



TKI WIND OP ZEE
Topsector Energie

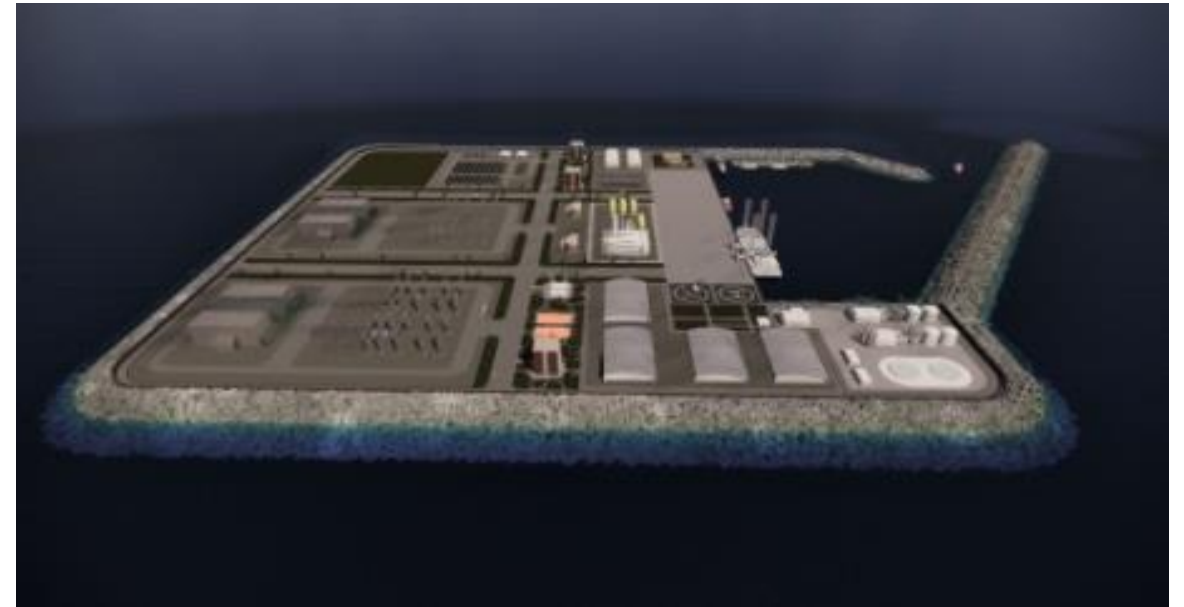
Matchmaking Day 2020

HybridEnerSeaHub JIP

13 February 2020



Energy islands in the north sea: Maintenance , Storage & Transport



- North Sea Wind Power Hub
- <https://northseawindpowerhub.eu>

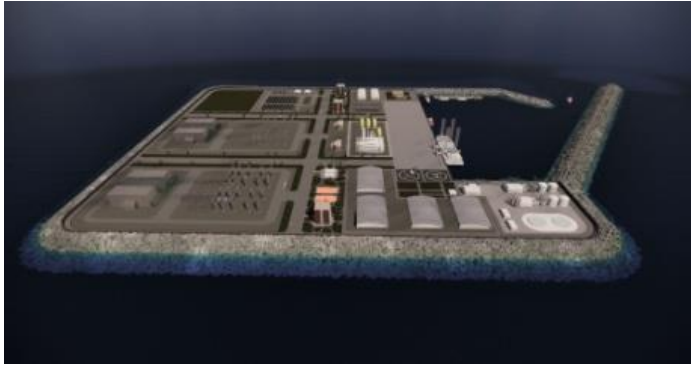
- IJVER
- <https://offshoreservicefacilities.nl>



Why not partly floating?



