

From: [Mehl, Dave@ARB](mailto:Mehl.Dave@ARB)
To: [Patrick BROWN \(Patrick.BROWN@soitec.com\)](mailto:Patrick.BROWN@soitec.com); [Slovick, Mark](#); [Boparai, Poonam](#)
Subject: Soitec Solar
Date: Tuesday, March 12, 2013 8:23:16 AM
Attachments: [EO for Soitec Project .docx](#)
[Soitec Staff Evaluation.docx](#)

Attached for your review and comment are drafts of the staff analysis and Executive Order for the Soitec Solar AB 900 application. Please review and let me know if you have any comments or concerns by COB today so that I can move this to my management.

Thanks, Dave

**State of California
AIR RESOURCES BOARD**

EXECUTIVE ORDER LP-13-001

**Relating to determination of any net additional greenhouse gas emissions
pursuant to Public Resources Code section 21183(c)**

For Soitec Solar Energy Project, Soitec Solar Development, LLC

WHEREAS, in September 2011, Governor Brown signed Assembly Bill 900, "Jobs and Economic Improvement through Environmental Leadership Act" (AB 900);

WHEREAS, in accordance with the AB 900, the Governor may certify certain projects for streamlining under the California Environmental Quality Act (CEQA) if certain conditions are met;

WHEREAS, in accordance with California Public Resources Code section 21183, subdivision (c), one condition for the Governor's certification is that the project does not result in any net additional emission of greenhouse gases (GHGs), including GHG emissions from employee transportation, as determined by the Air Resources Board (ARB);

WHEREAS, the Governor's Guidelines for applications for the CEQA streamlining require, for purposes of ARB's determination on GHGs, that an applicant submit electronically to ARB a proposed methodology for quantifying a project's net additional GHGs and documentation that the project does not result in any net additional GHGs;

WHEREAS, in accordance with the Governor's Guidelines, Soitec Solar Development, LLC submitted its GHG methodologies and documentation to ARB on the proposed Soitec Solar Energy Project (Project) on January 7, 2013;

WHEREAS, Soitec Solar Development, LLC submitted revised GHG methodologies and documentation to ARB on March 7, 2013;

WHEREAS, the "Rugged Solar LLC Project Climate Change and Greenhouse Gas Emissions Analysis" and the "Greenhouse Gas Analysis, Tierra del Sol Farm Project" (Analyses) submitted for the Soitec Solar Energy Project state that the Project's estimated GHG emissions are as follows:

1. Construction GHG Emissions: 8,250 metric tons of carbon dioxide equivalent (MTCO₂e) generated by the equipment used for construction activities and from both on-site and off-site motor vehicles;

2. Direct Operation-Related GHG Emissions: 10,230 MTCO₂e from fossil fuel combustion used to support operation of the facility, including employee transportation;
3. Indirect Operation GHG Emissions: 18,870 MTCO₂e emissions from electricity use and sulfur hexafluoride usage associated with electrical switchgear;
4. Total Project Lifetime GHG Emissions: 37,350 MTCO₂e from construction and operation of the Project during a projected 30-year operational lifetime.

WHEREAS, in the Analyses submitted, Soitec Solar Development, LLC proposes to secure 37,350 MTCO₂e carbon credits from a qualified greenhouse gas emission broker such as Evolution Markets, based in San Francisco, CA, or from a similar type of broker, to mitigate the total identified construction and operational GHG emissions prior to the commencement of the Project;

WHEREAS, ARB staff has reviewed and evaluated the submitted Analyses in consultation with the lead agency; prior to finalizing its determination, staff shared a draft of its evaluation with the lead agency;

WHEREAS, staff's evaluation of the Analyses found that it provides an adequate technical basis for estimating the total GHG emissions and required mitigation for the Project;

WHEREAS, ARB's review and evaluation of the Project's GHG emissions is for the limited purpose of the Governor's findings and certification under AB 900; ARB's determination is not in lieu of any findings or determination required to be made by the lead agency or a responsible agency pursuant to any other requirement under state or federal law, including CEQA; the lead agency remains responsible for full compliance with CEQA for this project;

NOW, THEREFORE, based on ARB staff's evaluation (Attachment A) of the Analyses submitted by Soitec Solar Development, LLC (Attachment B), I determine that the Soitec Solar Energy Project will not result in any net additional greenhouse gas emissions pursuant to Public Resources Code section 21183(c).

Executed at Sacramento, California this day of March 2013.

