

## **Recent R&D activities in AIST for Japan's offshore wind power deployment**

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The world total installation capacity of wind turbine generation (WTG) systems reached 837 GW at the end of 2021, and this is almost equivalent with 260 nuclear reactors not in capacity, but in generated energy amount. Annual net increase in 2021 in capacity was 93.6 GW and over 20 % of it was offshore WTG, therefore, the phase of full-scale commercialization and dissemination of offshore WTG is coming now. On the contrary to the world's rapid development, the domestic deployment of onshore and offshore wind is not high pitch in the last several years, and unfortunately this might have caused the disruptions of large wind turbine manufactures in Japan.

Mr. Suga, who is a former Prime Minister, declared in October 2020 that Japan is aiming to cut greenhouse gases to zero by 2050 and become a carbon-neutral society (carbon neutrality in 2050). To achieve the carbon neutrality in 2050, the Green Growth Strategy which aims to create a positive cycle of economic growth and environmental protection, together with the business community was formulated by the Ministry of Economy, Trade and Industry (METI), and offshore wind power was selected as one of key energy sector in the strategy. The aim is to set ambitious goals and fully support the private sector's efforts toward carbon neutrality.

A Public-Private Council on Enhancement of Industrial Competitiveness for Offshore Wind Power Generation was inaugurated by the METI and other ministries to advance expansion of systematic and continuous introduction of offshore wind power generation as well as enhancement of competitiveness of industries related to such power generation which is indispensable for the introduction in a manner that the public and private sectors unite their efforts. The vision for offshore wind power industry and the technology development roadmap toward 2030 were formulated by the public-private council for offshore WTG.

The wind power team, AIST will technically support to achieve the vision and the technology development Roadmap formulated by the public-private council for offshore WTG, and we have been conducting the R&D on elemental technologies for performance improvements of wind turbines and on the advanced technology for wind resource assessment that will be introduced.