Better Integrated Response for Diminishing Strikes in offshore wind Flight Environments

Publieke samenvatting / Public summary

Aanleiding

The North Sea is a vital habitat and migratory route for numerous bird species. The Netherlands, together with its neighbouring countries, has high ambitions for developing offshore wind in the North Sea. These developments however are only possible when the North Sea nature is taken into account. Thus, with the rapid expansion of offshore wind farms, there is a necessity to acquire increased insight into the impact wind farms have on migrating birds. Moreover, to ensure expansion of offshore wind farms, we need insights that can enable innovative new solutions to better manage and mitigate unwanted side effects from offshore wind farms. Bird migration over the North Sea occurs during autumn and spring, when millions of birds of numerous species make their bi-annual journey for food, breeding habitat or milder climates. Songbird migration occurs primarily during nocturnal hours and remarkably migration is often condensed into short time periods when the weather is especially favourable. Within the optimal time periods in the migration season (in autumn this is in October for the most abundant species), with migration peaks during only a few nights.

Doelstelling

The Goals of BIRDSAFE fit exactly into this innovation theme 'Electricity': 1) To increase intelligence on nocturnally migrating birds in and around offshore wind farms through an extensive, detailed and innovative monitoring campaign; 2) Based upon this data create an innovative bird/wind

Projectinformatie / Project information

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Algemene informatie / General information

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Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek TNO

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farm model to enable experimenting with smart methods to mitigate migrating bird impacts and disturbances during migration periods; 3) To provide advice to the stakeholders and regulatory authorities for the next generations of 'Start/Stop' and future opportunities for operating offshore wind farms in improved harmony with migrating birds.

Korte omschrijving

The project begins with the detailed planning of the measurement campaign, procurement of the measurement infrastructure and installation of the equipment. Vattenfall provides the wind farm, TNO is responsible for the blueprint of the measurement set-up and FON procures and installs the measurement infrastructure. Robin Radar is the manufacturer of the bird radar systems deployed in the project. In year one the market-ready Robin Radar Max will be deployed. In addition in the second year of monitoring a second new and more powerful Robin Radar prototype will be deployed, giving additional coverage of the bird flights. Gemini, a wind farm in the north of the Dutch North Sea, will also deliver radar data from within their wind farm. This is important to see the regional difference in fluxes in time between these two locations.Measurement data are processed and analysed by TNO and WR (Wageningen Research), with UvA (University of Amsterdam) having the role of storing and disseminating the radar data. UvA will also use the radar data to feed their national level bird migration model that is currently deployed with the 'Start/Stop' project to predict when the birds will migrate.

Resultaat

Result 1 is a state of the art measurement set-up to capture nocturnal bird movements in and around wind farms. Result 2 will be the measurements, with conclusions and insights into bird fluxes (the total number of birds passing through an area), flows (the number of birds flying through an area during a minute or an hour) and behaviour in and around the wind farm. Result 3 is a computer model for migrating bird behaviour in and around wind farms and will include numbers (flux) and collisions.

Specifically the model will allow the experimentation with different mitigation strategies, evolutions and alternatives to the current 'Start/Stop' approach. Result 4 will be the options and alternative strategies for managing wind farm operations during migrating bird movements. Included in this will be an analysis into the potential pros and cons of the different options, from an ecological, security of supply and financial perspective. Result 5 is the detailed discussion and project result sharing with the key stakeholders that are involved with decision making on how to implement innovations to improve the coexistence of offshore wind farms with nature.

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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