James N. Goldstene
Executive Officer

Attachments

Attachment A

Air Resources Board
Staff Evaluation

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Air Resources Board Evaluation
of Greenhouse Gas Emission Methodologies and Documentation
Pursuant to Public Resources Code Section 21183, subdivision (c)

Project Information

Project Name: Soitec Solar Energy Project

Project Applicant: Soitec Solar Development, LLC

Project Location: Unincorporated portion of San Diego County near the community of Boulevard

Project Description: The proposed Soitec Solar energy Project (Project) consists of two sub-components, including the Tierra del Sol Solar Farm which would be a 60 megawatt (MW) net solar power generating installation and the Rugged Solar Farm, which would be an up-to 84 megawatt net solar power generating installation. Both the Tierra del Sol and Rugged Solar Farms will be located in an unincorporated portion of San Diego County. The Project will utilize concentrating photovoltaic (CPV) electric generation system technology for the generation of solar energy. The entire up-to 144 megawatt Project would be developed over an area of approximately 1,185 acres of privately-owned land, plus the necessary transmission line rights-of-way, the precise location and length of which shall be finalized at a future date.

AB 900 Standards and Applicants Proposed Method of Compliance

The Governor may certify a project for streamlining pursuant to Assembly Bill 900 “Jobs and Economic Improvement through Environmental Leadership Act” if certain conditions are met. (Public Resources Code § 21178 et seq.) One such condition is that the “project does not result in any net additional emission of greenhouse gases, including greenhouse gas emissions from employee transportation, as determined by the Air Resources Board pursuant to Division 25.5. (commencing with Section 38500) of the Health and Safety Code.” (Public Resources Code § 21183, subdivision (c).)

In accordance with the Guidelines established by the Governor for applying for the streamlining, Soitec Solar Development, LLC submitted the “Rugged Solar LLC Project Climate Change and Greenhouse Gas Emissions Analysis” and the “Greenhouse Gas Analysis, Tierra del Sol Farm Project” (Analyses) for the proposed Project to the Air Resources Board (ARB) for review and evaluation. The Analyses state that the proposed Project would emit an estimated 8,237 metric tons carbon dioxide equivalent (MTCO₂e) greenhouse gas (GHG) emissions during construction and 29,130 MTCO₂e GHG emissions during 30 years of operation, for a total of 37,367 MTCO₂e of GHG emissions.

The Analyses state that the proposed Project will result in the displacement of more GHG intensive forms of energy production, and therefore, would result in an overall net reduction in GHG emissions. However, the Analyses state that to ensure the proposed Project meets the requirements of Public Resources Code section 21183, subdivision (c), Soitec Solar Development, LLC has proposed to secure voluntary

carbon credits equivalent to 37,350 MTCO₂e to mitigate the GHG emissions expected to be generated during construction and operation of the proposed Project. By mitigating the total projected GHG emissions, the Analyses conclude that the proposed project will not result in any net additional GHG emissions.

The Analyses state that a programmatic Environmental Impact Report (EIR) is being prepared for the proposed Project pursuant to the California Environmental Quality Act (CEQA). Prior to approval of the proposed Project, the EIR must be certified by the lead agency (San Diego County) and a mitigation monitoring and reporting plan must be adopted. The Report states that the applicant expects that all mitigation measures necessary to ensure compliance will be included in the mitigation monitoring and reporting plan, as conditions of project approval, or both. According to the Application for CEQA Streamlining Under the “Jobs and Economic Improvement through Environmental Leadership Act” submitted with the Analyses, the applicant will be required to implement all mitigation measures contained in the mitigation monitoring and reporting plan and adhere to all conditions of project approval set forth by San Diego County.

GHG Emissions Calculation Methodology

The Analyses evaluated the emissions of four categories of GHGs: carbon dioxide, nitrous oxide, methane, sulfur hexafluoride. Hydrofluorocarbons and perfluorocarbons were not evaluated as they are not expected to be emitted at the Project. Carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄) are GHGs emitted by combustion sources and would be directly emitted by the equipment and vehicles used for constructing the Project. Sulfur hexafluoride (SF₆) may be emitted from some types of electrical switchgear associated with the Project.

The Analyses state that CO₂ is expected to be the primary GHG of concern for this project, however the applicant included emission estimates of CH₄, N₂O, and SF₆. ARB staff agrees that in most cases CO₂ drives the projected GHG emissions associated with fuel combustion. ARB staff expects that there may be SF₆ emissions associated with the Project due to gas-insulated switchgear being used in conjunction with the Project. ARB staff would not expect any HFC or PFC emissions associated with the Project because of the specialty nature of these compounds, one of the most common forms of usage is as a refrigerant.

