor | 9.4000e-004 | 0.0321 | 8.5100e-003 | 8.0000e-005 | 2.0700e-003 | 6.0000e-005 | 2.1200e-003 | 6.0000e-004 | 6.0000e-005 | 6.5000e-004 | 0.0000 | 8.2248 | 8.2248 | 6.1000e-004 | 0.0000 | 8.2401 |
| Worker | 5.6400e-003 | 4.3300e-003 | 0.0423 | 1.5000e-004 | 0.0168 | 1.1000e-004 | 0.0169 | 4.4500e-003 | 1.0000e-004 | 4.5500e-003 | 0.0000 | 13.8277 | 13.8277 | 3.5000e-004 | 0.0000 | 13.8366 |
| Total | 6.6200e-003 | 0.0378 | 0.0512 | 2.3000e-004 | 0.0189 | 1.7000e-004 | 0.0191 | 5.0800e-003 | 1.6000e-004 | 5.2300e-003 | 0.0000 | 22.5035 | 22.5035 | 1.0000e-003 | 0.0000 | 22.5287 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0127 | 0.0000 | 0.0127 | 1.3700e-003 | 0.0000 | 1.3700e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0106 | 0.0588 | 0.4089 | 8.4000e-004 | | 1.3700e-003 | 1.3700e-003 | | 1.3700e-003 | 1.3700e-003 | 0.0000 | 73.8485 | 73.8485 | 0.0239 | 0.0000 | 74.4456 |
| Total | 0.0106 | 0.0588 | 0.4089 | 8.4000e-004 | 0.0127 | 1.3700e-003 | 0.0141 | 1.3700e-003 | 1.3700e-003 | 2.7400e-003 | 0.0000 | 73.8485 | 73.8485 | 0.0239 | 0.0000 | 74.4456 |

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3.3 Access Roads, Contouring for Solar Arrays - 2022

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.0000e-005 | 1.4300e-003 | 3.8000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.1000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.4510 | 0.4510 | 4.0000e-005 | 0.0000 | 0.4520 |
| Vendor | 9.4000e-004 | 0.0321 | 8.5100e-003 | 8.0000e-005 | 2.0700e-003 | 6.0000e-005 | 2.1200e-003 | 6.0000e-004 | 6.0000e-005 | 6.5000e-004 | 0.0000 | 8.2248 | 8.2248 | 6.1000e-004 | 0.0000 | 8.2401 |
| Worker | 5.6400e-003 | 4.3300e-003 | 0.0423 | 1.5000e-004 | 0.0168 | 1.1000e-004 | 0.0169 | 4.4500e-003 | 1.0000e-004 | 4.5500e-003 | 0.0000 | 13.8277 | 13.8277 | 3.5000e-004 | 0.0000 | 13.8366 |
| Total | 6.6200e-003 | 0.0378 | 0.0512 | 2.3000e-004 | 0.0189 | 1.7000e-004 | 0.0191 | 5.0800e-003 | 1.6000e-004 | 5.2300e-003 | 0.0000 | 22.5035 | 22.5035 | 1.0000e-003 | 0.0000 | 22.5287 |

3.4 Solar Array & Facilities Construction - 2022

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1599 | 1.5871 | 1.5271 | 2.7700e-003 | | 0.0788 | 0.0788 | | 0.0740 | 0.0740 | 0.0000 | 241.6436 | 241.6436 | 0.0577 | 0.0000 | 243.0867 |
| Total | 0.1599 | 1.5871 | 1.5271 | 2.7700e-003 | | 0.0788 | 0.0788 | | 0.0740 | 0.0740 | 0.0000 | 241.6436 | 241.6436 | 0.0577 | 0.0000 | 243.0867 |

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3.4 Solar Array & Facilities Construction - 2022

