

Sacrificing the desert to save the Earth

Environmentalists are torn over the high cost of breaking reliance on fossil fuels. Public comment has been sought, but insiders are calling the shots.

Julie Cart, Los Angeles Times, 2-5-12

IVANPAH VALLEY, Calif. -- Construction cranes rise like storks 40 stories above the Mojave Desert. In their midst, the "power tower" emerges, wrapped in scaffolding and looking like a multistage rocket.

Clustered nearby are hangar-sized assembly buildings, looming berms of sand and a chain mail of fencing that will enclose more than 3,500 acres of public land. Moorings for 173,500 mirrors — each the size of a garage door — are spiked into the desert floor. Before the end of the year, they will become six square miles of gleaming reflectors, sweeping from Interstate 15 to the Clark Mountains along California's eastern border.

BrightSource Energy's Ivanpah solar power project will soon be a humming city with 24-hour lighting, a wastewater processing facility and a gas-fired power plant. To make room, BrightSource has mowed down a swath of desert plants, displaced dozens of animal species and relocated scores of imperiled desert tortoises, a move that some experts say could kill up to a third of them.

Despite its behemoth footprint, the Ivanpah project has slipped easily into place, unencumbered by lasting legal opposition or public outcry from California's boisterous environmental community.

The public got its chance to comment at scores of open houses, but the real political horse trading took place in meetings involving solar developers, federal regulators and leaders of some of the nation's top environmental organizations.

Away from public scrutiny, they crafted a united front in favor of utility-scale solar development, often making difficult compromises.

"I have spent my entire career thinking of myself as an advocate on behalf of public lands and acting for their protection," said Johanna Wald, a veteran environmental attorney with the Natural Resources Defense Council. "I am now helping facilitate an activity on public lands that will have very significant environmental impacts. We are doing it because of the threat of climate change. It's not an accommodation; it's a change I had to make to respond to climate."

That unusual collaboration — along with generous federal subsidies and allotments of public land — has sparked a wholesale remodeling of the American desert.

Industrial-scale solar development is well underway in California, Nevada, Arizona, New Mexico, Colorado and Utah. The federal government has furnished more public property to this cause than it has for oil and gas exploration over the last decade — 21 million acres, more than the area of Los Angeles, Riverside and San Bernardino counties put together.

Even if only a few of the proposed projects are built, hundreds of square miles of wild land will be scraped clear. Several thousand miles of power transmission corridors will be created.

The desert will be scarred well beyond a human life span, and no amount of mitigation will repair it, according

to scores of federal and state environmental reviews.

"The scale of impacts that we are facing, collectively across the desert, is phenomenal," said Dennis Schramm, former superintendent at neighboring Mojave National Preserve. "The reality of the Ivanpah project is that what it will look like on the ground is worse than any of the analyses predicted."

In the fight against climate change, the Mojave Desert is about to take one for the team.

Urgency in the desert

Desert landscapes present an implacable face, changing at an undetectable pace. Any living thing must adapt and make peace with the relentless sun.

For decades, America's Western deserts have been dusty storehouses for government scrap, a lode for minerals, a staging ground for tanks and military maneuvers.

But the thrum of industry is afoot, bringing Space Age technology and a bustling sense of urgency.

The BrightSource solar plant stands as an exclamation point in the desert.

The \$2-billion plant is an amalgam of gadgetry designed to wring the maximum energy from the sun. Computers continually focus the field of mirrors to a center tower filled with water, which will heat to more than 1,000 degrees. The resulting steam drives an array of turbines capable of generating 370 megawatts, enough to power roughly 140,000 homes during peak hours.

Capturing a free and clean source of energy is not cheap. Solar is the Cadillac of energy, with capital costs and other market factors making it three times more expensive than natural gas or coal.

Ratepayers' bills will be as much as 50% higher for renewable energy, according to an analysis from the consumer advocate branch of the state Public Utilities Commission.

What has opened the way for such a costly source of energy is the dramatic turn in federal policy. As early as 2005, the Bush administration established generous programs to reward renewable energy developers. The Obama administration sweetened the pot, offering \$45 billion in federal tax credits, guaranteed loans and grants.

On the state level, former Gov. Arnold Schwarzenegger freed large solar plants from property tax and handed out \$90 million in exemptions from sales and use taxes. Under Gov. Jerry Brown, the state invested more than \$70 million in clean energy research last year, funded by a ratepayer surcharge.

The funding has sparked a land rush echoing the speculative booms in mining, railroad construction and oil and gas on Western federal land.

One of the first firms out of the gate was Oakland-based BrightSource Energy Inc., which received \$1.6 billion in federally guaranteed loans in addition to hundreds of millions in private capital derived from such disparate sources as NRG Energy Inc., Google Inc., investment bank Morgan Stanley and CalSTRS, the state's teachers' retirement fund.

By taking advantage of the available government subsidies, shrewd solar developers can get taxpayers to cover close to 80% of a multibillion-dollar project. The rest comes from investors, attracted by what amounts to a tax

shelter.

