

Offshore Floating Storage of Energy and Transfer

Publieke samenvatting / Public summary

Aanleiding

The purpose of the project is to develop an overall integrated system in which the infrastructure for hydrogen and/or ammonia are included, which will revolutionise the way in which the offshore wind sector and relevant (energy-intensive) industries currently operate. This system is called OFFSET: Offshore Floating Storage of Energy and Transfer. We will develop a floating hydrogen and/or ammonia production and storage facility that is connected to an adjacent wind farm and that will operate continuously. The produced hydrogen can be transported to shore through existing oil and gas pipelines, whereas the produced ammonia can be transported to end-users by shuttle tankers. This easily scalable solution will decrease the cost of green fuels and thereby increase their accessibility. The aim is to provide a flexible solution that answers to the needs of the global energy transition and corresponding scenarios regarding energy carriers. During the project, the production of hydrogen directly from seawater is being researched in order to provide a long term strategy for increasing efficiency and affordability.

Doelstelling

In order to meet the climate goals of 2030 and 2050, the deployment of (offshore) wind farms will need to increase. It is projected that the Netherlands will produce 43 GWh of energy through offshore wind deployment by 2050. However, generating this amount of energy through renewable energy sources such as wind comes with several obstacles, due to the variability caused by weather dependence and the limited capacity of the

Projectinformatie / Project information

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MOOI622006

Subsidiebedrag / Grant amount

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Algemene informatie / General information

Penvoerder / Secretariat

Switch2 B.V.

Publicaties en materialen / Publications and attachments

- 28.03.2024

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Voortgangsrapportage 1

- 10.06.2025

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Voortgangsrapportage 2

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grid. It is inevitable that periods of surpluses and scarcity will alternate if these obstacles are not addressed, causing further grid congestions and losing valuable energy. At the same time, the Netherlands is facing the challenge of physical scarcity, especially in relation to offshore wind farms to be deployed at the North Sea.

Korte omschrijving

The project will be carried out on the basis of 6 milestones. Each individual milestone includes several results to be achieved through research and development activities carried out by the relevant consortium partners. The activities can grossly be distinguished as follows: - Direct use of seawater for electrolysis (lab validation) - Marinization and optimization of offshore floating hydrogen production, while ensuring safety standards and efficiency of production (lab validation and hydrodynamic engineering studies) - Engineering and prototyping of thermoplastic composite pipes - Basic structural design, small-scale prototyping and extensive hydrodynamic testing of the OFFSET facility

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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