

CLEAN TECH

'Blowin in the Wind' — the Controversy Over Clean Energy

By Stephen T. Holzer

"The answer, my friend, is blowin' in the wind...." So sang Bob Dylan in the 1960s.

In the current period, the state of California has clearly concluded that the answer to global warming (now often referred to as climate change) is indeed "blowin' in the wind" — or wind power, that is — along with solar power. California's policies, and implementation of those policies, have seen their fair share of controversy.

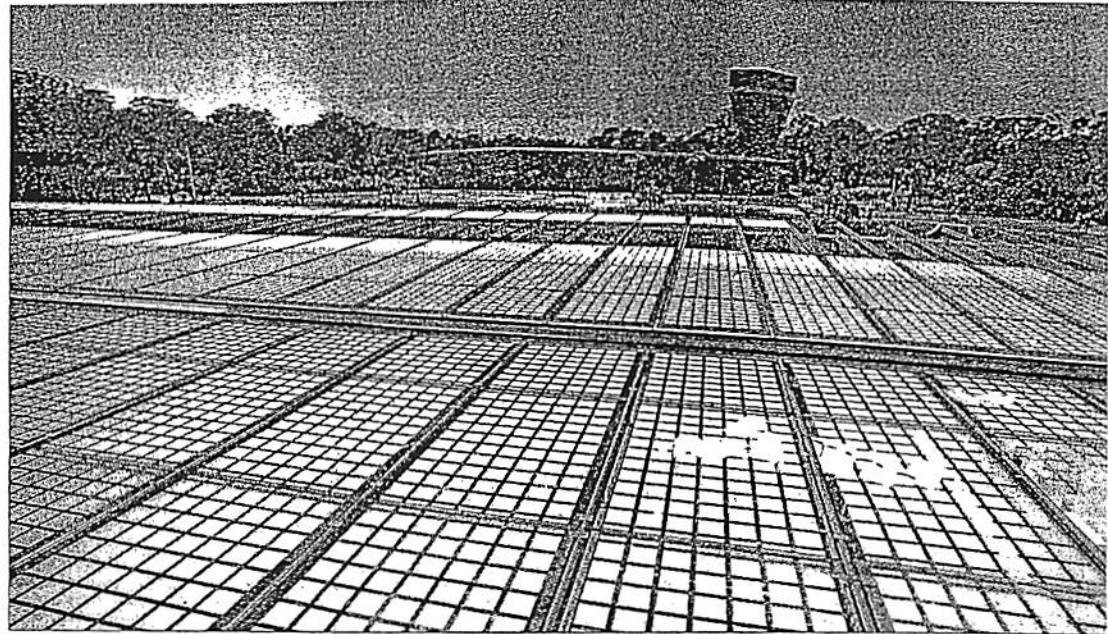
In 1990, California's carbon dioxide emissions totaled approximately 426 metric tons; this amount increased to 475 metric tons by 2000, and is expected to rise to 600 metric tons by 2020 according to the California Solutions for Global Warming Web site. Seeking to deal with carbon dioxide and other greenhouse gas emissions, the state enacted Assembly Bill 32, the Global Warming Solutions Act, in 2006.

AB32 requires that overall sources of carbon dioxide emissions by 2020 be scaled back to 1990 levels through the use of alternative or renewable clean energy sources. Prominent among these sources are wind and solar power.

AB32 is not the first, nor the last attempt by California to promote alternatives to oil and other greenhouse-gas producing energy sources. Back in 1978 for instance, the Legislature and Gov. Jerry Brown put the Solar Rights Act into law. Under this Act, homeowners' associations are restricted in their ability to use covenants, conditions and restrictions to limit the installation of solar panels.

In 2001, Gov. Gray Davis signed AB1207, which prohibited local agencies from adopting ordinances that unreasonably restricted wind-energy systems in non-urban areas until 2005. Last February, the state Senate approved and sent to the Assembly a measure (SBX12) that would require California utilities to have renewable energy sources make up at least 33 percent of the utilities' total power consumption by 2020. Further, the governor's office under Arnold Schwarzenegger set a goal of installing at least 3,000 megawatts of new solar power by 2017 — set forth in the "Climate Change Scoping Plan" in December 2008.

Proponents of measures such as these cite an array of statistics putting California on the right path to a clean and energy-independent future, with positive consequences for the state's economy. For example, the California Air Resources Board concluded that implementation of AB32 will end up actually boosting the economy by \$27 billion. Repower America, another proponent of the bill, cites statistics indicating that the clean-energy sector was responsible for 10,000 busi-



Solar panels on the roof of the California Academy of Sciences in San Francisco.

