Exploratory Research and LCoE of Airborne Offshore Wind Farm

Publieke samenvatting / Public summary

Background

Airborne Wind Energy (AWE) has the potential to reduce the cost of offshore wind to around 60 to 70 €/MWh after 2023. The project partners want to advance existing knowledge and develop new technical knowledge to fulfill this potential.

Objective

This project aims to investigate, select and design technical concepts for offshore applications of Airborne Wind Energy Systems (AWES), combined into a conceptual design of a 350 MW airborne wind farm.
Through the much-reduced weight of the airborne generator and reduced forces that act on the support structure installation and O&M costs could be substantially lower than in existing offshore wind technology.

Short Description of Activities

Ampyx Power and Mocean will perform a conceptual design of a 2MW offshore-adapted airborne generator and an offshore support structure, allowing for +/- 20% cost estimates. They will build an integrated model to analyse, scale and evaluate concepts for the airborne generator, the support structure and how these interact. ECN will validate the model and core assumptions. Marin will test a scale model of the integrated design in their test basin. Based on the selected design, the most cost-effective Installation and Operations and Maintenance concept will be proposed, and the LCoE for a350 MW airborn offshore wind farm will be

Projectinformatie / Project information

Projectnummer / Project number
TEWZ116048
Subsidiebedrag / Grant amount
€ 435.022,00

Algemene informatie / General information

Penvoerder / Secretariat
Ampyx Power B.V.

Links

- Video: Ampyx Power Floating Airborne Wind Energy System
- Far offshore floating airborne wind energy systems possible and competitive (Ampyxpower, 2018)
- Public Summary (Publication, Ampyxpower)

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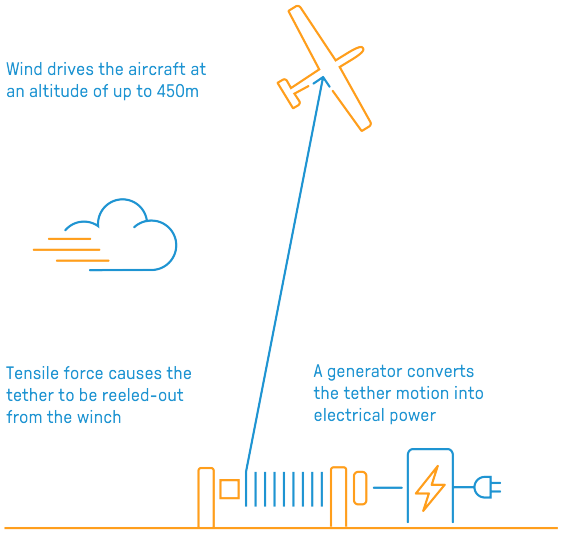
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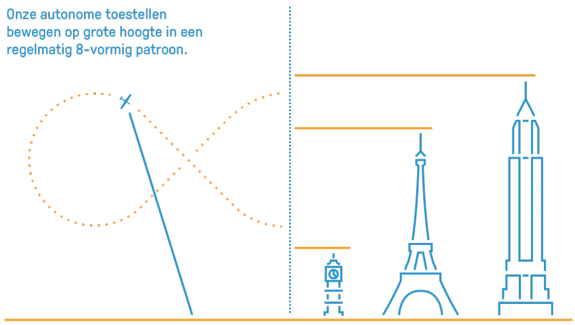
calculated.
Furthermore, an analysis of the relevant regulatory field will be done, resulting in a clear certification and permitting strategy.

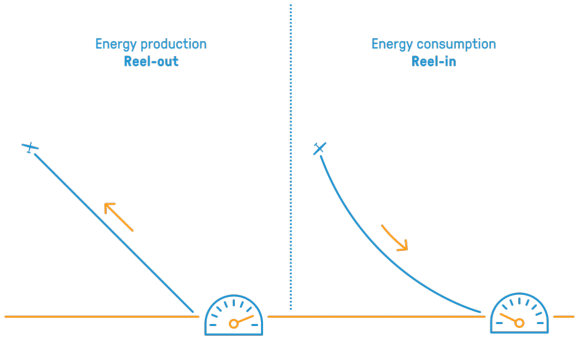
Results
Ampyx Power's system generates electricity from wind using an aircraft flying 500m high.
The system could be deployed in deep water on small anchored floating platforms.

The working principle

See also the video under 'Links'.







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