The CO₂ emissions from construction equipment and motor vehicle use were estimated in the Analyses using URBEMIS 2007 version 9.2.4, Road Construction Emissions Model version 7.1.2, OFFROAD 2007 and EMFAC 2011 emission models to estimate CO₂ emissions. Since the URBEMIS and OFFROAD models do not estimate all GHG pollutants, the estimated emissions were adjusted to compensate.

ARB staff agrees that URBEMIS with revised load factors from EMFAC 2011 is an appropriate model for estimating CO₂ emissions from mobile equipment. Staff agrees

that using CO₂ emissions from URBEMIS and back-calculating comparable N₂O and CH₄ emissions is a reasonable way to estimate these emissions.

The Analyses separated construction emissions from the project into those associated with the Rugged and Tierra del Sol sub-projects and are shown in the table below.

Analyses Annual Construction Emissions

Year	Rugged	Tierra del Sol	Combined
2014	4,548	2,190	6,738
2015	415	1,097	1,512
Total	4,963	3,287	8,250

The Analyses state that the Project's operation would emit GHGs from the use of equipment and vehicles. It further states that GHGs could be emitted as fugitive emissions from electrical switchgear that contains SF₆ and indirect GHG emissions due to electricity use from off-site generators.

The Analyses estimated GHG emissions for on-site equipment based on anticipated project-based activity data and OFFROAD and EMFAC emission factors. The Report estimated vehicle emissions using the same methodology used to estimate vehicle emissions during construction. SF₆ emissions were assumed to be emitted at half the allowable level for calendar year 2020 under ARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (GIS) (California Code of Regulations, title 17, sections 95350 – 95359), which is also a common manufacturer guarantee level of emissions from GIS.

ARB staff agrees that using projected project-based activity data from equipment and vehicles is a valid basis for estimating GHG emissions from these devices. The models used are a reasonable source for emission factors from these devices. Staff agrees that this is an appropriate methodology for the same reasons as were detailed under the review of the applicant's estimation of GHG emissions from equipment used during construction.

ARB adopted a regulation pertaining to the maximum allowable SF₆ emission rate from gas insulated switchgear. The regulation starts at a ten percent leak rate allowed in 2011 and decrease one percent per year until it reaches a one percent allowable leak rate in 2020. The Analyses assumed that the switchgear used would emit at the rate of one-half of a percent, based on installed capacity, annually from the time of installation through the life of the project. Currently available new switchgear typically has a maximum leak rate of one-half percent or less. As such, ARB staff agrees that the applicant used a reasonable estimation of SF₆ emissions.

Analyses' Annual GHG Emission Estimates from Project Operation (MTCO₂e/yr)

	Rugged	Tierra del Sol	Annual Emissions
Fossil Fuel Combustion	166	166	332
Indirect Electricity Use	346	275	621
Fugitive Sulfur Hexafluoride	4	4	8
Water and Wastewater	7	2	9
Total Annual Operations	523	447	970

The Analyses derived the Project's total GHG emissions by combining construction and operational GHG emission for a 30-year project life. This yields a total GHG estimate of 37,350 MTCO₂e. Based on the staff evaluation of the calculations for estimating emissions as described above, staff agrees that 37,350 MTCO₂e is a reasonable estimate of the Project's total GHG emissions over the lifetime of the Project.

Carbon Credits

Soitec Solar Development, LLC proposes to secure 37,350 MTCO₂e worth of voluntary carbon credits from Evolution Markets, based in San Francisco, California, or from a similar type of broker that deals directly with voluntary credit generators.

Conclusions/Recommendations

The ARB staff reviewed the GHG emission estimates and the methodology provided by the applicant. During its review, ARB staff had numerous conversations with the CEQA lead agency, the County of San Diego, and consultants working on the CEQA evaluation for this Project. Based on these discussions with lead agency representatives, staff concluded that the emissions estimates and methodology submitted to ARB are consistent with how the lead agency is planning to evaluate the Project's GHG emissions.

Based on the staff's evaluation of the documentation provided in the Analyses and the discussions with the lead agency's consultants, staff concludes that the project applicant has reasonably documented and estimated the Project's anticipated GHG emissions. If Soitec Solar Development, LLC secures the proposed GHG emission credits described in the Analyses, then the Project's estimated GHG emissions would be fully mitigated.

Based on this evaluation, ARB staff recommends that a determination be made that the Soitec Solar Energy Project does not result in any net additional emission of greenhouse gases, including greenhouse gas emissions from employee transportation, pursuant to Public Resources Code section 21183, subdivision (c).