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All That's Missing Are the Sunglasses; Manzana Wind Farm Is All California

A new wind farm under construction now will provide clean energy to help fill the state's massive needs, and help clear the air in the Golden State.

Located in the wind-rich Tehachapi area near the town of Rosamond in Kern County, the Manzana Wind Power Project will provide up to 189 MW of clean, renewable energy from its 126 turbines. That represents a reduction in greenhouse gas emissions comparable to removing more than 21,500 cars off of California's roads for one year.

"The Manzana Project is going to provide California with clean, cost-competitive, renewable energy while putting Californians to work," said Martin Mugica, executive vice president of Iberdrola Renewables.

During construction, Manzana is creating roughly 290 construction jobs and used local companies to provide concrete pumping, surveying and substation construction. Twelve Iberdrola Renewables permanent operations and maintenance personnel — with approximately another eight to nine contractors during the warranty period — will staff the site.

On the manufacturing side, 90 of the GE turbine "nacelles" used for the project — those Winnebago-sized houses for gearboxes, drive trains and brake assemblies on top of the tower — were manufactured less than an hour's drive from the Manzana site at GE's Tehachapi factory.

Manzana will support the local economy with property tax payments expected to be \$64 million over the life of the project. The property taxes will support schools, public health, fire, library and other necessary services in Kern County.

And the power will serve Californians from north to south, with power going to high-tech Santa Clara's Silicon Valley Power to San Diego Gas & Electric.

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(Manzana, CA Windfarm ... continued)

Local Construction Companies:

- Conco Pumping, Fontana – Concrete pumping
- System 3 Inc., Carmichael – Tower wiring & grounding
- RMR Equipment Rental, Castaic – Water trucks
- CSI Contractors Inc., Bakersfield – O&M building
- Soils Engineering, Inc., Bakersfield – Survey services
- Earth Systems, Palmdale – Inspection and materials testing
- PAR Electrical Contractors, Fontana – Gen-tie line and 220kV substation construction
- Rosendin Electric Inc., San Jose – 34.5kV Collector systems
- Granite Construction, Lancaster – Road improvements and aggregate supply
- MCM Construction, North Highlands – Aqueduct bridges

Other California parts, materials and equipment providers:

- General Electric, Carson – Down tower assemblies
- Bragg Crane Service, Mojave – Off-site storage crane service
- Pacific Coast Steel, San Bernardino – Rebar fabrication
- Holliday Readymix, Mojave – Concrete supply



Military Veterans Bring Job Skills, Leadership to Iberdrola Renewables



Managing a nationwide fleet of wind farms takes precision, a keen awareness of safety and teamwork skills. Those happen to also be the exact traits that U.S. military personnel exemplify, so it's no surprise that Iberdrola Renewables gravitates toward hiring experienced veterans into its workforce whenever possible.

In the past few years, the company has found great success in helping military veterans transition from active duty into positions that keep its network of more than 3,000 wind turbines humming.

"We actively recruit veterans for open jobs in the company," said Melissa Erickson, a recruiter in Iberdrola Renewables' Human Resources department. "Veterans tend to have a 'safety-first' mind-set along with a spirit of teamwork, transparency, challenge and accountability that is central to the Iberdrola Renewables culture."

Currently, Iberdrola Renewables employs 50 military veterans in its Operations Division who account for roughly 16 percent of the group's workforce. Included in those figures are three of its top four regional directors and eight out of the 14 full-time staffers in the highly sophisticated National Control Center (NCC).

"The wind power industry is relatively young and attracts people who like to be engaged in innovation," said John Ward, southwest regional director of operations and maintenance who joined the company in 2008 after more than 23 years in the Navy serving in posts from San Diego to Baghdad. "Veterans are skilled at examining challenges from varied and fresh perspectives and at problem solving, so working in wind power is a great opportunity for people leaving the military." (continued, pg. 3)

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Five Questions with Blaine Sundwall, Generation Dispatch

From lightning strikes to power curtailments, Blaine Sundwall knows everything that happens at Iberdrola Renewables' wind



farms across the country. As generation dispatch manager in the National Control Center (NCC), he constantly monitors ever-changing events to keep the power flowing and his field personnel safe. We recently caught up with Blaine, a Navy veteran, to find out more about his job and the role of generation dispatch.

LN: We're headed into thunderstorm season. What does your team do when lightning strikes near turbines?

Sundwall: Lightning is a serious issue. Wind turbines are invariably the tallest objects around in a rural community. We utilize a nationwide lightning detection system to warn technicians about nearby strikes so that they can cease work at the turbines. This ensures their safety.

LN: How do you and your team handle orders to scale back or curtail wind generation during high spring runoffs in the hydro systems?

Sundwall: First, spring runoff is unique to the Pacific Northwest, and in other regions of the country curtailments are handled in a very different manner. Within the Northwest, Iberdrola Renewables runs a unique program called Customer Supplied Generation Imbalance. This program, which was developed in concert with the Bonneville Power Administration (BPA),

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(Five Questions ... continued)

allows us to curtail the absolute minimum amount of wind energy possible. It also allows us to operate our entire 1,400 MWs of installed capacity as a single plant. Iberdrola Renewables is the only independent power producer in the nation that operates a wind program like this.

LN: What's one thing that landowners would be surprised to learn about your job?

Sundwall: They would be surprised at the complexity of what we do. The U.S. grid is very Balkanized. Each of the many regions is operated differently from the other regions. My team needs to be experts in all areas of the country. They may also be surprised to find out that we interact with other energy sources, like our combined-cycle natural gas-fired plant, simple-cycle natural gas-fired generation, solar, hydro, and even biomass.

