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Underperformance Issues Deserve Fresh Examination

Although wind farm underperformance may have been overstated, more work needs to be done to shrink the performance gap.

BY GAIL KALINOSKI

From North America to Europe, researchers and wind industry consultants are studying ways to make wind farms perform better, including more accurate wind assessments and component-design improvements.

They are making progress: At least two industry consulting groups say the 10% underperformance figure that has been widely accepted as the norm may have been overstated. Much of the gap between operating statistics and pre-construction estimates can be explained by availability, grid curtailment and other issues.

GL Garrad Hassan and AWS Truepower have each done extensive research into performance and have also reviewed and revised their own methods for wind farm energy predictions. Improved forecasts will help the industry get financing for future wind projects and better return on current investments. But researchers and investors say owners and operators need to make more information available so that studies can continue.

Clint Johnson, vice president of GL Garrad Hassan's U.S. energy group, tells *NAW* that from data the company has analyzed, "We see actual production, on average, some eight percent below original projections and estimate that of this discrepancy, approximately five percent can be explained by a combination of availability, grid curtailment and suboptimal turbine power-performance issues."

Albany, N.Y.-based AWS Truepower used data from 11 wind projects that had been operating for a combined total of 45 years, according to Eric White, vice president of investor and asset services. By using revised energy-estimation methods to improve accuracy, the firm found those wind farms showed an underperformance gap of about 3.5% rather than

IN THIS ISSUE

10 HATCHET RIDGE

Pattern Energy's 101.2 MW Hatchet Ridge Wind Farm (pictured at left), located in northern California's Shasta County, was the ben-

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Group Targets Global Warming Legislation In California

The California Jobs Initiative claims that A.B.32 will kill jobs and increase energy prices, and the organization has put forth a ballot measure to suspend the landmark legislation.

BY ANGELA BENIWAL

California has been a leader in renewable energy development for years. Some of the very first wind projects developed in the U.S. are located in the state, and it has become an attractive destination for cleantech venture capitalists. However, if a ballot initiative to overturn landmark global warming legislation is approved, California could take a big step backward.

Proposition 23 would suspend A.B.32 until the state's unemploy-

ment rate drops to 5.5% or less for four consecutive quarters. This has only happened three times in the last 40 years, according to the California Employment Development Department. The ballot initiative is backed by an organization called the California Jobs Initiative, which claims that A.B.32 – also known as the Global Warming Solutions Act of 2006 – will raise energy costs and unemployment rates.

The ballot measure requires the

state to abandon implementation of A.B.32, which includes increased renewable energy and cleaner fuel requirements, as well as mandatory emission reporting and fee requirements for major polluters such as power plants and oil refineries, until the suspension is lifted.

The California Air Resources Board (CARB) recently unanimously adopted a 33% by 2020 renewable portfolio standard (RPS). It is not clear what effect suspending A.B.32,

which would reduce greenhouse gas emissions in California to 1990 levels by 2020, would have on the RPS, says CARB spokesperson Stanley Young. But he adds that scrapping A.B.32 could leave the RPS open to litigation.

Opponents of Proposition 23 say it is nothing more than an attempt by out-of-state interests to kill renewable energy development in California, and if it passes, it will hurt the state's growing cleantech sector.

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"There's a mythology that lives on that pretends there is an inherent tension between environmental protection and economic growth," says Chris Busch, policy director at the Center for Resource Solutions, a San Francisco-based nonprofit organization that promotes sustainable energy. "The governor has been a pretty eloquent spokesman in arguing that is a false choice – environment or the economy."

Many say, in fact, that A.B.32 has encouraged investment in California.

"Should Proposition 23 go through, the investment in clean technology by venture capitalists would be put in jeopardy, and California would just take severe steps backward in terms of the cleantech economy that it has worked so hard to create," says Emily Mendell, vice president of strategic affairs at the National Venture Capital Association (NVCA).

Proposition 23 has received major funding from Texas oil companies Valero and Tesoro. Supporters of Proposition 23 argue that A.B.32 will lead to higher energy costs and more unemployment. Bill Day, spokesperson for Valero, says it is not the fear of competition from the renewable energy sector that led the company to support Proposition 23.

