

Cumulative Biological Impacts Framework for Solar Energy Projects in the California Desert

December 2010

Fact Sheet

The Issue

California has a goal to serve at least 33 percent of its electricity demand with renewable energy by the year 2020. Large-scale solar developments are crucial to achieving this goal. Such developments are land intensive and they can have negative impacts on ecosystems and vulnerable species, especially in the desert.

Many areas of high solar energy potential are in fragile environments that are easily disturbed and difficult, if not impossible, to functionally restore. Greater understanding is needed of habitat-related effects and cumulative impacts. Improved habitat suitability models and planning tools can help overcome major obstacles in the regulatory planning process. A scientifically defensible framework for conducting consistent, reliable assessments of biological impacts is urgently needed both to protect our desert ecosystems and to implement solar energy projects in a timely manner.

Project Description

This project will produce predictive habitat suitability and siting criteria maps, and a framework and tools for determining cumulative impacts.

The goals of this project are to:

- Develop a spatial multicriteria siting model for avoiding or minimizing impacts in the Desert Renewable Energy Conservation Plan (DRECP) Planning Area.
- Develop methods and data for off-setting impacts that cannot be mitigated onsite.

DRECP Planning Area Map



The DRECP Planning Area. (Image Credit: California Department of Fish and Game)

- Enhance habitat suitability models to predict the distributions of sensitive plants, animals, and plant communities so that the models are responsive to the cumulative changes from solar energy development, climate change, and urban growth.
- Develop a framework for assessing the cumulative biological impacts of solar energy projects and their interactions with future urban growth and climate change and adaptation.

PIER Program Objectives and Anticipated Benefits for California

This research will provide tools to assess the cumulative biological impacts of solar energy



Arnold Schwarzenegger, Governor
California Energy Commission

Chairman Karen Douglas | Vice Chair James D. Boyd
Commissioners: Jeffrey D. Byron, Anthony Eggert, Robert B. Weisenmiller
Executive Director: Melissa Jones
Interim Chief Deputy Director: Thom Kelly

California Energy Commission
Public Interest Energy Research
1516 Ninth Street,
Sacramento, CA 95814-5512

Cumulative Biological Impacts Framework for Solar Energy Projects in the California Desert

December 2010

Fact Sheet

development in California's desert regions within a framework for a consistent, defensible assessment of cumulative impacts. It will help protect the state's fragile desert ecosystems and environmental quality, while helping to facilitate the permitting process and the implementation of solar energy projects by providing critical planning tools.

Through its focus on solar energy development, this project will help to ensure that renewable projects located in the desert can provide renewable energy to California residents in an environmentally responsible manner.

Project Specifics

Contract Number: 500-10-021
Contractor: UC Santa Barbara
Contract Amount: \$383,787
Contract Term: November 2010 to May 2013

For more information, please contact:

Misa Milliron
California Energy Commission
PIER Program, Environmental Area
Phone: 916-651-9010
E-mail: Mward@energy.state.ca.us

Disclaimer

Although funded by the Energy Commission, the recipient is responsible for the research. The Commission, its employees, and the State of California make no warranty, expressed or implied, and assume no legal liability for this information or the research results.



Arnold Schwarzenegger, Governor
California Energy Commission

Chairman Karen Douglas | Vice Chair James D. Boyd
Commissioners: Jeffrey D. Byron, Anthony Eggert, Robert B. Weisenmiller
Executive Director: Melissa Jones
Interim Chief Deputy Director: Thom Kelly

California Energy Commission
Public Interest Energy Research
1516 Ninth Street,
Sacramento, CA 95814-5512