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.0000e-005 | 1.4300e-003 | 3.8000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.1000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.4510 | 0.4510 | 4.0000e-005 | 0.0000 | 0.4520 |
| Vendor | 5.7000e-003 | 0.1955 | 0.0519 | 5.1000e-004 | 0.0126 | 3.6000e-004 | 0.0129 | 3.6300e-003 | 3.4000e-004 | 3.9800e-003 | 0.0000 | 50.1136 | 50.1136 | 3.7400e-003 | 0.0000 | 50.2072 |
| Worker | 0.0825 | 0.0634 | 0.6181 | 2.2300e-003 | 0.2449 | 1.5700e-003 | 0.2465 | 0.0651 | 1.4400e-003 | 0.0665 | 0.0000 | 202.2066 | 202.2066 | 5.1800e-003 | 0.0000 | 202.3361 |
| Total | 0.0882 | 0.2603 | 0.6704 | 2.7400e-003 | 0.2576 | 1.9300e-003 | 0.2595 | 0.0687 | 1.7800e-003 | 0.0705 | 0.0000 | 252.7712 | 252.7712 | 8.9600e-003 | 0.0000 | 252.9953 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0390 | 0.2125 | 1.7499 | 2.7700e-003 | | 8.2700e-003 | 8.2700e-003 | | 7.9200e-003 | 7.9200e-003 | 0.0000 | 241.6433 | 241.6433 | 0.0577 | 0.0000 | 243.0864 |
| Total | 0.0390 | 0.2125 | 1.7499 | 2.7700e-003 | | 8.2700e-003 | 8.2700e-003 | | 7.9200e-003 | 7.9200e-003 | 0.0000 | 241.6433 | 241.6433 | 0.0577 | 0.0000 | 243.0864 |

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3.4 Solar Array & Facilities Construction - 2022

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 4.0000e-005 | 1.4300e-003 | 3.8000e-004 | 0.0000 | 1.0000e-004 | 0.0000 | 1.1000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.4510 | 0.4510 | 4.0000e-005 | 0.0000 | 0.4520 |
| Vendor | 5.7000e-003 | 0.1955 | 0.0519 | 5.1000e-004 | 0.0126 | 3.6000e-004 | 0.0129 | 3.6300e-003 | 3.4000e-004 | 3.9800e-003 | 0.0000 | 50.1136 | 50.1136 | 3.7400e-003 | 0.0000 | 50.2072 |
| Worker | 0.0825 | 0.0634 | 0.6181 | 2.2300e-003 | 0.2449 | 1.5700e-003 | 0.2465 | 0.0651 | 1.4400e-003 | 0.0665 | 0.0000 | 202.2066 | 202.2066 | 5.1800e-003 | 0.0000 | 202.3361 |
| Total | 0.0882 | 0.2603 | 0.6704 | 2.7400e-003 | 0.2576 | 1.9300e-003 | 0.2595 | 0.0687 | 1.7800e-003 | 0.0705 | 0.0000 | 252.7712 | 252.7712 | 8.9600e-003 | 0.0000 | 252.9953 |

3.5 Offsite Gen-Tie Connection (to Substation) - 2022

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0767 | 0.7104 | 0.5618 | 1.5400e-003 | | 0.0312 | 0.0312 | | 0.0287 | 0.0287 | 0.0000 | 134.8626 | 134.8626 | 0.0436 | 0.0000 | 135.9530 |
| Total | 0.0767 | 0.7104 | 0.5618 | 1.5400e-003 | | 0.0312 | 0.0312 | | 0.0287 | 0.0287 | 0.0000 | 134.8626 | 134.8626 | 0.0436 | 0.0000 | 135.9530 |

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3.5 Offsite Gen-Tie Connection (to Substation) - 2022