"There's nothing about [Proposition 23] that would be in direct competition," he says, adding that Valero owns a wind farm in Texas. "If there is a market for renewable energy, there's going to be jobs created, and we're all for jobs being created. California needs all the jobs that it can get."

A spokesperson for the California Jobs Initiative did not respond to requests for an interview.

A chilling effect

Project developers in the state say that suspending A.B.32 would be detrimental to renewable energy development in California. Pattern Energy, a wind and transmission company based in San Francisco, has just completed a 101.2 MW wind farm in northern California and wants to build projects each year for the next three to five years.

However, if Proposition 23 is approved by voters, the company's project development plans in the state could be put on hold, according to CEO Mike Garland.

tive place to develop renewable energy projects, Garland says.

"You can spend a lot of money developing projects in California that you might not in other jurisdictions because there seems to be a continuing commitment to renewables," he explains. "It would be terrific for our industry to see [Proposition 23] go down in strong defeat. But I do think that, going the other direction – if

it does pass – it will have a chilling effect."

Gary Hardke, president of San Diego-based Cannon Power Group, says that passage of Proposition 23 would send the wrong message to the entire renewable energy industry.

"The message would be that support for renewables and green technology is waning in the state, and I think that would have a negative im-

act on the overall investment that the companies would make in the state," he notes. "It would negatively impact decisions that companies like ours would make – whether or not to pursue projects in the state, given the circumstances, versus going to other states that are much more welcoming of renewable development."

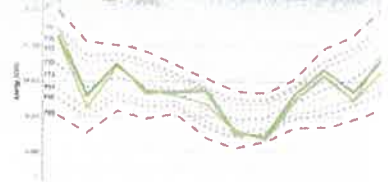
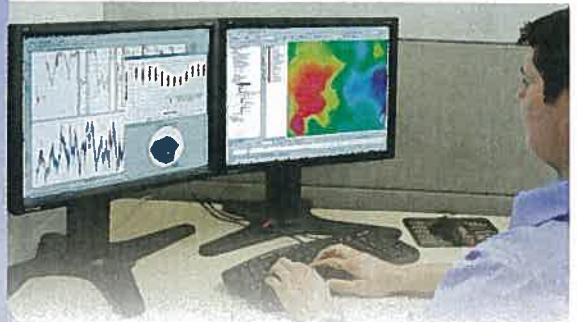
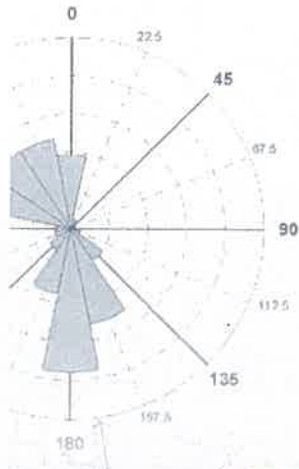
Passage of Proposition 23 could also undercut California's renew-

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Spotlight: California

able electricity certificate market, says Steve Krebs, head of the alternative energy global projects practice at Baker Botts LLP. As a result, developers would have to come up with more equity, and contract terms might be tighter. Market instability would discourage investment.

"Project finance bankers don't like a lot of volatility or uncertainty around those cash streams, so they're pretty concerned about this," he notes.

In addition, suspension of A.B.32 could affect the supply chain, Krebs says.

"People who want to invest in the supply chain really want a clear landing light," he says. "How this relates to project finance is that if you have a robust supply chain with new entrants coming in there, it's going to drive down the cost of the projects."

While supporters of Proposition 23 argue that A.B.32 will kill jobs, opponents say that suspending the global warming initiative would have the same effect.

"One thing about renewable energy projects, and the jobs that go with them – they're pretty mobile,"

'If the wrong message gets sent, we could see a green job flight from California.'

says Hardke. "And California is in competition with many other states, particularly those in the Midwest. If the wrong message gets sent through Prop. 23, we could see something of a green job flight from California."

Suspension of A.B.32 could affect the entire country, according to Steve Maviglio, spokesperson for Stop the Dirty Energy Proposition, a group opposed to the passage of the ballot measure.

"I think that's why we're seeing nearly 90 percent of the money come from out of state," he says. "Dirty energy interests have said that they would want to crush the competition here and prevent any forward movement on Capitol Hill. California is seen as the most progressive state because of our environmental policies and past actions, and I think they would very much like to nip it in the bud right here."

