CABLE JIP 2 (CJ2)

Publieke samenvatting / Public summary

Aanleiding

CABLE JIP 2 is an industry R&D project for next generation inter-array electrical cables for the offshore renewable energy industry. Specifically, the project concerns the development of a next generation cable to achieve a technology readiness level of TRL 5-7. The project focusses on the electrical cable under a floating wind solution, which is assumed to be the most challenging case for dynamic cables offshore. It is believed that if the problem is solved for this severe case, it is also solved for most other applications, such as wave energy conversion (WEC), tidal energy conversion or floating solar and e-charging buoy. The investment cost of the project can be easily earned back on AEP, CAPEX and/or OPEX.

Doelstelling

The main objective of the project is to develop the required subsea inter-array cable technology for the rapidly developing offshore renewable industry. As evidenced by insurance claims and recent experience from offshore wind farms, there is still a lot to be gained for subsea electrical cable technology. Overall, there is a strong need to de-risk the subsea electrical cables and to bring down the levelized cost of energy (LCoE):

Korte omschrijving

The project will be structured as a normal joint industry project, such as executed in the framework of MARIN FPSO JIP week or MARIN Blueweek. The project is divided into 5 main work packages plus one additional work package for JIP management:
WP 1: Development of next generation cable (TKF)

Projectinformatie / Project information

Projectnummer / Project number
HER+-01134662
Subsidiebedrag / Grant amount
€ 660.264,00

Algemene informatie / General information

Penvoerder / Secretariat
Stichting Maritiem Research Instituut Nederland

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WP 2: Design of cable system (Bluewater) WP 3: Development of cable VIV tool (MARIN) WP 4: Development of cable monitoring system (MARIN) WP 5: Offshore site test of cable under a CALM buoy (contingency) WP 6: Management & Coordination (MARIN)

Resultaat

A new generation subsea inter-array cable with improved fatigue properties. The new subsea inter-array cable will retain the attractive features of the present generation cable, including its competiveness compared to alternative solutions. The improvement of the new cable is obtained by corrugated aluminium sheathing, which will reduce the bending stiffness as well as the stress levels under cyclic loading. The modern design of thecable allow for rapid offshore installation and repair, without the complications of 'dirty tar' or other difficult to handle materials. The cable will be produced in long length up to several hundreds of kilometres for up to 66 kV application. The project will fill in the knowledge gaps for design life prediction for free spanning subsea electrical cables in exposed offshore dynamic application. Although the technology exists in principle (e.g. in Orcaflex or Shear7), the large uncertainties prevents the potential cost saving that can be achieved for the electrical cables. The main knowledge gaps that will be addressed in the project are: more accurate dynamic response calculations in the time domain.

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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