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 5.5000e-004 | 0.0186 | 4.9900e-003 | 6.0000e-005 | 1.3300e-003 | 5.0000e-005 | 1.3900e-003 | 3.7000e-004 | 5.0000e-005 | 4.2000e-004 | 0.0000 | 5.8627 | 5.8627 | 5.3000e-004 | 0.0000 | 5.8760 |
| Vendor | 1.7700e-003 | 0.0606 | 0.0161 | 1.6000e-004 | 3.9000e-003 | 1.1000e-004 | 4.0100e-003 | 1.1300e-003 | 1.1000e-004 | 1.2300e-003 | 0.0000 | 15.5410 | 15.5410 | 1.1600e-003 | 0.0000 | 15.5700 |
| Worker | 0.0114 | 8.7400e-003 | 0.0852 | 3.1000e-004 | 0.0338 | 2.2000e-004 | 0.0340 | 8.9700e-003 | 2.0000e-004 | 9.1700e-003 | 0.0000 | 27.8699 | 27.8699 | 7.1000e-004 | 0.0000 | 27.8877 |
| Total | 0.0137 | 0.0880 | 0.1063 | 5.3000e-004 | 0.0390 | 3.8000e-004 | 0.0394 | 0.0105 | 3.6000e-004 | 0.0108 | 0.0000 | 49.2735 | 49.2735 | 2.4000e-003 | 0.0000 | 49.3337 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0271 | 0.1797 | 0.7752 | 1.5400e-003 | | 8.0400e-003 | 8.0400e-003 | | 7.5700e-003 | 7.5700e-003 | 0.0000 | 134.8624 | 134.8624 | 0.0436 | 0.0000 | 135.9529 |
| Total | 0.0271 | 0.1797 | 0.7752 | 1.5400e-003 | | 8.0400e-003 | 8.0400e-003 | | 7.5700e-003 | 7.5700e-003 | 0.0000 | 134.8624 | 134.8624 | 0.0436 | 0.0000 | 135.9529 |

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3.5 Offsite Gen-Tie Connection (to Substation) - 2022

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 5.5000e-004 | 0.0186 | 4.9900e-003 | 6.0000e-005 | 1.3300e-003 | 5.0000e-005 | 1.3900e-003 | 3.7000e-004 | 5.0000e-005 | 4.2000e-004 | 0.0000 | 5.8627 | 5.8627 | 5.3000e-004 | 0.0000 | 5.8760 |
| Vendor | 1.7700e-003 | 0.0606 | 0.0161 | 1.6000e-004 | 3.9000e-003 | 1.1000e-004 | 4.0100e-003 | 1.1300e-003 | 1.1000e-004 | 1.2300e-003 | 0.0000 | 15.5410 | 15.5410 | 1.1600e-003 | 0.0000 | 15.5700 |
| Worker | 0.0114 | 8.7400e-003 | 0.0852 | 3.1000e-004 | 0.0338 | 2.2000e-004 | 0.0340 | 8.9700e-003 | 2.0000e-004 | 9.1700e-003 | 0.0000 | 27.8699 | 27.8699 | 7.1000e-004 | 0.0000 | 27.8877 |
| Total | 0.0137 | 0.0880 | 0.1063 | 5.3000e-004 | 0.0390 | 3.8000e-004 | 0.0394 | 0.0105 | 3.6000e-004 | 0.0108 | 0.0000 | 49.2735 | 49.2735 | 2.4000e-003 | 0.0000 | 49.3337 |

3.6 Site Entrance Paving & Internal Access Finish Work - 2022

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1749 | 1.3820 | 1.2470 | 4.2800e-003 | | 0.0533 | 0.0533 | | 0.0490 | 0.0490 | 0.0000 | 375.7781 | 375.7781 | 0.1215 | 0.0000 | 378.8164 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.1749 | 1.3820 | 1.2470 | 4.2800e-003 | | 0.0533 | 0.0533 | | 0.0490 | 0.0490 | 0.0000 | 375.7781 | 375.7781 | 0.1215 | 0.0000 | 378.8164 |

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3.6 Site Entrance Paving & Internal Access Finish Work - 2022

