

JIP Cable Lifetime Monitoring

Publieke samenvatting / Public summary

Aanleiding

Submarine power cables are used in the offshore wind industry to connect individual wind turbines and whole wind farms to the electricity grid. Unfortunately, these power cables show to be less reliable than required. As a result, society is not optimally benefiting from renewable offshore wind energy.

Doelstelling

The power cables must become more reliable and exactly this is the high-level goal of this project.

Korte omschrijving

The goal will be met by an intense learning from power cable failures which have happened in the recent past. These failures will be collected and analysed in a separated confidential environment such that all particularities regarding cable failures can be assessed and weighed in a dedicated analysis. Generalized learning points will be deduced which will be developed in the project into recommendations for better design, manufacturing, installation, testing and operation of offshore wind farm cables. It is already known that a number of failure causes will be related to cable movement and forces acting on cables. Separately, the project will attempt to develop a monitoring tool on the basis of glass fibre measurements of physical parameters like strain and temperature. Another aspect which will be focused upon is the seabed where the cables are buried in. The cable burial is a measure to mitigate excessive risk from third party damage but, especially in the case of the dynamic seabed like in the North Sea, requires optimisation.

Projectinformatie / Project information

Projectnummer / Project number

TEHE118019

Subsidiebedrag / Grant amount

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Algemene informatie / General information

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Publicaties en materialen / Publications and attachments

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Eindrapport TEHE118019

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Resultaat

With the work performed in this project, the reliability of power cables will be increased by reducing the number of cable failures in submarine power cables. This will meaningfully reduce the levelized cost of energy (LCoE) from offshore wind. The recommendations will be disseminated to the wider international power cable industry by means of a report, a tutorial and semi-scientific papers. Introduction of the new recommendations and guidelines will be made easy by application in new specifications, which can be used immediately in 'tomorrows' offshore wind farm projects. Parts of the findings can also be applied in existing offshore wind farms and the project itself is equally relevant for interconnector projects. Because the project comprises 30+ companies throughout the whole power cable industry working together, it is ensured that the recommendations that are developed and work that is done is realistic, relevant, achievable and acceptable to the power cable industry, which guarantees introduction of the recommendations and the actual change towards more reliable power cables that is needed.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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