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## THE WALL STREET JOURNAL.

**SE** Energy (A Special Report)  
**HD** **You Can't Get There From Here: The problem: Much solar and wind power are generated far from the people who use it**

**BY** By Jonathan Shieber  
**WC** 1,490 words  
**PD** 30 June 2008  
**SN** The Wall Street Journal  
**SC** J  
**NGC** The Wall Street Journal - Print and Online  
**GC** CTGWSJ  
**PG** R9  
**LA** English  
**CY** (Copyright (c) 2008, Dow Jones & Company, Inc.)

**CX** Corrections & Amplifications

Mike Niggli is chief operating officer of San Diego **Gas & Electric** and Southern California **Gas Co.**, subsidiaries of Sempra Energy. An article in Monday's Journal Report on Energy incorrectly identified him as the president of Sempra Energy's Sempra Generation unit, a position he previously held. In addition, Sempra Energy owns one natural-**gas**-fired plant in Mexicali, Mexico. The article incorrectly referred to "plants" in Mexicali and it incorrectly used the corporate designation Inc. after Sempra Energy's name.

(WSJ July 2, 2008)

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**LP** Utilities are moving to harvest more power from renewable-energy sources like the wind and sun. The problem is getting that power to the places that need it.

A series of laws passed in recent years by state legislatures across the country require utilities to generate a certain portion of their power from renewable resources. The standards vary from state to state.

**TD** But the best resources for generating large amounts of wind and solar power are located in remote areas. One California **utility**, for instance, is developing a cluster of wind farms along the Tehachapi mountain range that separates the San Joaquin valley from the Mojave Desert. Across the desert, from California through Arizona and New Mexico, independent power producers are looking to build thousands of megawatts of solar farms that would sit on acres of land.

"There's enough solar potential in the whole southwest of the U.S. to equal the power of all of the oil in Saudi Arabia," says David Hawkins, lead industry-relations representative for the California Independent System Operator, a nonprofit that supervises the distribution of power for the state.

So utilities are embarking on the costly and lengthy process of building or upgrading long-distance transmission lines to get new power to customers in population centers -- and meet an expected rise in demand. New and upgraded lines would facilitate the transmission of power from new remote sources as well as renewable-energy projects that already have been developed. New far-reaching lines also could allow utilities to boost the amount of renewable power available across broader swathes of the country.

"Essentially, you have to get a line out of the supplying regions to the consuming regions," says Mike Niggli, president of Sempra Generation, the development and operational subsidiary of San Diego-based Sempra Energy Inc.

Edison International Inc. has plans for a renewable-energy transmission line that would stretch from the Tehachapi Mountains to the outskirts of Los Angeles. But because of the cost and regulatory oversight involved, it's taking years of planning and development to get the project approved.

The Rosemead, Calif.-based company first made a deal in December 2006 with Alta Windpower Development LLC, a subsidiary of Australian financial-services firm Allco Finance Group, for 1,500 megawatts of wind power generated from sites in the Tehachapi Mountains over a 10-year period.

Then in March 2007, the California Public Utilities Commission approved plans for Southern California Edison, an Edison International subsidiary, to build the first 82-mile segment of a transmission line that would bring more renewable power to California's grid. That segment is expected to be completed in early 2009. But it still needs final approval from the U.S. Forest Service, which oversees some of the land that would be used for new transmission lines and upgrades.

The full \$1.8 billion project, which Southern California Edison has proposed constructing in 11 segments, is slated for completion by 2013 -- the same time the additional 3,000 megawatts of power would be ready.

New and upgraded high-voltage transmission lines will be able to transmit as much as 4,500 megawatts of wind power for northern Los Angeles and eastern Kern counties -- enough to power approximately three million homes.

While states like California look to transport power from new sources, others are planning to install new transmission lines to cope with the massive amount of power coming from existing renewable-energy projects.

In 2005, the Texas Senate directed the state's Public **Utility** Commission to designate what it called Competitive Renewable Energy Zones, which would concentrate the wind-power projects within certain resource-rich areas. The thinking was that once the zones were established, developers could begin planning projects, and transmission and distribution providers would know where to begin planning transmission infrastructure development.

The **Electric** Reliability Council of Texas, which manages the state's **utility** grid, offered up several plans in April to address the bottleneck of power created by all the wind projects producing power in West Texas and the Texas panhandle.

The plans address how to get 6,903 megawatts of existing wind resources moved to load centers, where power is used, while simultaneously adding transmission capacity for the next 6,000 to 18,000 megawatts of power that might be developed in the region.

The council's plans, which range in cost from \$2.95 billion to \$6.38 billion, have been submitted to the commission for approval. The cost would be rolled into ratepayers' monthly bills.

Another factor driving the construction of transmission lines is a push from utilities for greater interconnection between regions to boost the amount of renewable power available across the country.

A loose confederation of Western utilities from Washington State through Southern California -- including Portland General **Electric** Co., Avista Corp., PacifiCorp, PG&E, and British Columbia Transmission Corp. -- are considering building and upgrading transmission lines that would potentially link renewable power generated in Canada through the Western region of the U.S.

"You could think of it as the green highway," says Mr. Hawkins of the California Independent System Operator.

The \$3.2 billion plan is being led by PG&E, which would like to use the line to meet its renewable-portfolio standards. The **utility** has received partial approval from the Federal Energy Regulatory Commission to recover some costs in the form of rate increases. The commission cited in its decision the need to encourage companies to explore new ways of delivering power from renewable resources.

Utilities involved in the project say that given all the players the challenge is daunting. "It's difficult to do really large projects involving multiple utilities because the question of which customers support the line and with how much is very difficult," says David Eskelsen, a spokesman for PacifiCorp.

Environmentalists have problems with some transmission projects, saying utilities are using the popularity of renewable power to get projects approved.

Sempra Energy wants to build a more-than-100-mile transmission line from California's Imperial

Valley region to San Diego, through its San Diego **Gas** and **Electric** subsidiary. The energy firm says the Sunrise Powerlink project, estimated to cost as much as \$1.4 billion, will transmit renewable power from new sources like the solar thermal power plant it has entered into a power-purchasing agreement with.

But the Sierra Club opposes construction of the line, contending it would be used mainly to bring electricity generated at natural **gas**-fired plants that Sempra owns in Mexicali, Mexico.

"It appears to be a bait and switch," says Micah Mitrosky, an organizer for the Sierra Club in San Diego. "They talk about this line as a renewable-energy project. But when you peel away the PR, it is designed to tap into Sempra's liquefied natural-**gas** terminal in Mexico."

Sempra says electricity from its Mexico facilities are being delivered to California using existing transmission lines. It said in public statements earlier this year that it can't meet the California clean-energy mandate without the power line.

The Sierra Club also opposes a project proposed by Sierra Pacific Resources Group, which operates utilities in Nevada. The project combines a new 250-mile transmission line to connect planned and existing wind and solar plants and a new 2,500-megawatt coal-fired power plant. The Sierra Club says new coal generation is unnecessary and the development of solar and wind power meet the needs of most communities.

Sierra Pacific says the project, called the Ely Energy Center, needs to combine renewable- and fossil-fuel plants because it can't pay for the transmission piece with solar and wind power alone.

"This is the catch-22," says Roberto Denis, senior vice president of energy supply for Reno, Nev.-based Sierra Pacific. "Yes, we need the line. But no, we can't justify the line by economics. The way the line becomes economical is by siting this coal project between the two utilities."

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