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Eastern Oregon's Klondike Wind Power Projects Serve as Testing Ground for Next-Generation Turbine Technology

Wasco, Ore. – Much more than wheat is rising on the rolling hills of the Central Columbia River Gorge. The expanding Klondike Wind Power Projects, just east of Wasco, Ore., hosts new, next-generation turbine technology designed to make generating wind power more efficient, safe and weather-resistant than ever before.

The Klondike III project is the North American test site for the flagship Mitsubishi 2.4 megawatt (MW), 92-meter rotor wind turbine manufactured in Japan. The turbine, erected at Klondike last winter, is designed for ease of transport, capability to assemble using smaller cranes than other turbine its size, superior performance and resistance to storm winds and lightning strikes.

The earlier Klondike II project has also been the U.S. test site for the prototype XLE wind turbine debuting an 82-meter rotor coupled with the well-proven GE Energy 1.5 MW turbine platform. Klondike II is also the favored testing ground for other enhancements, such as advanced gearbox conditioning monitoring, new oil filtration devices and systems to allow technicians to climb towers with less effort and more safely.



Mitsubishi MWT92
prototype turbine

“IBERDROLA RENEWABLES and the Klondike team are honored to be a test and showcase site for the advanced GE equipment and Mitsubishi’s flagship unit in the United States,” said Harm Toren, head of operations services for IBERDROLA RENEWABLES of Portland, Ore. “Mitsubishi could have tested that unit at any wind farm, but the consistent winds of the Central Gorge and the reputation of the Klondike crew made this the ideal place to test the Mitsubishi turbine. They knew they were testing the machine, not the weather or the operations staff.”

One of the key safety features of the Mitsubishi turbine is called “Smart Yaw,” which, when certain conditions are present, rotates the machine in a reverse configuration so the machine acts in a “weather vane” pattern during high wind speeds and changing wind directions. This lightens the wind load on the turbine so that it can cope with higher forces, even as high as a storm blowing at 156 miles per hour (more than 70 meters per second). At the low end, the turbine can generate electricity in winds as light as six miles per hour (three meters per second).

This turbine is currently the largest turbine in the IBERDROLA RENEWABLES fleet in the United States, with a maximum output of 2.4 MW. The turbine is larger but comparable in scale to the GE Energy turbine, which is the primary turbine at the Klondike I, II III and IIIa projects. The Mitsubishi MWT92 turbine has a 302-foot (92-meter) rotor diameter. The highest point above the ground from the foundation to the tip of a rotor blade is 381 feet (116 meters).

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The Mitsubishi 2.4MW turbine has been selected and is already being installed at another IBERDROLA RENEWABLES wind farm on the U.S. Gulf Coast. The machine was primarily selected for its superior performance in storm-force winds thanks to its "Smart Yaw" technology. IBERDROLA RENEWABLES has ordered 169 2.4 MW Mitsubishi turbines for use in wind power projects scheduled for completion this year and next.

The Klondike Wind Power Developments encompass four individual wind power projects: Klondike I, Klondike II, Klondike III and Klondike IIIa, located in Central Oregon on private ranches and farms on the Columbia River Plateau. Together, these wind energy projects generate a total of 400 megawatts (MW). Typically a 400 MW wind project can generate power for more than 115,000 homes, according to the American Wind Energy Association's calculation.

A special dedication celebration for Klondike III and IIIa will be held on Monday, Oct. 6, 2008, starting at 10 a.m. Picnic lunch and turbine tours for the public will follow the speaker program. This free event will take place at the Klondike operations center on Klondike Lane near the Wasco airport.

Named for an original Sherman County settlement, the projects support the local economy through lease payments to landowners and property tax or in-lieu payments to Sherman County. Hundreds of jobs were created during the projects' four construction periods spanning 2000 to 2008. While the project spans thousands of acres of private land, the actual footprint is less than two percent of the total area. Landowners continue using the remainder of the land for wheat farming, ranching and other traditional activities.

IBERDROLA RENEWABLES is currently the world's leading provider of wind power with more than 8,000 MW of wind power in operation globally now. Between 2008-2012, the company will invest \$26.8 billion globally to achieve installed capacity of close to 18,000 MW and production of more than 42,000 GWh. IBERDROLA RENEWABLES will invest \$8 billion in the U.S. between 2008 and 2012 and plans to install 1,000 MW of wind power each year in the U.S. www.iberdrolarenewables.us.

Mitsubishi Power Systems Americas (www.mpshq.com) is the Western-hemisphere subsidiary of Mitsubishi Heavy Industries (MHI, Japan) specializing in power generation systems sales, installation and service. Wind turbine generating equipment and systems are a core element of Mitsubishi's alternative energy product line, which includes solar, geothermal and hydroelectric generating systems.

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Resources for media available upon request:

B-roll of the Mitsubishi turbine construction and print-quality still photographs available

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