

Step change in turbine capacity to meet 2030 cost reduction

Publieke samenvatting / Public summary

Background

2-B Energy already has developed a low-cost, low-maintenance wind turbine, the 6MW 2B6, of which an onshore demonstrator is in operation. By introducing a step change in turbine size, in addition to the cost reducing design features of the existing 6MW design, very significant cost savings can be obtained in the (electrical) infrastructure cost, installation cost and Operation & Maintenance (O&M) cost. This especially becomes significant once wind farms will be located farther from shore and in deeper waters. Other wind turbine manufacturers have started developing turbines in this power range as well, but to date no turbine of this size has been ever built. The 2 bladed, downwind turbine, apart from being lower cost, also offers inherent technical advantages for very large turbines. For example blade clearance, the safe distance of the blade tip to the tower, which becomes a big issue for the extremely long blades that will be used in these very high power turbines, can be much easier controlled with downwind turbines, where the blade under load bends away from the tower, instead of towards the tower. In addition, the two bladed downwind set-up will reduce the production costs.

Objective

To develop the 2B1X an innovative 14 Megawatts two-bladed downwind turbine that solves the problems described above and reduces the cost level so that future projects further from the coast in deeper water can produce energy at acceptable and

Projectinformatie / Project information

Projectnummer / Project number
TEHE118009

Subsidiebedrag / Grant amount
€ 2.548.254,00

Algemene informatie / General information

Penvoerder / Secretariat
2-B Energy Holding

Publicaties en materialen / Publications and attachments

- 27.10.2023

Eindrapport TEHE118009

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competitive cost levels, reducing the basic tariff by
=10 €/MWh-1.

Short Description of activities

The project consists of two phases. First, the concept design of the wind turbine will be developed. Second, a basic design will be developed.

Results

The project will have the following results:

- Rotor blades (108 metres) and mechanic drive train design
- Helicopter and nacelle platform design
- Electronic drive train, control safety and loads, assembly, transport and installation, monitoring and auxiliary system design
- Support structure design
- Integrated (basic) wind turbine design
- Design certification
- Documentation

Furthermore the project will result in a detailed plan for the follow-up trajectory, covering detail design, sourcing, production preparation and demonstration

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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Voor meer informatie over de TSE / Energie-Innovatie regelingen die RVO aanbiedt, ga naar www.rvo.nl/tse.