

Energy/Environment

## Desert Storm

*Solar, wind and geothermal energy are the future. But environmentalists are fighting over whether miles of new power lines are needed.*

By John Buntin | July 2009

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From the front yard of her house in Redlands, California, Sherli Leonard looks out over the foothills of nearby mountains to San Timoteo Canyon.

In this part of San Bernardino County, an area that saw explosive growth earlier this decade, the canyon is a rarity—an open space that is unprotected by local, state or federal preservation laws yet largely untouched by developers. Leonard, who heads an environmental group called the Redlands Conservancy, wants to keep it that way. She envisions the canyon as the central artery of a 15-mile greenway that would serve as an important wildlife corridor and tie together Southern California's inland hiking trails.

But another, very different kind of greenway is in the works. Earlier this year, reports appeared in the local press suggesting that San Timoteo Canyon was a potential route for "Green Path North," a \$2 billion transmission line intended to bring geothermal and solar energy from remote desert areas near the Salton Sea to the 5 million customers served by the Los Angeles Department of Water and Power. The news infuriated Leonard, and sent ripples of anger across San Bernardino County. Locals already feel

that Los Angeles views their region as a dumping ground for its warehouses, gangs and smog. Now, L.A. was going to defile some of the area's last remaining natural scenery with colossal steel towers and ugly high-voltage power lines. The Redlands Conservancy vowed to stop it.

The story of Green Path North may sound like a classic tale of an energy-hungry utility versus scrappy environmentalists. But it's more complicated than that. Some environmentalists, concerned mostly with the new menace of global warming, support the quest for more transmission lines—anything to develop new sources of clean energy. They believe Green Path North is essential to DWP's plans to wean metro L.A. off the coal-fired power plants that currently provide almost half of its electricity. And they think it's a necessary step toward compliance with California's mandate for utilities to derive 20 percent of their energy from renewables by next year and 33 percent by 2020. National groups such as the Sierra Club and the Natural Resources

Defense Council largely agree that, in the words of the Sierra Club's Bill Corcoran, "it is inescapable that some amount of remote renewable energy will have to be developed—rapidly."

Leonard and other opponents of expanding the electric grid think the conversion to renewables can be made with a lighter touch. They'd like to see more emphasis on what's called "distributed generation." In a place with abundant sunshine, that means solar panels sitting on rooftops. Ideally, they'd be generating so much power that homeowners and businesses could use what they need and sell the excess back onto the electric grid. That would make huge investments in desert generation and unsightly new power lines unnecessary. "If L.A.'s appetite for electricity continues to grow," says San Bernardino Supervisor Neil Derry, "they should be responsible for carrying the burden of some of their electric power generation."

What's unfolding in Southern California is a fundamental debate about what the "green grid" should look like—or whether it should be built at all. Similar discussions are unfolding all across the country, especially in the 26 states that have set ambitious goals for increasing the share of energy that comes from renewable sources. So far, there has been more argument than compromise. L.A.'s DWP is in its third year of trying to find a politically acceptable route for Green Path North. San Diego Gas & Electric has run into similar opposition to its proposed "Sunrise Powerlink" line, which would connect proposed desert solar installations with its customers on the Pacific Coast.

Gridlock is taking on interstate dimensions, as well. In 2007, Arizona's public utility commission rejected Southern California Edison's plans to upgrade existing transmission lines leading to the massive Palo Verde nuclear power plant near Phoenix. Arizona, it seems, was in no mood to share its power with California. Meanwhile, ITC Holdings, the country's biggest new independent power transmission firm, faces the prospect of navigating a maze of federal, regional and state regulators as it seeks approval for the "Green Power Express"—3,000 miles of super high-voltage transmission lines to carry wind power energy from the high plains to the industrial heartland.

As siting battles drag on, Washington is growing impatient. Several years ago, Congress gave the Federal Energy Regulatory Commission power to preempt state regulators in siting power lines of "national interest." That provision was for all intents and purposes struck down by a federal appeals court earlier this year. Now, U.S. Senate Majority Leader Harry Reid is pushing a bill that would set out "renewable energy zones" around the country and give states a one-year deadline to site new transmission. Under the legislation, if the states don't do the job, FERC will.

For its part, California has taken steps to speed up the siting process. Last year, Governor Arnold Schwarzenegger convened a working group of stakeholders from state agencies, public and private utilities, environmental groups and two federal agencies. It hasn't worked. That leaves the Los Angeles DWP, the nation's largest municipally owned utility, in a tough position—struggling to balance the region's growing energy needs with the demands of a green movement that is in conflict with itself. DWP General Manager David Nahai argues that new power lines are a regrettable but unavoidable consequence of the shift toward renewable energy. In the old days, notes Nahai, utilities had more flexibility about where to site coal- and natural gas-fired plants because "you can take the fuel to the plant." But with the