LN: What's a typical day like for you?

Sundwall: I begin my day at 6 a.m. to check in with the off-going shift before they leave at 6:30. I look over system conditions then proceed with the day, which includes all matters of the business. I interact with a wide range of groups including field services, trading, and even the legal department.

LN: What did you do before you joined Iberdrola Renewables that helped prepare you for your job in wind operations?

Sundwall: I worked in a number of different areas of power generation, including nuclear and thermal. 🌱



(Military Veterans ... continued)

Employing a large number of military veterans is a win-win for everyone. Iberdrola Renewables gains valuable employees who know how to put the team ahead of individual needs, and veterans have a familiarity with the culture and their fellow workers. Because of this unique environment, Ward said the transition from a commander in the Navy to Iberdrola Renewables was a relatively easy one for him.

"There's a certain ease in working with a group of people who know how you do business," said Ward, who spent 10 years of his naval career as an engineer. "You speak a common language and everyone is motivated by accomplishment. Iberdrola Renewables views people much the same way as the military. People are the primary asset. You try to put good, solid, talented people in the right positions and then provide them the tools, training, guidance, support and latitude required to succeed. The military puts a great deal of emphasis on that philosophy, as does our company. That's very gratifying."

NCC generation dispatcher Paul Rummell puts to use the skills he gained as a U.S. Air Force missile systems technician for the 90th Strategic Missile Wing, F.E. Warren AFB, Cheyenne, Wyoming; and a senior maintenance team chief, LGM-30G Minuteman III ICBM, as he keeps watch over more than 3,000 wind turbines nationwide.

"In our group, there's a command response necessary, and you must understand procedures and follow protocols to the letter," he said. "Having that military mind-set really helps. We need to be procedural to the letter because we deal with highly critical systems. The intensity of the work means it's good to have a focused demeanor under stress. My military training helped me with that skill."

Rummell's co-worker, Murl Yoder, spent 24 years in the U.S. Navy where he drove hovercraft vehicles and worked in power plant engineering positions on some of the world's most sophisticated ships. He says his electrical training is a natural fit for his wind power position. "I've worked in a lot of control rooms in my career and understand electricity and power generation," he said. "On-the-job military training really prepared me for my current job. But more than anything, you have to have a lot of situational awareness and see the big picture. I was ready to do that the minute I started working here." 🌱



NCC dispatcher
Paul Rummell

PTC Expiration Threatens U.S. Manufacturing Jobs

The wind power industry is facing a crossroads: with the threat of the Production Tax Credit (PTC) for wind expiring at the end of this year, wind project developers are hesitant to plan future U.S. projects. Turbine and component part manufacturers, as a result, have seen a marked decrease in orders and are preparing for the worst. At stake is a potential loss of 37,000 American jobs if the PTC is not renewed, according to a recent study.

The report, completed by Navigant, finds that if Congress allows the PTC for wind to expire, one-third of all American wind manufacturing jobs will be lost, while private investment in the industry would drop by nearly two-thirds. Meanwhile, extending the PTC will create 17,000 American jobs, Navigant finds.

"American manufacturing jobs are coming back, with tens of thousands of new jobs from wind power," said Denise Bode, CEO of the American Wind Energy Association (AWEA). "But these jobs could vanish if Congress allows the Production Tax Credit to expire, in effect enacting a targeted tax increase, and sending our jobs to foreign countries. Congress must act now to keep this American manufacturing success story going." (continued, pg. 4)

Questions? Have a story to tell?

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Follow Us on Twitter!

Iberdrola Renewables launched a new Twitter account this spring where you can find news and information from the company on wind power trends, activities and new facilities. Follow @IberdrolaRen on Twitter for more details.

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With the support of a stable PTC, wind energy is powering one of America's fastest growing manufacturing sectors. Over the last six years, U.S. domestic production of wind turbine components has grown 12-fold to more than 400 facilities in 43 states, shifting manufacturing jobs from overseas back to the U.S.

The Navigant study found that an extension of the PTC would add wind energy manufacturing jobs across the country. States that would see significant job and private investment gains from a PTC extension include Colorado, Texas, Iowa, Illinois, Pennsylvania, California, Oregon, North Dakota and Ohio.

With their businesses and jobs at stake, manufacturers are bracing themselves for a major impact if the PTC is not renewed. "We have made a significant investment during the last three years creating several hundred jobs for the state of Illinois to support the wind industry domestically," said Terry R. Royer, CEO of Winergy Drive Systems Corporation. "With the uncertainty of the PTC extension, we are seeing the hesitation of our customers to make continued commitments for orders in late 2012 and 2013. An immediate extension is needed to support the investment we have made in our operations and secure the jobs that have been created."

In his testimony to the U.S. Senate Finance Committee this past March, John Purcell, vice president of wind energy for Leeco Steel, which delivers steel plates and fabricated plate products into the wind industry, said his company will be severely impacted by the expiration of the PTC.

"The PTC has helped us to expand our company in the wind industry and into new markets, and has helped us weather the recent economic downturn," he said. "With the uncertainty of an extension of the PTC, many of Leeco's expansion plans are at risk. There have been high-level discussions to increase the amount of steel plate capacity for the wind business in the coming few years. However, those discussions have now gone silent, as there needs to be business case certainty to move forward with such huge capital investments."

Iberdrola Renewables encourages you to take action and support extending the PTC in 2012. Contact your U.S. Representative and ask for their support for HR 3307. Find your representative's phone number and email address at www.house.gov or use this AWEA directory tool: <http://capwiz.com/windenergy/moaa/dbq/officials>.



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