One of the most prominent opponents of Proposition 23 is the co-chair of Stop the Dirty Energy Proposition, George P. Schultz, who served in the Nixon and Reagan administrations.

"Make no mistake: Proposition 23 seeks to derail our future through a process of indefinite postponement of our state's clean energy and clean air standards," Schultz tells *North American Windpower* via e-mail. "A future for California based on clean power technologies is both an economic and environmental necessity. Those who wish to repeal our state's clean energy laws through postponement to some fictitious future are running up the white flag of surrender to a polluted environment."

Economic gains

Studies have shown that A.B.32 will not raise energy prices as drastically as supporters of Proposition 23

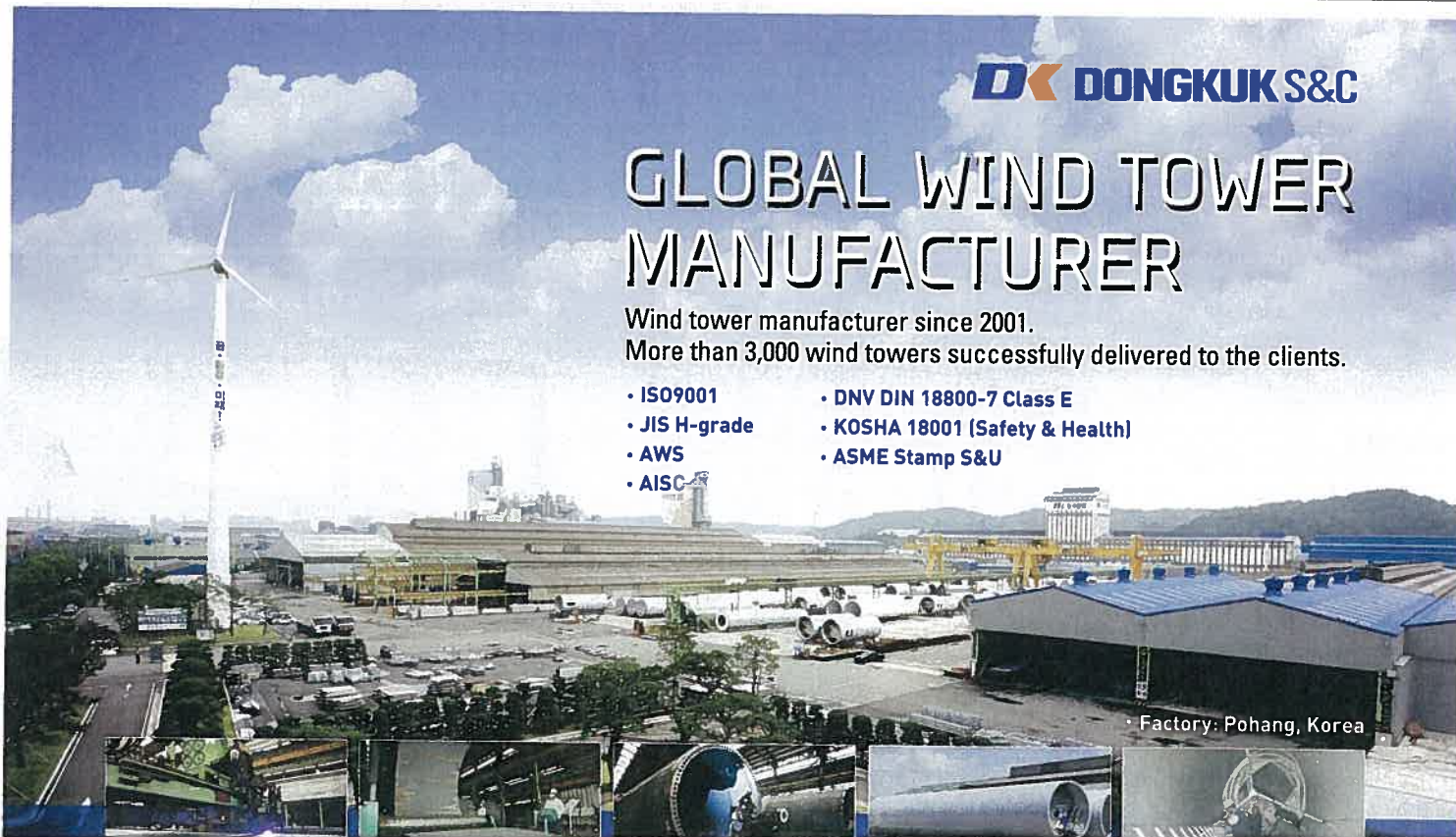
say it will. The Union of Concerned Scientists commissioned the Brattle Group to estimate the legislation's likely effect on energy prices in the state and the impact to small businesses from 2010 to 2020. The analysis shows that there would be small increases in natural gas, electricity and fuel.

