GE's Haliade-X 14.7 MW-220 turbine obtains full DNV type certificate

- *Rigorous third-party certification process for Haliade-X successfully completed*
- *Haliade-X becomes the largest wind turbine with a full type certification*
- *14.7 MW-220 builds on the Haliade-X platform that has been validated with extensive prototype tests completed since 2019*

Paris, December 15, 2022 – GE Renewable Energy announced today that its Haliade-X wind turbine, the first 12 MW+ turbine built, has received a full type certificate for operations up to 14.7 MW from DNV, the world's largest independent certification body. This type certification, which follows an earlier certification that the Haliade-X could operate at up to 13.6 MW, provides independent verification that these turbines will operate safely, reliably and according to design specifications and makes the Haliade-X the most powerful turbine with a full type certification.

The first use of the certification will be for the 3.6 GW Dogger Bank Wind Farm in the UK, which will become the largest offshore wind farm in the world when it is complete. The certification can be used at up to 14.7 MW and will be applicable for the 87 14 MW turbines that will be used at Dogger Bank C. Dogger Bank Wind Farm is a joint venture between SSE Renewables, Equinor and Vårgrønn. Due to its size and scale, the site is being built in three consecutive phases: Dogger Bank A, Dogger Bank B and Dogger Bank C.

The process of certifying the Haliade-X 14.7 MW-220, which builds on the proven Haliade-X platform, involved a series of tests on a prototype located in Rotterdam, a port city in the Netherlands. The Haliade-X prototype has been extensively tested and validated since 2019.

Vincent Schellings, Chief Technology Officer for Offshore Wind at GE Renewable Energy, said "This is a key milestone for us as we continue to build on the proven Haliade-X platform. The full type certification gives customers confidence that the

Haliade-X has been designed, manufactured, and tested in a manner consistent with internationally recognized standards."

"At DNV, we forecast 2 TW of grid installed offshore wind capacity by 2050. This development is also linked to larger turbines like GE's Haliade-X. Continued increases in turbine, blade, and tower size will lead to improvements in the capacity factors. We are happy to support GE with our certification services to ensure safe and reliable wind turbines supporting the growth of wind energy," says Kim Sandgaard-Mørk, Executive Vice President for Renewables Certification at DNV.

Launched in 2018, GE's Haliade-X offshore wind platform was the first 12 MW+ turbine available. It set a new benchmark in lowering offshore wind's levelized cost of energy (LCOE) and it is making offshore wind energy a more affordable source of renewable energy. One GE Haliade-X 14.7 MW-220 offshore wind turbine can generate up to 76 GWh* of gross annual energy production, providing enough clean energy to power the equivalent of 20,000 European households and save up to 53,000 metric tons of CO_2**.

The Haliade-X prototype first began operating in November, 2019. Since then it has set several world records in terms of continuous power output in one day. Schellings said that the ability to operate and test the Haliade-X prototype over the several years has provided significant learnings that have enabled GE to provide the first turbine fully certified at 14.7 MW-220.

"Experience is the best teacher," Schellings said, "and in the past three years our engineers have learned a great deal about how to maximize the performance of the Haliade-X. This full type certification validates our ability to translate those lessons into more performance for customers using offshore wind to help mitigate climate change."

* Gross performance based on wind conditions on a typical German North Sea site
** According to EPA Greenhouse gas equivalencies calculator

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GE Vernova, a dynamic accelerator comprised of our Power, Renewable Energy, Digital and Energy Financial Services businesses, focused on supporting customers' transformations during the energy transition.

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