

Utility-Scale Solar Power

Strategic Planning for Habitat Conservation

Overview

To produce clean power cost-effectively, utility-scale solar power plants often cover a sizeable land area. This may require grading of the land and other alterations, including fencing and road construction, which can affect the habitats of local and migratory species. The laws and regulations governing power plants' environmental compliance in the United States, particularly in California, are among the most stringent and detailed in the world with regard to mitigating the possible impacts of such facilities on wildlife. As a result, the solar industry has developed extensive experience with and sensitivity to handling habitat issues.

Environmental Review

Every single USP solar project proposed on either private or public lands in the U.S. Southwest must navigate complex federal, state, and local regulatory channels regarding natural resources and habitat conservation. Through the Bureau of Land Management (BLM), the U.S. Department of Interior is authorized to permit the development of solar and other energy projects on federal public lands.¹

BLM right-of-way (ROW) permits undergo a strict review process before being issued, as required by the National Environmental Policy Act of 1969.² Solar companies provide detailed project construction plans, conduct numerous environmental studies, prepare environmental impact statements, and propose mitigation strategies.



Source: BrightSource Energy

The BLM, in coordination with the U.S. Fish and Wildlife Service, state authorities and local authorities, conducts analyses of the site and holds public hearings with members of the community to gauge the impact of the project on the area. An Environmental Impact Statement (EIS) is issued for each project before the final Record of Decision is announced. The estimated length of time required for an environmental review for a proposed solar power plant on public lands is approximately three to five years.³

Under direction from Congress and the President, federal agencies are in the process of drafting a Programmatic Environmental Impact Statement (EIS) for solar development on public lands.⁴ The goal is to adopt best practices and policies to expedite the permitting of worthy projects. The solar industry is actively engaged in crafting these policies.

To date, no solar power plants have been permitted on BLM lands.

Important Federal Legislation

Federal Land Policy and Management Act of 1976
National Environmental Policy Act of 1969
Endangered Species Act of 1973
Clean Water Act of 1977
Migratory Bird Treaty Act of 1918

Related Agency Jurisdiction

U.S. Bureau of Land Management
U.S. Fish and Wildlife Service
United States Army Corps of Engineers

Strategic Planning in Action

When managing solar projects sited near sensitive habitats, solar project developers have consulted closely with federal and state agencies to ensure maximum protection and conservation.

Completed Projects

- For the construction of two 80-MW parabolic trough concentrating solar power (CSP) plants in Kramer Junction, Calif., in the late 1990s, developers took special measures to ensure the protection of the endangered desert tortoise, including special training for plant staff, a dedicated Tortoise Patrol Officer, and a unique fence to keep tortoises off of the plant's access road. The staff at that same plant also protected local flora by relocating and replanting Joshua Tree cacti and other sensitive or potentially endangered plants.
- A 1985 study on the impact on local bird populations by the 10 MW Solar One power tower plant on 80 acres of land in Daggett, Calif., concluded that plant operations had "minimal" impact on the local bird population, indicating a proper balance can be struck when developing utility-scale solar projects.⁵



Source: Sandia National Laboratories

Projects under Development

- BrightSource Energy, Inc. is currently in consultations with agencies regarding its proposed 400 MW Ivanpah Solar Electric Generating System on public land in San Bernardino, Calif. Among its habitat and land mitigation plans, the company will develop a Desert Tortoise Translocation Plan and a Revegetation and Reclamation Plan, including the purchase of 4,000 acres of land to relocate the tortoise and other sensitive plant and animal species.⁶
- CSP project developer Tessler Solar is working with the Bureau of Land Management in identifying and purchasing 6,619 acres of suitable land at a cost of \$5.7 million to relocate the flat-tailed horned lizard population from its proposed Solar Two project near El Centro, Calif. The developer has also proposed building fences around the project's evaporation ponds and overlaying ponds' surface areas with netting to deter predators that prey on lizards and other species.⁷



Source: NREL

About the Solar Energy Industries Association

Established in 1974, the Solar Energy Industries Association® is the national trade association of the U.S. solar energy industry. Through advocacy and education, SEIA and its 1,000 member companies are building a strong solar industry to power America. As the voice of the industry, SEIA works to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry and educating the public on the benefits of solar energy.

For a referenced version of this factsheet and more information, please visit www.seia.org.

¹ See Title V of the Federal Land Policy and Management Act (FLPMA) of 1976. Accessed online 16 September 2009.

<http://www.blm.gov/flpma/FLPMA.pdf>

² See “Obtaining a Right-of-Way on Public Lands” (March 2009) and “Solar Energy Plan of Development” (July 2008). U.S. Bureau of Land Management. Accessed online 30 July 2009.

http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/cost_recovery.Par.58417.File.dat/ObtainingaROWPamphlet.pdf;

http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY_AND_RESOURCE_PROTECTION_/cost_recovery.Par.96285.File.dat/Solar_POD.pdf

³ NEPA Environmental Impact Assessment (EIS) can take 24-48 months to complete, in addition to up to 12 months for BLM application processing.

⁴ Anticipated to be finalized in 2011, the goal of the Programmatic EIS is to “develop and implement agency-specific programs that would facilitate environmentally responsible utility-scale solar energy development by establishing environmental policies and mitigation strategies related to solar energy development in six western states (Arizona, California, Colorado, New Mexico, Nevada, and Utah).” See “What Will Be in the Solar Energy Development Programmatic EIS.” Argonne National Laboratory. Accessed online 30 July 2009.

<http://solareis.anl.gov/eis/what/index.cfm>

⁵ McCrary, M. D., et al. “Avian Mortality at a Solar Energy Power Plant.” *Journal of Field Ornithology*: Vol. 57, No. 2, Spring, 1986.

Accessed online 30 July 2009. <http://elibrary.unm.edu/sora/JFO/v057n02/p0135-p0141.pdf>

⁶ “Preliminary Staff Assessment - Ivanpah Solar Electric Generating System Application For Certification (07-AFC-5). December 2008.

California Energy Commission. Accessed online 30 July 2009. <http://www.energy.ca.gov/sitingcases/ivanpah/index.html>

⁷ “SES Solar Two Project: Staff Assessment and Draft Environmental Impact Statement and Draft California Desert Conversation Area Plan Amendment.” Bureau of Land Management. 12 February 2010. Accessed online 22 February 2010.

<http://www.blm.gov/ca/st/en/fo/elcentro/nepa/stirling.html>