According to the Brattle Group analysis, the average small business spends about 1.4% of its revenues on energy. This would increase to 1.7% in 2020 if A.B.32 is implemented.

A recent decision by the California Public Utilities Commission (CPUC) to vote to oppose Proposition 23 cited the threat to the state's emerging clean energy sector as a factor. The commission noted that suspending A.B.32 would impede the growing cleantech sector and stunt job growth.

"In four short years, A.B.32 has already had a positive impact on investment and job growth in California," said CPUC President Michael R. Peevey during a recent commission meeting. "Since A.B.32 became law, clean energy investment has tripled."

According to the NVCA, approxi-



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Spotlight: California

mately \$1.6 billion was invested by venture capitalists in the state's cleantech sector during the first half of this year.

"We were very supportive of A.B.32 because it pushes forward innovation within the clean technology sector, and many venture capitalists have put significant time and money into clean technologies and clean technology companies in the state because of the environment created by A.B.32," notes Mendell.

Valero's Day estimates that the company has donated approximately \$4 million to the California Jobs Initiative campaign and says that the company's only interest is in saving jobs in California.

"Valero has a stake in the California economy," he says. "Right now, the California economy is in serious trouble, and this would be the wrong time to implement a very costly and damaging measure like A.B. 32, when unemployment is already very high and costs are very high. Consumers can't really take another shot."

Day also takes issue with those who say companies such as Valero

*Gov. Schwarzenegger, as is his successor,
is against the ballot measure.*

that support Proposition 23 are outsiders with no stake in California. The company has two refineries and 83 retail outlets, and employs 1,600 people in the state, he says.

"We're a big part of California's economy," he notes. "We're a major employer in California. We obviously have a stake in California, more so, I would say, than some of the people that are against Proposition 23."

The organizations and individuals who oppose Proposition 23 are numerous and varied. Maviglio says his organization has lined up more than 600 endorsements from businesses, state and local government officials, the health care industry and more. Utilities, including Pacific Gas & Electric Co. and Sempra Energy, are also against the measure.

Gov. Arnold Schwarzenegger, R-Calif., has been outspoken in his opposition to Proposition 23.

"Prop. 23 is a job killer that will crush California's fast-growing clean energy economy and result in more pollution," the governor stated during a recent meeting with Latino business groups and organizations who gathered to denounce the ballot initiative. "We must send a strong message to the greedy Texas oil companies by voting No on 23."

Gubernatorial candidates Jerry Brown and Meg Whitman, one of whom will replace Schwarzenegger, have also come out against the ballot measure. The residents of California also seem to dislike Proposition 23. Opponents of Proposition 23 have a 45% to 34% lead over supporters, according to a Field Poll released on Sept. 26.

Hardke hopes that the state's residents understand the connection between renewable energy development and job creation, adding that it

would be a "shame" if Proposition 23 were approved.

"We're so well poised and so well positioned to be not just a leader in the United States, but a worldwide leader in the industry, and that's really what's hanging in the balance right now," he says.

California has always been progressive in terms of innovation, says Mendell.

"We've always applauded California for its forward thinking in promoting growth industries," she explains. "They did it with the Internet, they did it with semiconductors, they did it with biotechnology, and the economy has benefited tremendously. The next frontier is cleantech."

Schultz says supporters of Proposition 23 are not looking ahead to the future.

"We do not need this defeatist initiative, with its sense of pessimism and its can't-do attitude," he states. "We need Ronald Reagan's spirit of determination laced with optimism. As he used to say, 'America's best days are ahead.' And so are California's." **SVP**



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