Investigate Feasibility of a hybrid Island in the North sea

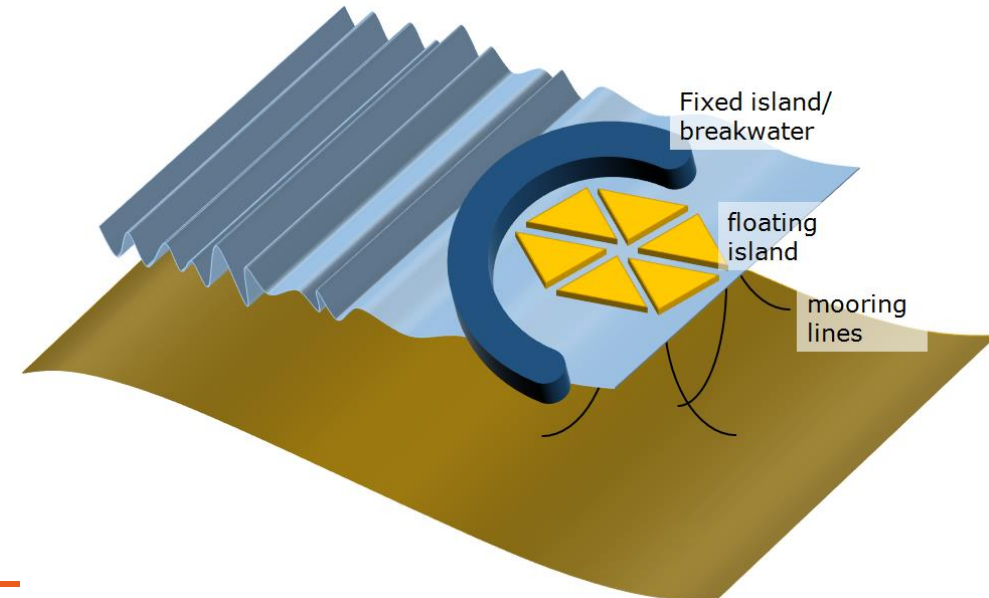


Different layout options possible



Example 1

Example 2



Project objective HyrbidEnerSeaHub JIP

*The objective of the HybridEnerSeaHub project is to **develop an initial design of a partly floating maintenance and energy storage island** and to investigate the **feasibility in the North Sea.***



DEME

Dredging, Environmental
& Marine Engineering



Rijksdienst voor Ondernemend
Nederland



Scope of Work HybridEnerSeaHub JIP

Workpackage 1: Design Basis

- 1.1 Investigate possible future functionalities of the island
- 1.2 Motion criteria related to various activities
- 1.3 Initial metocean dataset
- 1.4 Initial risk study

Workpackage 2: Fixed/Floating Hybrid Design Concept

- 2.1 Conceptual design floating island & mooring
- 2.2 Coastal study
- 2.3 Motion analysis

Workpackage 3: Environmental impact evaluation

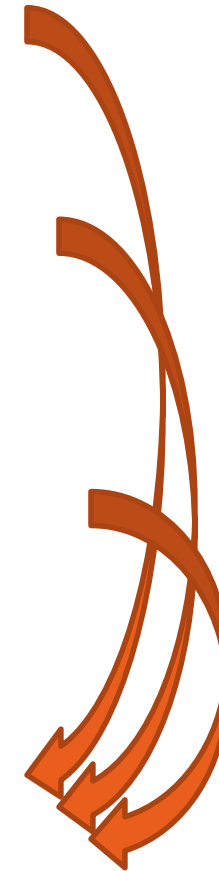
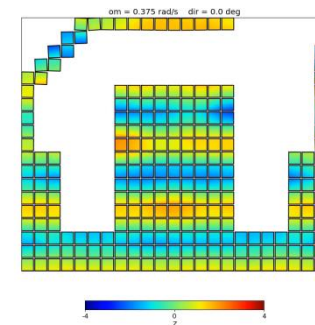
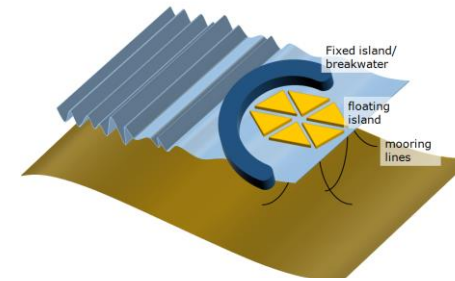
- 3.1 Inventory of potential ecological functions of a hybrid island
- 3.2 Ecological risk assessment for sea life
- 3.3 Advice on design from an ecological perspective

Workpackage 4: Performance evaluation of the Hybrid Design Concept

- 4.1 Apply Bathymetry/Coastal study
- 4.2 Calculate Hydrodynamics
- 4.3 Structural & Fatigue analysis (hull, mooring & couplings)
- 4.4 Model test hybrid island
- 4.5 *Harbour safety study (optional)*
- 4.6 *Model test floating island with (underwater) breakwater (optional)*

Workpackage 5 : Business case evaluation

- 5.1 Life cycle assessment of functionality
- 5.2 Cost estimates for the islands



Project Schedule

- The project duration will be 2 ½ - 3 years.
- Project budget approximately 1 million euro
- The project will have meetings with the participants every half year
- Project started Q4 2019 run till Q4 2022

Project open to join for interested parties