For more than a century, the dominant ethos of environmentalism has been one of conservation. That's changing. Climate change is today's hot topic, and the leaders of national environmental organizations are more likely to be seen working the boardrooms of utility companies than shielding trees from bulldozers. As the states—and more recently, the Obama administration—came to embrace renewable energy, a new kind of environmentalism has begun to appear, one that sometimes seems to have more in common with the massive WPA projects of the 1930s than with Henry David Thoreau's turn toward Walden. The new green movement promises to generate millions of "green collar" jobs. And it plans to do that, in large measure, through means that more traditional environmentalists find troublesome: building and more building. Public lands in the Mojave Desert are experiencing what some have called a "sun rush" as start-up energy companies scramble to erect massive solar installations, while wind farms are sprouting up across the Great Plains. Thousands of miles of new power lines will be needed to connect them to metro areas where most of the electricity customers are.

Windswept places such as North Dakota, Iowa and Oklahoma, and the sun-kissed Southwest, are eager to help meet these goals—especially the part about the jobs. Last year, a U.S. Department of Energy-sponsored report showed major new transmission lines running from the Great Plains through the Midwest to the East Coast population centers, as well as lines running south into Alabama, Tennessee and Georgia. Although these ideas remain conceptual, the federal government is putting up real money to make it happen. The stimulus law provided \$6 billion in federal seed money to support investments in renewable energy projects and new transmission lines, investments that will support about \$60 billion in new construction projects.

As a municipally owned utility, the Los Angeles Department of Water and Power isn't eligible for federal stimulus dollars. Nonetheless, DWP has embraced the challenge of building a greener grid. It has to. A California law passed last year prohibits utilities from importing coal-generated power from out of state once current contracts expire. For a city that relies on coal plants in Arizona, Nevada and Utah for 44 percent of its power, that poses a major problem. Los Angeles faces the prospect of having a major power plant go offline in 2019. Most likely, it will lose another coal-fired plant in 2027.

Nahai and his boss, Los Angeles Mayor Antonio Villaraigosa, have responded to this challenge by embracing one of the nation's most ambitious renewable energy goals—35 percent by 2020. To get there, they've proposed installing 1.3 gigawatts of solar power. While much of that would be generated locally, both Nahai and the Sierra Club's Corcoran say development in the Los Angeles Basin won't be enough. They believe there's no way to ease L.A.'s dependence on coal without developing new energy resources and connecting them to the grid. "The reality of the situation is that Los Angeles has made commitments for local generation and energy efficiency that are models for municipal governments," Corcoran says. "But even if they are fully realized, they are inadequate to meet L.A.'s power needs."

Environmentalists of Sherli Leonard's ilk and a number of policy makers disagree. Instead of building massive new solar installations in the desert and power lines to support them, they'd like to see an even bigger commitment to distributed generation. And for proof of how it could work, they point to an unlikely exemplar of this approach—the retirement community of Palm Desert.

**P**alm Desert (a.k.a., "the World's Golf Capital") is not a community of faddish left-wing enthusiasms. Its residents are affluent, older and generally conservative. Pictures of the U.S.S. Ronald Reagan aircraft carrier adorn its civic center complex. High walls surround many of its 30-plus golf courses. In October, snowbirds from Canada and other points north swell the population to approximately 80,000. By June, when temperatures rise into the triple-digits, they leave. Year-round residents crank up their air conditioners. On average, residents of Palm Desert use 150 percent of the energy of people living in similar-sized homes in other parts of Southern California.

In 2005, City Manager Carlos Ortega attended an international energy conference and came home convinced that Palm Desert could do better. He set a bold goal of reducing the city's overall energy consumption by 30 percent in five years' time. Responsibility for accomplishing this fell to Pat Conlon, the director of the city's planning department.

Conlon developed a plan with two components. The first was a focus on energy efficiency. In early 2007, the city began to offer residents free "energy surveys." (The city's marketing team vetoed the more common term "energy audit" so as not to turn customers away.) Residents who request an energy survey get a wide range of goodies, including compact fluorescent light bulbs, LED night lights, low-flow shower heads, and HVAC tune-ups, all installed or completed for free on the spot. Then, the survey generates a set of further recommendations for how to save energy around the home.

Residents aren't obliged to act on the recommendations. But generous incentives offered by the state public utility commission make converting to energy-efficient appliances compelling. When Mayor Robert Spiegel requested an energy survey for his house, he was surprised to learn that his most inefficient appliance was his pool pump. Surveyors recommended a new one, and offered to install it for \$735—almost \$500 less than the list price. Energy savings from the new pump repaid the remainder of the cost in 10 months. Not surprisingly, the program has proven popular. According to Spiegel, surveyors have visited 6,000 of the roughly 23,000 homes in Palm Desert.

Conlon's second strategy relied on peer pressure. The city and Southern California Edison teamed up to create customized energy consumption reports for ratepayers. The reports come with the bimonthly electric bill, and compare power usage with residents of similar-sized homes within a one-mile radius. The hope is that the biggest power users, whether through shame or a sense of responsibility, will cut back on their consumption when they see themselves compared so directly with their neighbors.

