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Norwegian offshore windfarms will benefit both R&D and business

The Norwegian parliament's decision to establish one to two areas for floating offshore wind off the coast of Norway is great news for both Norwegian R&D and innovation, as well as for the competitiveness of Norwegian industry and businesses abroad.

Production of renewable energy increases every year. Investments in offshore wind energy are an important move towards a more viable future for everyone. Norwegian advisors and suppliers to offshore wind farms are doing well abroad, but have been challenged due to a lack of large-scale ocean

wind laboratory on the Norwegian continental shelf.

"Together with industry and businesses in Norway, NGI has many years of experience in the foundation of offshore oil and gas installations. In recent years we have contributed with research, development and advice on the foundation of offshore wind farms in major parts of the world. The Norwegian parliament's decision to facilitate offshore wind farms in Norway is therefore particularly positive news for everyone involved in the development of offshore wind, both research institutes and advisors, as well as industry and businesses. This will help strengthen Norwegian industry's competitiveness abroad," says Karl Henrik Mokkelbost, Market Director for Offshore Energy at NGI.

With the support from the Research Council of Norway, NGI and collaborators, such as NTNU, IFE, Dr Techn Olav Olsen, Statoil and Statkraft, contribute with knowledge and research that supports the needs for the industry to offer smarter, less expensive and more secure solutions for the foundation and anchorage of offshore constructions.

Technology transfer from oil and gas

The world-leading expertise NGI within the field of offshore foundation and anchorage is the direct result of many years of research and innovation efforts. Technology originally invented and developed for the foundation of oil and gas installations, has found its way to offshore winds over the last 7-8 years. Most recently in connection with the establishment of Statoil's floating offshore wind farm, Hywind, off the coast of Scotland.

In the 1990s, NGI started work on developing a new method for the foundation of jackets and platforms for offshore constructions. The technology of bucket-based foundations (Suction Buckets or Suction Anchors) has been used worldwide to provide a safe base on the seabed for over 100 platforms. The technology is increasingly gaining popularity in the secure foundation of offshore wind turbines," says Karl Henrik Mokkelbost.

The increased investment in domestic wind power in Norway will give research institutions and universities an even better basis for supporting Norwegian businesses in the development of renewable energy. Something that will benefit both the industry and the environment in the future.

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FACTS:

- NGI's core mission is to aid social development in Norway with research, consultancy and contributions to education in the field of engineering-related geosciences. The results from Our research is applied directly by the profession and the industry.
- The pioneering technology with development of commercial application of suction buckets made researchers from NGI and Statoil to become members in the Offshore Hall of Fame in Galveston, Texas, USA, as a recognition of their comprehensive work within offshore Foundation engineering.
- Through the Energi-X program and research project REDWIN NGI, together With NTNU, IFE, Dr Techn Olav Olsen, Statoil and Statkraft, develops improved design methods and less expensive offshore Wind power, which contributes to the green shift for both the industry and the environment.
- NGI has also completed the research program Offshore wind turbine Foundations.
- NGI has contributed to Statoil's offshore floating Wind park, Hywind, outside the coast of Scotland.
- When ØRSTED (earlier: DONG Energy), establish the Wind turbine park Borkum Riffgrund II in the German sector of the North Sea, NGI is responsible for foundation design and installation of the Suction Bucket Jackets for 20 of the massive offshore Wind turbines. NGI has also contributed With design for the Borkum Riffgrund I development.

The Norwegian Geotechnical Institute (NGI) is a leading international centre for research and consulting within the geosciences. NGI develops optimum solutions for society, and offers expertise on the behaviour of soil, rock and snow and their interaction with the natural and built environment.

NGI works within the markets Offshore energy; Building, construction and transportation; Natural hazards, and Environmental Engineering.

NGI is a private foundation with office and laboratory in Oslo, branch office in Trondheim, and daughter companies in Houston, Texas, USA, and Perth, Western Australia. NGI was established in 1953.

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