A Green Idea for Brown Farm Fields in California

Todd Woody, New York Times, 8-10-10

LEMOORE, Calif. — Thousands of acres of farmland here in the San Joaquin Valley have been removed from agricultural production, largely because the land, once fertile, is contaminated by salt buildup from years of irrigation.

But large swaths of those dry fields could have a valuable new use in their future — making electricity.

Farmers and officials at Westlands Water District, a public agency that supplies water to farms in the valley, have agreed to provide land for what would be one of the world's largest solar energy complexes, to be built on 30,000 acres.

At peak output, the proposed Westlands Solar Park would generate as much electricity as several big nuclear power plants.

Unlike some renewable energy projects blocked by objections that they would despoil the landscape, this one has the support of environmentalists.

The San Joaquin initiative is in the vanguard of a new approach to locating renewable energy projects: putting them on polluted or previously used land. The Westlands project has won the backing of groups that have opposed building big solar projects in the Mojave Desert and have fought Westlands for decades over the district's water use. Landowners and regulators are on board, too.

"It's about as perfect a place as you're going to find in the state of California for a solar project like this," said Carl Zichella, who until late July was the Sierra Club's Western renewable programs director. "There's virtually zero wildlife impact here because the land has been farmed continuously for such a long time and you have proximity to transmission, infrastructure and markets."

Recycling contaminated or otherwise disturbed land into green energy projects could help avoid disputes when developers seek to build sprawling arrays of solar collectors and wind turbines in more pristine areas, where they can affect wildlife and water supplies.

The United States Environmental Protection Agency and the National Renewable Energy Laboratory, for instance, are evaluating a dozen landfills and toxic waste sites for wind farms or solar power plants. In Arizona, the Bureau of Land Management has started a program to repurpose landfills and abandoned mines for renewable energy production.

In Southern California, the Los Angeles Department of Water and Power has proposed building a 5,000-megawatt solar array complex, part of which would cover portions of the dry bed of Owens Lake, which was drained when the city began diverting water from the Owens Valley in 1913. Having already spent more than $500 million to control the intense dust storms that sweep off the lake, the agency hopes solar panels can hold down the dust while generating clean electricity for the utility. A small pilot project will help determine if solar panels can withstand high winds and dust.

"Nothing about this is simple, but it's worth doing," Austin Beutner, the department's interim general manager, said of the pilot program.

All of the projects are in early stages of development, and many obstacles remain. But the support they've

garnered from landowners, regulators and environmentalists has attracted the interest of big solar developers such as SunPower and First Solar as well as utilities under pressure to meet aggressive renewable energy mandates.

Those targets have become harder to reach as the sunniest undeveloped land is put off limits.

Last December, Senator Dianne Feinstein, Democrat of California, introduced legislation to protect nearly a million acres of the Mojave Desert from renewable energy development.

But the senator's bill also includes tax incentives for developers who build renewable energy projects on disturbed lands.

For Westlands farmers, the promise of the solar project is not clean electricity, but the additional water allocations they will get if some land is no longer used for farming.

"Westlands' water supply has been chronically short over the past 18 years, so one of the things we've tried to do to balance supply and demand is to take land out of production," said Thomas W. Birmingham, general manager of the water district, which acquired 100,000 acres and removed the land from most agricultural production. "The conversion of district-owned lands into areas that can generate electricity will help to reduce the cost of providing water to our farmers."

That is one reason the solar project has the support of local farmers. Circling above his 5,300 acres of farmland in a small plane recently, Mark Shannon gazed down on rows of almond and pistachio trees surrounded by brown fields. With water deliveries slashed because of drought and environmental disputes, he could plant only 20 percent of his property with irrigated crops this year.

"Come hell or high water, there just is not enough water to farm this whole district," Mr. Shannon, 41, said. "If I lease my land for solar, we can farm elsewhere."

That morning, representatives of the water district, the Sierra Club, the Natural Resources Defense Council and Westlands Solar Park, had gathered in a field of dry-farmed wheat on his property to talk strategy.

"We're holding Westlands up as a model to utilities, regulators and solar developers on how to take pressure off undeveloped land and move projects forward," said Helen O'Shea, deputy director of the N.R.D.C.'s Western renewable energy project.

Daniel Kim and Bob Dowds, the principals of Westside Holdings, the firm that has proposed the Westlands Solar Park, said the first phase of the project would consist of 9,000 acres leased from farmers. When covered in solar panels, that acreage would generate 600 to 1,000 megawatts of electricity. One megawatt is enough to power a Wal-Mart Supercenter.

Westlands sits in a major transmission corridor, and existing capacity in the area could realistically accommodate up to 600 megawatts from the project, according to Mr. Dowds. Building out the solar park to 5,000 megawatts will require major upgrades to transmission lines and take more than a decade.

"You're talking about billions of dollars of investment, private and public to make this really work at that scale," Mr. Dowds said.

Brian McDonald, director of renewable resource development for Pacific Gas and Electric, California's largest utility, said, "Right now, Westlands is a concept we strongly support." However, he added that with such reuse

projects, “the proof is in the pudding — on the surface, they tend to look simple but they realistically have a lot of hurdles to overcome to build them out.”

SunPower, a Silicon Valley company that is one of the nation’s largest solar panel manufacturers and photovoltaic power plant developers, has had initial discussions with Westlands Solar Park officials. “I think you’ll see quite a bit of solar there and we certainly want to be a part of that,” said Paul McMillan, an executive with SunPower’s utilities and power plants division.

Dave Kranz, a spokesman for the California Farm Bureau Federation, said that solar energy might make sense for Westlands, but added in an e-mail: “We believe that farmland should be used for farming, and that productive farmland is an environmental attribute as valuable as renewable energy production.”

The pressure to reuse farmland for energy production is likely to accelerate, though. The federal government wants Westlands to take another 100,000 acres out of production to ameliorate salt and selenium problems. And Cadiz, a big California landowner, is considering converting more than 10,000 acres of farmland in the sun-soaked Mojave Desert for use as a solar park, according to Richard E. Stoddard, chief executive of the company’s Cadiz Real Estate subsidiary.

For Mr. Shannon, whose family has farmed the land here for three generations, going solar will allow him to continue farming on property he owns on the other side of the valley.

“We just want to get enough money to get the bank off our back,” he said. “We would love to stay here because this is some of the best dirt in the world. But I can’t farm myself out of this water problem.”