Last year, the California legislature put another tool in Palm Desert's hands. Assembly Bill 811 allows local governments to create energy-efficiency loan programs, from which residents may borrow money for investments in rooftop solar systems, high-efficiency windows, new air conditioning units or other upgrades at long-term, reasonable rates. Homeowners pay back the loans and interest via an assessment on their property taxes. Homeowners who decide to sell before the loan is paid off can choose to either pay it or transfer the loan to the next owner as part of the sale.

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At first, Palm Desert set aside \$2.5 million for its loan program. The funds were gone in three weeks. A \$5 million second round of financing disappeared in 5 weeks. Now, the city is preparing another round of \$5 million. Many purchases will probably go to new HVAC systems and pool pumps. But what most captures the imaginations of local residents—and environmentalists—is rooftop solar. So far, Palm Desert's program has subsidized the installation of about 85 solar rooftop systems, which are generating a total of about 725 kilowatts. That's not very much. Nonetheless, Conlon says it's already led to a surge in green jobs. When the program began, there were three companies in the Coachella Valley that installed solar systems on rooftops. Today, he says, there are 36.

"Solar systems make sense in Palm Desert," Conlon says, noting that the sun shines in his town 350 days a year. But solar power is much more expensive than either geothermal or wind power. Also, land is expensive in urban areas. That makes it hard for small urban solar installations to compete with the vast ones DWP envisions for the desert, where land is cheap and solar panels can be spread over thousands of acres. So even in a city where the idea of distributed generation is getting a decent tryout, the need to expand the electric grid seems simultaneously inevitable and repugnant. "If we are going to harvest thermal from the Salton Sea, we need new transmission lines, period," says Conlon. At the same time, acknowledges Mayor Spiegel, if a utility tried to run power lines through Palm Desert, "we'd fight it."

The debate over the need for—and the siting of—transmission lines will clearly remain a contentious one. However, environmentalists and government officials who disagree on those issues do seem to have come to a consensus about something else: the need for some kind of a roadmap.

"The grid is often compared to the Interstate Highway System," says Gary Brown, who chairs the New York State Public Service Commission. "My guess is that they had a map in place before they built I-85." But when it comes to building the green grid, no map exists. Instead, utilities continue to plot new lines in an ad hoc fashion, bringing forth uncoordinated proposals for state regulators to consider. The NRDC's Johanna Wald describes the approach as "put one finger at the beginning, put another finger at the end, then connect"—and mitigate the political fallout afterwards. But when it comes to siting big transmission lines through densely populated areas, that approach no longer works.

Brown recalls a recent commission meeting to consider a line that would have relieved a transmission bottleneck between Upstate New York and more congested areas downstate. "Fifteen hundred people came out to speak," he says. "Five spoke in favor or it. That gives you a sense of the tenor of these discussions." That line proposal died. That's not always a bad thing, says Brown, who heads a working group on electricity for NARUC, the national association of state utility regulators. State governments have successfully sited hundreds of lines, he says, and "there are usually good reasons" for the ones that are turned down.

Nevertheless, Brown believes that it is time for the federal government to step forward with a general plan. That could help guide the discussion between utilities, regulators, competing groups of environmentalists and locals who simply don't want transmission towers in their back yard. What the states wouldn't welcome is federal preemption. "Trying to envision a uniform federal policy that will make it easier to site transmission is frankly a bit naive," says Brown. If the feds took the job of siting long-distance power lines away from the states, opponents of new transmission wouldn't go away. They'd simply have a new foe to fight.

Many people in Southern California are holding out hope for a local solution to the controversy over Green Path North. In recent months, L.A.'s DWP has tried winning over opponents by trimming the scale of the proposed line. Rather than building one super-sized line, the plan now is to use two smaller side-by-side lines that would cut a somewhat less-intrusive profile. DWP also has expressed a desire to secure transmission rights to an existing Southern California Edison power line that follows the I-10 freeway leading away from Los Angeles and into the desert.

"That would be the best choice," DWP's Nahai admits. "It would be the least disruptive and the least expensive." However, Nahai cautions that nothing is set in stone. "If we cannot bridge the obstacles to arrive at that place, then we have no choice but to create the transmission lines," he says. Nahai is quick to point out that it's not just L.A. that needs the power but Pasadena, Burbank and Glendale, too. "We are talking about 5 million people," he says.

As for Sherli Leonard, she is cautiously optimistic that an alternative route for Green Path North could spare the beloved canyon where she has hiked and biked for 20 years. "We appreciate the idea of using the sun as energy," she says. But "if we lose any more land, the conservation value will be so diminished, it probably won't be worth the trouble."

*Correction: The print version of this article, as well as the original version posted online, reported that ITC Holdings was "struggling to get state approval" for its Green Power Express project. ITC has not formally begun the process of filing state siting applications for this project.*

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