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.5000e-004 | 8.6000e-003 | 2.3000e-003 | 3.0000e-005 | 6.2000e-004 | 2.0000e-005 | 6.4000e-004 | 1.7000e-004 | 2.0000e-005 | 1.9000e-004 | 0.0000 | 2.7059 | 2.7059 | 2.4000e-004 | 0.0000 | 2.7120 |
| Vendor | 0.0106 | 0.3637 | 0.0965 | 9.5000e-004 | 0.0234 | 6.7000e-004 | 0.0241 | 6.7600e-003 | 6.4000e-004 | 7.4000e-003 | 0.0000 | 93.2458 | 93.2458 | 6.9700e-003 | 0.0000 | 93.4199 |
| Worker | 6.8200e-003 | 5.2400e-003 | 0.0511 | 1.8000e-004 | 0.0203 | 1.3000e-004 | 0.0204 | 5.3800e-003 | 1.2000e-004 | 5.5000e-003 | 0.0000 | 16.7219 | 16.7219 | 4.3000e-004 | 0.0000 | 16.7326 |
| Total | 0.0177 | 0.3776 | 0.1499 | 1.1600e-003 | 0.0443 | 8.2000e-004 | 0.0451 | 0.0123 | 7.8000e-004 | 0.0131 | 0.0000 | 112.6736 | 112.6736 | 7.6400e-003 | 0.0000 | 112.8646 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0524 | 0.2270 | 2.0475 | 4.2800e-003 | | 6.9800e-003 | 6.9800e-003 | | 6.9800e-003 | 6.9800e-003 | 0.0000 | 375.7776 | 375.7776 | 0.1215 | 0.0000 | 378.8160 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | 0.0524 | 0.2270 | 2.0475 | 4.2800e-003 | | 6.9800e-003 | 6.9800e-003 | | 6.9800e-003 | 6.9800e-003 | 0.0000 | 375.7776 | 375.7776 | 0.1215 | 0.0000 | 378.8160 |

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3.6 Site Entrance Paving & Internal Access Finish Work - 2022

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.5000e-004 | 8.6000e-003 | 2.3000e-003 | 3.0000e-005 | 6.2000e-004 | 2.0000e-005 | 6.4000e-004 | 1.7000e-004 | 2.0000e-005 | 1.9000e-004 | 0.0000 | 2.7059 | 2.7059 | 2.4000e-004 | 0.0000 | 2.7120 |
| Vendor | 0.0106 | 0.3637 | 0.0965 | 9.5000e-004 | 0.0234 | 6.7000e-004 | 0.0241 | 6.7600e-003 | 6.4000e-004 | 7.4000e-003 | 0.0000 | 93.2458 | 93.2458 | 6.9700e-003 | 0.0000 | 93.4199 |
| Worker | 6.8200e-003 | 5.2400e-003 | 0.0511 | 1.8000e-004 | 0.0203 | 1.3000e-004 | 0.0204 | 5.3800e-003 | 1.2000e-004 | 5.5000e-003 | 0.0000 | 16.7219 | 16.7219 | 4.3000e-004 | 0.0000 | 16.7326 |
| Total | 0.0177 | 0.3776 | 0.1499 | 1.1600e-003 | 0.0443 | 8.2000e-004 | 0.0451 | 0.0123 | 7.8000e-004 | 0.0131 | 0.0000 | 112.6736 | 112.6736 | 7.6400e-003 | 0.0000 | 112.8646 |

3.7 Painting O&M Building - 2022

Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------|---------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.0626 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.0200e-003 | 7.0400e-003 | 9.0700e-003 | 1.0000e-005 | | 4.1000e-004 | 4.1000e-004 | | 4.1000e-004 | 4.1000e-004 | 0.0000 | 1.2766 | 1.2766 | 8.0000e-005 | 0.0000 | 1.2787 |
| Total | 0.0636 | 7.0400e-003 | 9.0700e-003 | 1.0000e-005 | | 4.1000e-004 | 4.1000e-004 | | 4.1000e-004 | 4.1000e-004 | 0.0000 | 1.2766 | 1.2766 | 8.0000e-005 | 0.0000 | 1.2787 |

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3.7 Painting O&M Building - 2022

Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.4000e-004 | 3.4000e-004 | 3.2800e-003 | 1.0000e-005 | 1.3000e-003 | 1.0000e-005 | 1.3100e-003 | 3.4000e-004 | 1.0000e-005 | 3.5000e-004 | 0.0000 | 1.0719 | 1.0719 | 3.0000e-005 | 0.0000 | 1.0726 |
| Total | 4.4000e-004 | 3.4000e-004 | 3.2800e-003 | 1.0000e-005 | 1.3000e-003 | 1.0000e-005 | 1.3100e-003 | 3.4000e-004 | 1.0000e-005 | 3.5000e-004 | 0.0000 | 1.0719 | 1.0719 | 3.0000e-005 | 0.0000 | 1.0726 |

Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------|---------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.0626 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.5000e-004 | 6.4000e-004 | 9.1600e-003 | 1.0000e-005 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 1.2766 | 1.2766 | 8.0000e-005 | 0.0000 | 1.2787 |
| Total | 0.0627 | 6.4000e-004 | 9.1600e-003 | 1.0000e-005 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 1.2766 | 1.2766 | 8.0000e-005 | 0.0000 | 1.2787 |

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3.7 Painting O&M Building - 2022

Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.4000e-004 | 3.4000e-004 | 3.2800e-003 | 1.0000e-005 | 1.3000e-003 | 1.0000e-005 | 1.3100e-003 | 3.4000e-004 | 1.0000e-005 | 3.5000e-004 | 0.0000 | 1.0719 | 1.0719 | 3.0000e-005 | 0.0000 | 1.0726 |
| Total | 4.4000e-004 | 3.4000e-004 | 3.2800e-003 | 1.0000e-005 | 1.3000e-003 | 1.0000e-005 | 1.3100e-003 | 3.4000e-004 | 1.0000e-005 | 3.5000e-004 | 0.0000 | 1.0719 | 1.0719 | 3.0000e-005 | 0.0000 | 1.0726 |

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|-------------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|---------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 5.2400e-003 | 0.0245 | 0.0951 | 4.0000e-004 | 0.0384 | 2.9000e-004 | 0.0387 | 0.0103 | 2.7000e-004 | 0.0106 | 0.0000 | 36.8188 | 36.8188 | 1.6600e-003 | 0.0000 | 36.8603 |
| Unmitigated | 5.2400e-003 | 0.0245 | 0.0951 | 4.0000e-004 | 0.0384 | 2.9000e-004 | 0.0387 | 0.0103 | 2.7000e-004 | 0.0106 | 0.0000 | 36.8188 | 36.8188 | 1.6600e-003 | 0.0000 | 36.8603 |

4.2 Trip Summary Information

| Land Use | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|-------------------------|-------------------------|----------|--------|-------------|------------|
| | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| General Light Industry | 0.00 | 0.00 | 0.00 | | |
| User Defined Industrial | 8.00 | 8.00 | 8.00 | 101,920 | 101,920 |
| Total | 8.00 | 8.00 | 8.00 | 101,920 | 101,920 |

4.3 Trip Type Information

| Land Use | Miles | | | Trip % | | | Trip Purpose % | | |
|-------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
| | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| General Light Industry | 14.70 | 6.60 | 6.60 | 59.00 | 28.00 | 13.00 | 92 | 5 | 3 |
| User Defined Industrial | 35.00 | 6.60 | 6.60 | 100.00 | 0.00 | 0.00 | 100 | 0 | 0 |

4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|-------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Light Industry | 0.602700 | 0.040134 | 0.179939 | 0.104242 | 0.014985 | 0.005435 | 0.016642 | 0.024350 | 0.001934 | 0.001888 | 0.005938 | 0.000757 | 0.001056 |
| User Defined Industrial | 0.602700 | 0.040134 | 0.179939 | 0.104242 | 0.014985 | 0.005435 | 0.016642 | 0.024350 | 0.001934 | 0.001888 | 0.005938 | 0.000757 | 0.001056 |

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-------------|-------------|-------------|-------------|-------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | - | - | -2.9336 | -0.6070 | - |
| | | | | | | | | | | | | 72,883.3025 | 72,883.3025 | | | 73,137.5125 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 464.0936 | 464.0936 | 0.0187 | 3.8600e-003 | 465.7123 |
| NaturalGas Mitigated | 3.4000e-004 | 3.0600e-003 | 2.5700e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | 0.0000 | 3.3312 | 3.3312 | 6.0000e-005 | 6.0000e-005 | 3.3510 |
| NaturalGas Unmitigated | 3.4000e-004 | 3.0600e-003 | 2.5700e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | 0.0000 | 3.3312 | 3.3312 | 6.0000e-005 | 6.0000e-005 | 3.3510 |

