

White Creek Wind Project

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White Creek and the renewable revolution

Bob Young, Construction and Project Manager, Lotus Construction Management at White Creek Wind Project, explains how wind power is set to revitalize the energy market in Washington State

In windy Roosevelt, Washington, population 79, traditional hydropower isn't the only solution to the town's energy requirements. The White Creek Wind Project is giving residents an up-close view of how green energy is made. And all the wind power providers need is wind –and some helpful tax credits.

Wind in a Water World

In 2006, Washington state government passed a law that called for public utilities with 25,000 customers or more to start meeting renewable energy standards by 2012. The law mandates that utilities draw energy from renewable sources for at least three percent of the power sources in 2012, nine percent in 2016 and 15 percent by 2020.

For public utilities in places like Klickitat County – the sparsely populated home of Roosevelt in the treeless Eastern half of the Evergreen State – this shouldn't have been a problem. Klickitat County sits comfortably on the edge of the Columbia River, home to 14 hydroelectric dams and the largest power-producing river in the United States.

However, the 2006 legislation stipulated that all that renewable energy must come from sources other than hydroelectric power, so public utilities started looking to wind power to meet their growing demands.

The result- A public-private sector partnership called White Creek Wind I, LLC --an entity formed by four public utilities (Cowlitz PUD, Klickitat PUD, Lakeview Light and Power and Tanner Electric Cooperative), with Cowlitz holding the largest share at 46 percent). On completion, ownership of the wind farm will be transferred to private investors from Prudential Capital Group and Lehman Brothers.

Wind Winning Hearts

When fully functional, the White Creek project will feature eighty-nine 2.3 Megawatt MK II Model 2300 wind turbines from Siemens Power Generation. The turbines measure nearly a football field

in diameter, and are perched in 12 rows atop 80 meter-tall towers. Spanning 9,500 acres, the site is on grassland that's also used for wheat production.

By the end of 2007, White Creek is expected to produce around 205 megawatts in the region, or roughly six percent of the county's electricity. It will be enough to power 38, 000 homes, and that's what the developers say is what makes this particular project unique.

"It's the first and the largest wind farm that is providing power to public utilities, nationally speaking," says Bob Young, Construction and Project Manager LotusCM at White Creek.

The electricity that White Creek Wind produces will plug straight into the Pacific Northwest's Bonneville Power Administration power grid.

The White Creek project has been free of the controversy that has plagued wind power initiatives in New Hampshire and Massachusetts. In fact, the White Creek project has infused the local economy by improving roads, boosting the local economy through sales, and creating employment.

Cheap Power

"You've got no fuel costs," explains Young. "The fuel is in the wind."

Compared to other forms of energy production, wind energy is among the most inexpensive – despite the capital costs associated with the initial deployment, says Young.

"It improves after capital payment," Young says. "But the operating costs are really small."

According to the American Wind Energy Association, wind plants cost nearly \$1,000 per kilowatt of installed capacity on average. At best, wind turbines can produce electricity for less than five cents per kilowatt hour – a considerable drop from 20 years ago, but on par with new coal-fired plants and nearly 50 percent more than hydroelectric plants.

The Federal Energy Policy Act of 1992 introduced a 1.5 cent per kilowatt hour production tax credit for wind energy, correcting an earlier tilt towards coal and oil energy subsidies. But since public utilities do not pay taxes, the tax shelter does not apply and although a direct-payment incentive is available for public utilities, it's often difficult to obtain this incentive from cash-strapped appropriations committees.

Since the credit can save private-sector financiers millions in federal income taxes however, tax credits are the carrot that makes investment in renewable energy worthwhile for private sector entities – enabling the sort of public-private sector partnership that has seen White Creek Wind thrive.

The White Creek Project is slated to cost \$361 million.

Environmental Benefits

But the benefits of wind power go beyond economics. The environmental damage caused by wind power generation is minimal. Carbon emissions are non-existent. There's no need to flood a valley, and there's nothing to mine. Plus, there's plenty of it.

According to a study by the University of Delaware, there is approximately 50 to 100 more times wind energy than plant biomass fuel available. Available wind energy amounts to more than seven times the entire global demand for electricity, and five times the total world energy demand.

There are limitations however. Just as solar panels don't heat up on cloudy days, wind turbines stop when the wind doesn't blow.

"White Creek's biggest challenge is accurate wind forecasting," says Young. White Creek contracts forecasting duties to 3TIER –a specialist forecasting company.

A University of Wisconsin study concluded that most wind farms produce between 17 and 39 times the amount of energy they consume while operating (for comparison, nuclear power generates around 16 times, and coal plants just eleven times the amount consumed).

Winds Gaining Strength

The growing popularity of wind power is one of the most exciting stories in the energy sector.

"It's going crazy," says Young.

According to the American Wind Energy Association, 1.6 million American homes are served by wind power, with that number expected to increase to 25 million by 2020. Worldwide production of wind power quadrupled between 2000 and 2006.

Wind is expected to meet six percent of the nation's power needs by 2020. The pace of change is so rapid that it is creating its human resources issues, says Young. "From construction to operations, we just can't get enough people," says Young.

In July 2005, the federal wind power tax credit was renewed for the fourth time. While there's no reason to believe the bill will not be renewed a fifth time, says Young, managers at White Creek are scrambling to finish before year's end, just in case. "Our focus is on establishing safe operations and optimizing production," says Young.

White Creek Wind is also reviewing plans to expand output by an additional 100 Megawatts, using another 40-50 wind turbines –testament to the growing desire for renewable energy in the Northwest.

About Lotus Construction Management

Lotus Construction Management (LotusCM) is a subsidiary of the internationally trading engineering and construction solutions provider LotusWorks.

LotusCM is a full service project construction management firm serving the power industry. LotusCM uses its extensive power experience and construction knowledge providing solutions which are timely, cost effective, innovative and safe. The breadth of capability includes pre-construction, construction & post construction needs, delivering full construction management solutions to power industry customers.

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