But other companies — often no more than a website and a phone number — obtained solar permits from the federal Bureau of Land Management with no apparent intention other than to sell their place in line. Some gobbled up permits, sat on the land and never turned a spade of soil.

Federal and state officials have used job creation to partly justify their subsidy of private solar companies. During the two to three years of a solar plant's construction, most new jobs will go to union tradesmen. But after a plant is built, employment opportunities are limited.

BrightSource's Ivanpah facility is expected to employ 1,000 workers at the height of construction, but that will shrink to 86 full-time maintenance and facility workers once it is up and running.

"What troubles me is that the public has bought the whole solar expansion hook, line and sinker because it's 'renewable,'" Schramm said. "The public would be up in arms if someone was building Disneyland next to a national park."

Larry LaPre, the Bureau of Land Management's wildlife biologist for much of the Mojave, said some aspects of the project have been carefully considered and painstakingly done. Other approaches, however, are "complete nonsense," among them BrightSource's experimental approach of shearing the tops of desert plants so they fit under elevated solar mirrors. The company calls it "gentle mowing."

"To get another barrel cactus, even a small one, takes 100 years," he said, driving around the Ivanpah construction site. LaPre peered through the windshield and ticked off what living things might be left after the developers complete their work.

"The birds are already gone. They're outta there," he said. The site "will have plants, short plants, and it will have mice and kangaroo rats and some lizards. That's it. Maybe some more common birds. The insects are an unknown, because you could have massive losses of pollinators because you have all these insects getting burned in the mirrors."

Jeffrey Lovich studies desert tortoises for the U.S. Geological Survey. In preparing a recent paper, he and a colleague scoured published research analyzing impacts from large solar farms on wildlife. They found one paper. Essentially, Lovich said, no one knows what will happen to wildlife in the Mojave.

"This is an experiment on a grand scale," Lovich said. "Science is racing to catch up."

Mainstream environmental groups, including the Sierra Club, the Wilderness Society, Defenders of Wildlife and the Natural Resources Defense Council, have been largely mute, having traded the picket line for a seat at the table when development plans were drawn.

The Center for Biological Diversity, one of the nation's most aggressively litigious environmental groups, has not challenged the Ivanpah project. It signed a confidential agreement not to oppose the project in exchange for concessions for the desert tortoise — mandating that BrightSource buy land elsewhere for conservation.

Some 24 environmental groups signed statements largely supporting the aims of solar developers. National environmental groups joined BrightSource and other solar companies in a letter sent Dec. 14 to the White House, asking the president to continue a federal renewable-energy subsidy.

The national office of the Sierra Club has had to quash local chapters' opposition to some solar projects, sending out a 42-page directive making it clear that the club's national policy goals superseded the objections of a local group. Animosity bubbled over after a local Southern California chapter was told to refrain from opposing solar projects.

Federal officials, solar companies and environmental groups argue that the urgency brought on by climate change has forced difficult trade-offs.

"We did the best we could," Interior Secretary Ken Salazar said in an interview. The goal, he added, has been to make sure the projects are "the least environmentally intrusive."

In the case of the Ivanpah project, for example, environmental groups were able to convince BrightSource to reduce the project's overall footprint and preserve a sensitive area near the foothills of the Clark Mountains.

"We didn't make them perfect," Wald, of the Natural Resources Defense Council, said of the solar projects. "We didn't eliminate their environmental impact because you can't eliminate the environmental impact. But we made them better."

Opposition instead has come from the federal government.

The National Park Service has voiced the strongest complaints about the scale and siting of solar projects. California's desert parks — Joshua Tree, Death Valley and the Mojave National Preserve — have the most acreage affected by the development.

The Department of Defense also has raised questions. The Pentagon has the China Lake weapons testing facility, Ft. Irwin, Edwards Air Force Base, Twentynine Palms Marine base and the Chocolate Mountain Naval Aerial Gunnery Range.

The military, whose pilots often trace the contours of the desert floor from 200 feet, is concerned about maneuvering around 460-foot solar towers. The Marines have asked the companies for more information about the glare produced by a vast carpet of solar reflectors.

The Federal Aviation Administration has voiced concerns about the heat plume rising from the Ivanpah towers and about the installation's possible radar interference.

Schramm, who retired last December as superintendent at Mojave National Preserve, found himself at odds with the Interior Department, his own parent agency, in defending the 900 species of plants and 300-plus species of animals in the preserve, especially the desert tortoise.

"For the life of the projects, that habitat is lost to the desert tortoise. It's 'Pack your bags, you're leaving,'" he said. "So while you are trying to recover the species, you take away the habitat?"

Schramm sees the vast desert, with a tenuous constituency that cares about it, as a pawn in a high-stakes financial gambit played out by multinational companies.

"Some of these projects are going to fail," he said. "These are big businesses chasing federal dollars — they don't care if they fail. They got what they want."

Should that happen, he said, the species that rely on the arid and austere Mojave will be out of luck.

"If these companies pull out and attempt to restore the land — if they can — it will take a long time," he said.
"It will be 100 years. It might be 200 years. That's how long it would take to restore the desert."