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5.2 Energy by Land Use - NaturalGas

Unmitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|----------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|--------------------|---------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Light Industry | 62424 | 3.4000e-004 | 3.0600e-003 | 2.5700e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | 0.0000 | 3.3312 | 3.3312 | 6.0000e-005 | 6.0000e-005 | 3.3510 |
| User Defined Industrial | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 3.4000e-004 | 3.0600e-003 | 2.5700e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | 0.0000 | 3.3312 | 3.3312 | 6.0000e-005 | 6.0000e-005 | 3.3510 |

Mitigated

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|----------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|--------------------|---------------|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| General Light Industry | 62424 | 3.4000e-004 | 3.0600e-003 | 2.5700e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | 0.0000 | 3.3312 | 3.3312 | 6.0000e-005 | 6.0000e-005 | 3.3510 |
| User Defined Industrial | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 3.4000e-004 | 3.0600e-003 | 2.5700e-003 | 2.0000e-005 | | 2.3000e-004 | 2.3000e-004 | | 2.3000e-004 | 2.3000e-004 | 0.0000 | 3.3312 | 3.3312 | 6.0000e-005 | 6.0000e-005 | 3.3510 |

Rugged Solar (PV) - San Diego County, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | 44874 | 14.6652 | 5.9000e-004 | 1.2000e-004 | 14.7164 |
| User Defined Industrial | 1.3752e+006 | 449.4284 | 0.0181 | 3.7400e-003 | 450.9960 |
| Total | | 464.0936 | 0.0187 | 3.8600e-003 | 465.7123 |

Mitigated

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|-----------------|---------------------|----------------|----------------|---------------------|
| Land Use | kWh/yr | MT/yr | | | |
| General Light Industry | -1.12173e+008 | -36,659.0329 | -1.4755 | -0.3053 | -36,786.8960 |
| User Defined Industrial | -1.10842e+008 | -36,224.2697 | -1.4580 | -0.3017 | -36,350.6165 |
| Total | | -72,883.3025 | -2.9336 | -0.6069 | -73,137.5125 |

6.0 Area Detail

6.1 Mitigation Measures Area

Rugged Solar (PV) - San Diego County, Annual

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-------------|---------|--------|-------------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|-------------|-------------|--------|--------|-------------|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0274 | 0.0000 | 6.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0000 | 1.2000e-004 |
| Unmitigated | 0.0274 | 0.0000 | 6.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0000 | 1.2000e-004 |

6.2 Area by SubCategory

Unmitigated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 6.2600e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0211 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.0000e-005 | 0.0000 | 6.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0000 | 1.2000e-004 |
| Total | 0.0274 | 0.0000 | 6.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0000 | 1.2000e-004 |

Rugged Solar (PV) - San Diego County, Annual

6.2 Area by SubCategory

Mitigated

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|-----------------------|---------------|---------------|--------------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 6.2600e-003 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0211 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 1.0000e-005 | 0.0000 | 6.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0000 | 1.2000e-004 |
| Total | 0.0274 | 0.0000 | 6.0000e-005 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.1000e-004 | 1.1000e-004 | 0.0000 | 0.0000 | 1.2000e-004 |

7.0 Water Detail

7.1 Mitigation Measures Water

Rugged Solar (PV) - San Diego County, Annual

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|-------------|-------------|--------|
| Category | MT/yr | | | |
| Mitigated | 0.2470 | 1.9500e-003 | 5.0000e-005 | 0.3098 |
| Unmitigated | 0.2470 | 1.9500e-003 | 5.0000e-005 | 0.3098 |

7.2 Water by Land Use

Unmitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|--------------------|---------------|--------------------|--------------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 0.05945 / 0 | 0.0807 | 1.9400e-003 | 5.0000e-005 | 0.1430 |
| User Defined Industrial | 0 / 0.4 | 0.1663 | 1.0000e-005 | 0.0000 | 0.1669 |
| Total | | 0.2470 | 1.9500e-003 | 5.0000e-005 | 0.3098 |

