

FOR IMMEDIATE RELEASE

Construction of Demonstration Prototype Of 5-MW Offshore Wind Turbine with Downwind Rotor

Tokyo, November 26th, 2013 --- Hitachi, Ltd. (TSE:6501) today announced that it has decided to construct a demonstration prototype of the HTW5.0-126 at an onshore site in Kamisu City in Ibaraki Prefecture. The HTW5.0-126 is a 5-MW offshore wind turbine that uses a downwind rotor, and its development commenced in July 2012 in response to demand for larger offshore wind turbine. Construction is to commence before the end of FY2013 and demonstrational operations are scheduled to begin in the first half of FY2014. The HTW5.0-126 system uses a unique configuration developed by Hitachi in which the rotor is located on the downwind side of the tower, and that is intended to improve safety while reducing the cost of building foundations or floating platforms^{*1}. Sales of the HTW5.0-126 are scheduled to commence from FY2015.

The adoption of renewable energy in Japan has been boosted by the introduction in July 2012 of a feed-in tariff scheme designed to help realize a low-carbon society. Because Japan is an island nation, there is also an expectation that more offshore wind power generation capacity will be installed to take advantage of the large areas off the coast where issues such as visual impact, noise and the difficulty of acquiring sites are less constraining. The construction of a number of offshore wind farms is already planned. Because offshore wind farms have higher construction and operating costs and more difficult maintenance than onshore sites, offshore wind turbines require high reliability and a high output per unit.

Along with its acquisition of the wind turbine business of Fuji Heavy Industries, Ltd. in July 2012, Hitachi has established the capabilities to handle everything from development through to design, fabrication, sales, and maintenance, and is focusing on expanding this business. A large number of the existing 2-MW HTW2.0-80 wind turbine have already been supplied in Japan, giving Hitachi the leading share of the market in 2012^{*2}. In anticipation of future market needs, Hitachi is participating in offshore floating wind farm demonstration projects being run by agencies such as the Ministry of Economy, Trade and Industry and Ministry of the Environment, as well as commencing construction of a demonstration prototype of 2-MW wind turbine designed for low wind sites .

The 5-MW rated output of the prototype HTW5.0-126 wind turbine being constructed at Kamisu is 2.5 times higher than that of the existing HTW2.0-80 model, and its 126-m rotor diameter is roughly 1.5 times larger. Like the HTW2.0-80, the

HTW5.0-126 uses the downwind configuration developed by Hitachi to reduce wind loading by keeping the rotor oriented in such a way that it is not subjected to crosswinds, even during strong gusts. It also features improved reliability and a lighter and more compact overall design through the combination of a newly developed permanent magnet synchronous generator with a medium-speed speed-increasing gear. These features are intended to improve safety and reduce the cost of installing the seabed foundations or floating platforms for fixed and floating offshore wind turbine respectively. In the case of floating installations, the ability of the downwind configuration to capture wind energy efficiently would result in greater power generation. The prototype will be used in demonstrations to measure its output, wind loading, and other characteristics.

With the aid of funding from the “Development of More Advanced and Practical Wind Turbine Components” project of the New Energy and Industrial Technology Development Organization, Hitachi plans to continue making improvements to its offshore wind turbine.

Demand for wind turbine is expected to grow in the future. In addition to actively participating in this market, Hitachi will also contribute to the creation of a low-carbon society by supplying electric power systems that support social infrastructure.

■Artist's impression of HTW5.0-126



■HTW5.0-126 demonstration prototype specifications

Specification	HTW5.0-126
Rated power	5MW (5,000kW)
Rotor diameter	126m
Hub height	90m (approx.)
No. of blades	3
Rotor location	Downwind
Yaw control	Normal operation: Active control Stand-by-mode in high winds: Free yaw
Generator	Permanent magnet synchronous generator
Cut-in wind speed	4m/s
Cut-out wind speed	25m/s
Wind velocity class	IEC-Class S (yearly mean wind speed: 10m/s)

Notes:

- *1: Available construction techniques depend on factors such as water depth and sea floor conditions.
- *2: Source: Calculated from total capacity newly commissioned by Hitachi, Ltd. or Fuji Heavy Industries, Ltd. in 2012 (based on total output) from the "Table of Wind Power Generation Equipment and New Installation in Japan" published by the New Energy and Industrial Technology Development Organization

About Hitachi, Ltd.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, is a leading global electronics company with approximately 326,000 employees worldwide. The company's consolidated revenues for fiscal 2012 (ended March 31, 2013) totaled 9,041 billion yen (\$96.1 billion). Hitachi is focusing more than ever on the Social Innovation Business, which includes infrastructure systems, information & telecommunication systems, power systems, construction machinery, high functional material & components, automotive systems and others. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

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