

News Release

FOR IMMEDIATE RELEASE

Hitachi Strengthens Wind Power Generation System Business

Strengthening the solution business with a focus on wind turbines from ENERCON

Tokyo, January 25, 2019 --- Hitachi, Ltd. (TSE: 6501) today announced that it will strengthen its wind power generator maintenance services and expand its core product of wind power generation solution business, as part of efforts to strengthen its renewable energy business, including community-based and collaborative creation-oriented energy projects that combine solar power, storage batteries, EMS*¹ and other elements. Hitachi will also strengthen its alliance with ENERCON GmbH, a manufacturer and distributor of wind power generators that boasts a leading share of the German wind power generation market and number-two share in Europe*².

Wind power generation accounts for the greatest volume of electricity generated by renewable energies worldwide, and is also regarded as having the strongest future growth potential among renewables. In Japan, the adoption of wind power generation is expected to accelerate, in part thanks to support from new schemes such as the feed-in tariff (FIT) scheme launched in 2012. On the other hand, the market has undergone significant changes, and while suitable land*³ for the installation of wind turbines will become limited to inland areas as flat terrain with favorable wind conditions and coastal areas become increasingly scarce, turbine blade diameters have gotten larger and the installation of wind turbines with high standalone output has advanced. Moreover, in addition to electric power companies, there is increasing involvement in wind power generation business from various other companies and groups such as private companies other than electric companies and local governments. Meanwhile business models are also in transition, shifting away from the sellout model that focused on the sale of wind power generators in favor of service models that incorporate long-term operation and management (O&M*⁴) packages*⁵.

In a bid to realize further growth and boost the profitability of its renewable energy business, Hitachi aims to pair the strengths in IT and OT*⁶ it has cultivated to date with digital solutions that competitors will be unable to match and a core product of wind turbine as a new value proposition. In connection with this, Hitachi will strengthen the wind power business by providing these new values.

1. Enhancing the solution business with wind turbines at the core product

Hitachi has developed a service platform “Lumada” that takes OT that optimally control and operate customer wind power generation systems and combines them with digital technologies, and promoted increasingly high value added service business such as sophisticated maintenance services. First of all, in order to realize stable management by customers, strengthen solution business that contributes to realization of stable operation of wind power generation systems, reduction of maintenance cost and maximization of facility performance by using predictive diagnosis system. Specifically, by collecting information on the operation of a customer’s wind power generation system in real-time, equipment malfunction can be predicted, and remote control-based maintenance support can be provided to avert unexpected generation stoppages and facilitate stable operation. With predictive maintenance systems, meanwhile, information collected by the Remote Monitoring and Support Center can be used for analysis and diagnosis, allowing maintenance personnel to be swiftly dispatched to adopt appropriate measures when needed, and realize an increase in power sales amount by reducing a large repair cost and a downtime period.

We will also accelerate the provision of new solutions utilizing state-of-the-art AI. Currently, Hitachi is also conducting demonstration testing for a technology designed for large-scale wind farms with multiple wind turbines arranged in lines in conjunction with the National Institute of Advanced Industrial Science and Technology and the University of Tokyo. The technology will control each wind turbine individually and boost the overall generating capacity of the wind farm by using AI to analyze the effects of wind flowing in to wind turbines arranged in a line. Going forward, we will also provide solutions utilizing new technologies, to solve customers' issues such as increasing the amount of electric power generation per unit even at installation locations where the annual average wind speed is relatively low. Since the Japanese government has adopted measures to position renewable energies as the “main power supply” and will be predicted the spread of distributed power sources, Hitachi will also bolster the provision of community-based solutions with the potential to maximize the adoption of wind power generation. Hitachi is pursuing a compact energy network development project for local governments and other regional areas, and moving forward will seek to further bolster its solutions by steadily proposing energy networks that utilize wind power generators produced by ENERCON.

2. Expanding scope of business alliance for wind turbines with German-based

ENERCON and Hitachi's downwind wind turbine business

Hitachi has decided to expand a scope of business alliance with ENERCON. Hitachi has deployed wind turbine business as a solution business comprised of Downwind Wind Turbines developed and manufactured in-house, and ENERCON's wind power generators handled through Hitachi Power Solutions Co., Ltd. a wholly owned subsidiary of Hitachi. However, under the current structure, there are issues hindering the further expansion of the business, such as development costs, the distribution of human resources and redundant maintenance service divisions and training centers.

ENERCON is a dedicated manufacturer and distributor of wind power generators that was established in Germany in 1984. It holds a 38.1% share of the German market and is also one of the leading manufacturers in Europe with a 22.1% market share^{*2}. Since its founding, ENERCON has delivered a cumulative 29,260^{*7} units worldwide, and its lineup includes turbines with 44-160-meter blade diameters and rated outputs of 900kW- 4.5MW, and 7.5MW prototype model^{*8} for European market, of which the 95 units have already been installed. Hitachi Power Solutions has concluded collaboration agreement in 1997 and since then, it has been delivering 428 units^{*9} of ENERCON's wind turbines as its sales, construction and maintenance partner in Japan.

From now on, Hitachi, as a group wide will market ENERCON's wind turbines. With this latest policy, Hitachi will maintain the top share of the wind turbines market in Japan by expanding the solution business integrating global leading manufacture's wind turbines with Hitachi's digital technology. Meanwhile, Hitachi will further strengthen wind power generation business by consolidating resources distributed previously.

Note that Hitachi will continue to conduct the ongoing projects used downwind turbines both in Japan and overseas, and as previously, will offer the consistent solutions including maintenance and services to existing wind power plants installed downwind turbines.

*1 Energy Management System

*2 Source: Materials released by ENERCON

*3 A place suitable for installation of a wind power generator that wind is strong and away from private houses

*4 Operation & Maintenance

*5 To sell multiple services and products by integrating them into one solution

*6 Operational Technology

*7 As of January 2019

*8 On the premise of mass production, models that demonstrate to verify new technologies / new mechanisms, test, and identify problems before mass production.

*9 As of January 2019, including under construction

About Hitachi, Ltd.

Hitachi, Ltd. (TSE: 6501), headquartered in Tokyo, Japan, delivers innovations that answer society's challenges, combining its operational technology, information technology, and products/systems. The company's consolidated revenues for fiscal 2017 (ended March 31, 2018) totaled 9,368.6 billion yen (\$88.4 billion). The Hitachi Group is an innovation partner for the IoT era, and it has approximately 307,000 employees worldwide. Through collaborative creation with customers, Hitachi is deploying Social Innovation Business using digital technologies in a broad range of sectors, including Power/Energy, Industry/Distribution/Water, Urban Development, and Finance/Social Infrastructure/Healthcare. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

###