

# 500-megawatt plant to join Calif. solar complex

Scott Streater, Environment & Energy Publishing, 5-26-11

The Bureau of Land Management is moving to fulfill its commitment to have 10 large-scale solar power plants under construction by the end of the year.

The latest step is the release last week of BLM's final environmental impact statement (EIS) for Solar Millennium LLC's Palen Solar Project, proposed to cover about 4,300 acres of mostly BLM land in southern California's Chuckwalla Valley in Riverside County.

The \$2 billion Palen project is the second large-scale solar proposal this year to reach the final stage of the BLM permitting process. At full capacity, the concentrated solar plant could produce as much as 500 megawatts of electricity -- enough to power nearly 200,000 homes.

"It's very exciting," said Andrea Elliott, the senior communications manager for Solar Trust of America, the parent company of Oakland, Calif.-based Solar Millennium. "This is a 500-megawatt facility. That's not messing around. That's a lot of clean, renewable power."

The Palen development follows BLM's issuance last month of a final EIS for First Solar Inc.'s Desert Sunlight Solar Farm Project, which would string together hundreds of photovoltaic solar panels across 4,200 acres of federal land -- also in the Chuckwalla Valley -- and have the capacity to power about 220,000 homes.

The Palen and Desert Sunlight projects are among 10 solar plant proposals that the Interior Department has identified as top priorities for 2011. Cumulatively the projects would cover more than 13,000 acres of mostly BLM land in Arizona, California and Nevada, and have the cumulative capacity to produce 2,950 megawatts of electricity -- enough to power about 1.1 million homes.

Last year the agency permitted nine commercial-scale solar plants, including Solar Millennium's 1,000-megawatt Blythe Solar Power Project, that at full capacity should generate almost 4,000 megawatts of electricity.

Greg Miller, renewable energy program manager for BLM's California Desert District, said the issuance of the Palen final EIS represents another important step in the government's effort to have 10,000 megawatts of solar, wind and geothermal energy in operation by 2015.

The 1,600-page document is open for public review and comment through June 13. Miller said BLM plans to issue a record of decision (ROD) by late August authorizing construction.

Solar Millennium officials want to start the 39-month construction this year, and say the plant could come online as early as fall 2014.

"This corner of California, Nevada and Arizona is one of the highest solarity areas in the United States," Miller said. "When the solar industry saw that, they said 'Hey that's lots of contiguous acres where we could put large-scale projects.'"

## Limited water resources

Still, the priority solar projects must adhere to guidelines issued to BLM field managers in February by BLM

Director Bob Abbey and Interior Secretary Ken Salazar to reduce environmental impacts. As part of that process, the Fish and Wildlife Service and National Park Service screened the Palen proposal, turning up a number of issues that BLM and the company are working to address.

One of the greatest challenges is the Mojave Desert region's limited groundwater resource. The Palen plant would need to pull groundwater from 10 new wells from the Chuckwalla Valley Groundwater Basin, mostly to clean solar mirrors.

Solar Millennium has said it will use a "dry-cooling" system that will reduce by 90 percent the amount of water that a similarly sized plant would typically use, said Elliott, the Solar Trust of America spokeswoman. "One of the reasons we chose to do dry cooling is to maintain the groundwater supply."

BLM estimates that during the 30-year life of the project, the plant will use about 97 million gallons a year. The agency calculated in its final EIS that the groundwater basin currently contains a surplus of nearly 850 million gallons.

"Individually, this is a small amount of the available water in the Chuckwalla Valley Groundwater Basin, which has plenty of available water to more than offset this use," the EIS states.

But a cumulative analysis of water impacts in the region from Palen and six other energy-related projects -- including the Desert Sunlight project and NextEra Energy Resources' 250-megawatt Genesis Solar Energy project -- that have either already been permitted or are expected to be built over the next five years shows potential problems.

Those plants could consume as much as 3.2 billion gallons a year by 2014 -- creating a shortfall in the groundwater system of about 370 million gallons a year, the final EIS notes.

BLM, however, concluded in the EIS that the cumulative impact of these projects to the groundwater system "is considered small" because there's more than 1,000 times that amount of "recoverable" water stored within the entire groundwater basin.

Jeff Aardahl, a biologist and the California representative for Defenders of Wildlife, said BLM's reasoning about groundwater availability is flawed.

"It's irrelevant how much groundwater is in storage. The issue is if the amount of [water] use creates a situation where it exceeds the recharge, so that every year that use exceeds the amount of water coming into the basin," Aardahl said. "They're saying that's miniscule to the amount of water in the basin in storage, and to me that's kind of irrelevant."

Miller said the recoverable water issue is significant as BLM works with Solar Millennium to develop a compliance and monitoring plan that will set a groundwater withdrawal limit for the plant. Once monitoring wells show that the company has reached its threshold, "then they would have to get their water elsewhere, maybe truck it in," he said.

He added: "The trigger point will be in there. The monitoring and compliance plan will say, 'All right, if the water level reaches this level, they need to find an alternative source.'"

But Brian Brown, a resource advocate with the Amargosa Conservancy in Shoshone, Calif., said there's a deeper issue that BLM and solar firms are not considering with the siting and permitting of large-scale solar projects in places like southern California.

"Why in the driest part of North America are we going to pump out groundwater for this project?" Brown said. "There's very little water out there. To delegate that much water for industry uses is just not a good long-term plan."

### **Tortoises and lizards**

The threatened Mojave Desert tortoise also has become a consistent obstacle for solar-power developers in southern California and Nevada.

The Palen project would remove about 3,700 acres of "low to moderate" desert tortoise habitat, according to the final EIS. However, that includes more than 200 acres of what BLM considers "critical habitat" within the boundaries of the Chuckwalla Desert Tortoise Critical Habitat Unit.

The EIS also points to numerous secondary impacts on tortoises, including the likelihood that the project will attract tortoise predators such as kit foxes and coyotes, and the possibility that structures such as transmission lines will provide perches for ravens, which eat tortoise eggs.

As a result, Solar Millennium is devising a plan to relocate any desert tortoises found on the site to a safe location -- a strategy that an FWS science advisory panel noted "is fraught with long-term uncertainties ... and should not be considered lightly as a management option," according to the EIS.

Surveys conducted at the Palen project site over the past few years found few desert tortoises, with only six live animals observed in the study area during a spring 2010 survey, according to the final EIS.

But Ileene Anderson, a staff biologist for the Center for Biological Diversity in Los Angeles, questioned the survey methods used by solar project developers in the Mojave Desert region, which she said tend to underestimate the number of tortoises in specific locations. Anderson also said she worries that as more tortoise habitat is fragmented, the animals will lose their ability to maintain genetic diversity and become more susceptible to disease.

"They're just nibbling away at its habitat," Anderson said. "It could be extinction by a thousand cuts."

Another concern is impacts to the Mojave fringe-toed lizard, a state-designated species of concern that is found only in the southern California desert and is thus being affected by a number of solar-power developments.

The Palen project would occupy a sand dune area known to be inhabited by lizards. And while the construction of the plant would not cause direct harm to the dunes, fences around the site would block blowing sand that helps replenish dunes downwind of the site.

Solar Millennium slightly reconfigured its plant layout to mitigate the dune transport issue as much as possible. Doing so "will significantly reduce the impact on their area and that's important," Elliott said.

Aardahl, the Defenders of Wildlife biologist, said he was encouraged by that decision. "It shows they're taking the issue seriously, which is always good to see," he said.