Rugged Solar (PV) - San Diego County, Annual

7.2 Water by Land Use

Mitigated

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|--------------------|---------------|--------------------|--------------------|---------------|
| Land Use | Mgal | MT/yr | | | |
| General Light Industry | 0.05945 / 0 | 0.0807 | 1.9400e-003 | 5.0000e-005 | 0.1430 |
| User Defined Industrial | 0 / 0.4 | 0.1663 | 1.0000e-005 | 0.0000 | 0.1669 |
| Total | | 0.2470 | 1.9500e-003 | 5.0000e-005 | 0.3098 |

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

| | Total CO2 | CH4 | N2O | CO2e |
|-------------|-----------|--------|--------|--------|
| | MT/yr | | | |
| Mitigated | 1.3600 | 0.0804 | 0.0000 | 3.3694 |
| Unmitigated | 1.3600 | 0.0804 | 0.0000 | 3.3694 |

Rugged Solar (PV) - San Diego County, Annual

8.2 Waste by Land Use

Unmitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 6.7 | 1.3600 | 0.0804 | 0.0000 | 3.3694 |
| User Defined Industrial | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 1.3600 | 0.0804 | 0.0000 | 3.3694 |

Mitigated

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|-------------------------|----------------|---------------|---------------|---------------|---------------|
| Land Use | tons | MT/yr | | | |
| General Light Industry | 6.7 | 1.3600 | 0.0804 | 0.0000 | 3.3694 |
| User Defined Industrial | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Total | | 1.3600 | 0.0804 | 0.0000 | 3.3694 |

9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

Rugged Solar (PV) - San Diego County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|------------|-------------|-------------|-----------|
|----------------|--------|-----------|------------|-------------|-------------|-----------|

Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|----------------|--------|----------------|-----------------|---------------|-----------|
|----------------|--------|----------------|-----------------|---------------|-----------|

User Defined Equipment

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

11.0 Vegetation



Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at <https://sam.nrel.gov>) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

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The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

224,435,216 kWh/Year*

System output may range from 213,954,091 to 226,769,342 kWh per year near this location.

| Month | Solar Radiation (kWh / m ² / day) | AC Energy (kWh) | Value (\$) |
|---------------|---|----------------------|----------------------|
| January | 6.44 | 14,777,968 | 2,416,198 |
| February | 7.00 | 14,499,703 | 2,370,701 |
| March | 8.94 | 19,846,278 | 3,244,866 |
| April | 9.82 | 21,314,896 | 3,484,985 |
| May | 10.44 | 22,622,066 | 3,698,708 |
| June | 10.76 | 22,523,054 | 3,682,519 |
| July | 10.06 | 21,605,616 | 3,532,518 |
| August | 9.51 | 20,136,458 | 3,292,311 |
| September | 9.39 | 19,413,588 | 3,174,122 |
| October | 8.49 | 18,870,546 | 3,085,334 |
| November | 6.93 | 15,288,375 | 2,499,649 |
| December | 5.81 | 13,536,665 | 2,213,245 |
| Annual | 8.63 | 224,435,213 | \$ 36,695,156 |

Location and Station Identification

| | |
|---------------------|------------------------------------|
| Requested Location | boulevard ca |
| Weather Data Source | Lat, Lon: 32.65, -116.26 1.2 mi |
| Latitude | 32.65° N |
| Longitude | 116.26° W |

PV System Specifications (Residential)

| | |
|-----------------------|-----------------|
| DC System Size | 94610.88 kW |
| Module Type | Premium |
| Array Type | 1-Axis Tracking |
| Array Tilt | 20° |
| Array Azimuth | 180° |
| System Losses | 14.08% |
| Inverter Efficiency | 96% |
| DC to AC Size Ratio | 1.2 |
| Ground Coverage Ratio | 0.4 |

Economics

| | |
|---------------------------------|--------------|
| Average Retail Electricity Rate | 0.164 \$/kWh |
|---------------------------------|--------------|

Performance Metrics

| | |
|-----------------|-------|
| Capacity Factor | 27.1% |
|-----------------|-------|