Associated Press

nesses supporting 125,000 jobs, and that without implementing AB32, electricity could become 33 percent more expensive by 2020 due to increased fossil-fuel prices. This claim was made before the current turmoil in the Middle East caused oil prices to skyrocket.

Of course, proponents of renewable or alternative clean energy sources such as solar and wind power also cite the need for energy independence, free of uncertain supplies of overseas oil and environmental hazards associated with drilling domestically for more oil. Thus, there is a national-security aspect behind the drive for clean energy.

have sickened nearly 106 Ontario residents, causing a variety of health ailments ranging from hypertension to sleeplessness and nosebleeds in children."

Indeed, as a result of this type of complaint, the Ontario Provincial government has backed off of its commitment to wind power, according to Canada's National Post in "Kelly McParland: Ontario Quietly Reverses Field on Wind, Solar Energy." And this month, Massachusetts residents forced at least one wind-turbine project to be abandoned by voicing opposition, according to the Web site Mass Live.

Secondly, many find the wind turbines lacking in

not involve any moving parts that produce noise. Solar panels seem less objectionable to people, aesthetically.

However, even solar power has its critics. Some point out that production of major energy from solar panels requires the panels be dispersed over a wide area. This is a controversial issue in the Mojave Desert region, where environmentalists object to the amount of open desert space that would be lost to a large solar panel array. The Los Angeles Times estimated one project is the size of the city of Inglewood, in "State Solar Power Plans are as Big as All Outdoors," (Dec. 3, 2008).

Environmentalists also worry about the effect of the solar array on wildlife in the area. This last issue came to the fore in the case of a San Luis Obispo County solar project, where critics are concerned about the effect of the project on the San Joaquin kit fox, as noted by a Discovery Company Web site, Treehugger.com. Other critics on Treehugger also point out that solar panels need frequent cleaning to retain their effectiveness; that large solar arrays require a lot of water for cleaning; and that in many places, like California, water is a precious resource in short supply and should not be used for this purpose. If the array is in a remote area, there is also the cost of transporting the water to the array to take into account.

California has obviously made the choice that these criticisms of solar and wind power do not outweigh the expected benefits of such clean sources of energy. The state has decided that the answer is truly "blowin' in the wind" and coming from the sun. Let's hope for all of our sakes that the state has chosen wisely.

Presently in the United States, solar power accounts for less than one percent of energy consumption, and wind power for even less than one percent, according to the government's National Atlas Web site.

Historically, California has firmly embraced the promise of clean, cheap energy such as solar and wind power. However, critics argue that this exuberant embrace is premature and overlooks the substantial difficulties involved in making the promise a reality.

Presently in the United States, solar power accounts for less than one percent of energy consumption, and wind power for even less than one percent, according to the government's National Atlas Web site. Moreover, especially with wind power, there are daunting obstacles to expanding reach.

For one thing, experience has taught that power-generating wind turbines often produce a low-level noise or hum, which is disturbing to residents in surrounding areas. The New York Times stated last October: "Lawsuits and complaints about turbine noise, vibrations and subsequent lost property value have cropped up in Illinois, Texas, Pennsylvania, Wisconsin and Massachusetts, among other states." (See "For Those Near, the Miserable Hum of Clean Energy," Oct. 5, 2010.)

Unsavory experiences are not limited to the United States. The Toronto Star reports that in Canada "Nearly 250 people descended on Queen's Park...to protest the presence of the turbines near residential areas. They claim the turbines cause low-frequency noise and

attractiveness. Perhaps the most famous instance of aesthetic objections came in the case of the affluent community of Hyannisport, home of the Kennedy compound, when well-to-do residents voiced objections to the marring of the ocean views if planned offshore turbines were installed.

Thirdly, there are huge environmental concerns. In 2005, the San Francisco-based Center for Biological Diversity filed suit against the owners of a major California wind farm in the Altamont Pass area of eastern Alameda County, alleging that the blades of the turbines were killing thousands of birds annually. The lawsuit took five years to settle, with the wind-farm owners agreeing to dismantle the turbines and to set up newly-designed turbines in a different location where, presumably, there would be less bird traffic.

Last December, a conservation group and residents in Maryland filed a suit to stop construction of a wind farm on the grounds that the large turbine structures would allegedly hurt the endangered bat population in the region, according to a CBS news affiliate in Baltimore. On the other hand, solar power provokes fewer objections than wind power because the former does



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