

NEDO Green Innovation Fund Project
for the Mass Production & Cost Reductions for Offshore Power Generation

Japan Marine United Corporation (JMU), as a consortium with Nihon Shipyard Co., Ltd (NSY), K-Line Wind Service Ltd. (KWS), and TOA Corporation (TOA), was adopted as a New Energy and Industrial Technology Development Organization (NEDO) Green Innovation Fund project for reducing the cost of offshore wind power generation.

The Japanese government has accelerated the clean energy strategy to achieve decarbonization in order to meet carbon neutrality by 2050 and expand the introduction of renewable energy as much as possible. The expectations for the offshore wind power, in particular, is enormous in terms of the feasibility of large-scale introduction and cost reduction as well as the anticipated economic ripple effect. As such, offshore wind power generation holds the key to making renewal energy a main source of power.

Unlike Europe and elsewhere, there are few shallow seas around Japan and the introduction of floating offshore wind is highly expected. For the expansion of floating offshore wind, however, the low-cost construction technologies as well as mass production system through technology development is essential.

Under such circumstances, this project “Mass Production and Cost Reductions for Offshore Power Generation“ seeks to find ways to the mass production system and low-cost construction technology in the EPCI business for floating offshore wind power generation including floater design, mooring system and offshore installation work.

The consortium will conduct technical research and development in the following aspects:

Consortium Member	Area of R&D
JMU	Develop Floater designs/Floater manufacture/Offshore wind turbine EPCI ✓ Optimization of floater ✓ Mass production system of floater ✓ Optimization of hybrid mooring system ✓ Cost-competitive procedure in floating offshore wind installation (turbine assembly and floater installation)

Consortium Member	Area of R&D
NSY	Engineering of Floater designs, Develop offshore support vessels ✓ Optimization of floater ✓ Mass production system of floater ✓ Optimization of hybrid mooring system ✓ Cost-competitive procedure in floating offshore wind installation (turbine assembly and floater installation)
KWS	Develop floating foundation installation procedure ✓ Cost-competitive floating foundation installation procedure
TOA	Develop wind turbine assembly procedure ✓ Cost-competitive wind turbine assembly procedure

National Institute of Marine, Port and Aviation Technology will also join as the co-researcher regarding the optimization of floater and hybrid mooring system to be performed by JMU.

In June 2021, DNV issued a Statement of Feasibility for JMU semi-submersible floater, which was developed based on the experience of fabrication, installation and O&M of the floater through the Fukushima floating offshore wind farm demonstration project (Fukushima FORWARD). The same semi-submersible floater design will be used for the project this time as well.

In addition to the experience of this project, JMU's competitive advantages including excellent engineering know-how in shipbuilding and offshore structures, the experience of Fukushima FORWARD, and top-level construction capability in Japan, must lead to achieve early commercialization of cost-competitiveness EPCI business for floating offshore wind power generation.

JMU engineering efforts to the floating offshore wind business has commenced since 1999 as the internal R&D and continued up to the present through the Fukushima FORWARD. Nowadays the floating offshore wind is widely considered as the trump card to realize the carbon neutrality by 2050. JMU will contribute to environmental protection and social development by promoting expansion of renewable energy in terms of the realization of floating offshore wind.