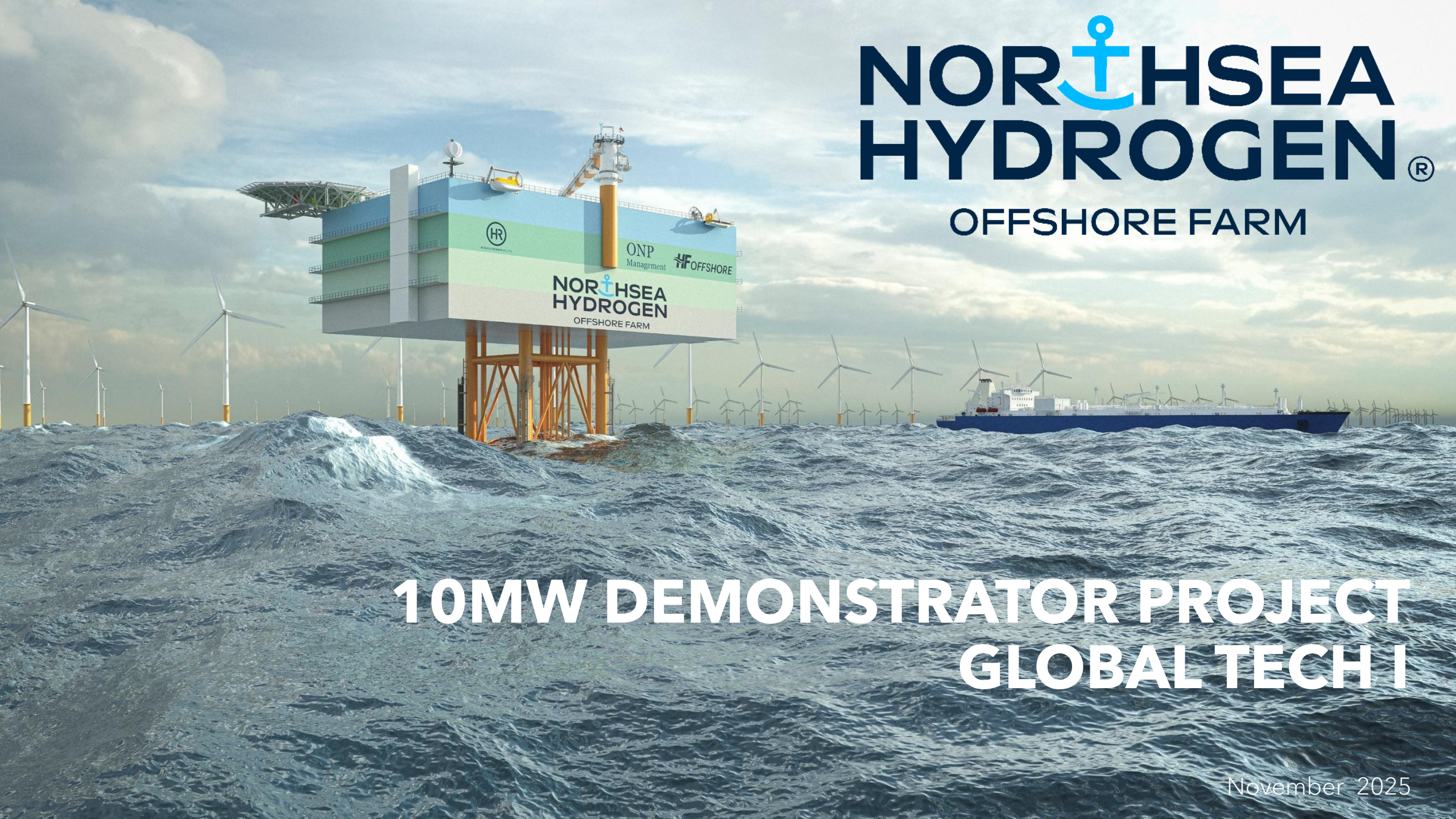


The image is a conceptual rendering of the North Sea Hydrogen Offshore Farm. It features a large, multi-level offshore platform with a blue and green color scheme, supported by a complex orange steel structure. The platform has various equipment, including a helipad and cranes. In the background, a vast field of white wind turbines stretches across the horizon under a cloudy sky. A large blue and white supply ship is visible in the distance. The foreground shows the rough, blue surface of the ocean with white-capped waves.

NORTHSEA HYDROGEN[®]

OFFSHORE FARM

**10MW DEMONSTRATOR PROJECT
GLOBAL TECH I**

November 2025

WHO WE ARE

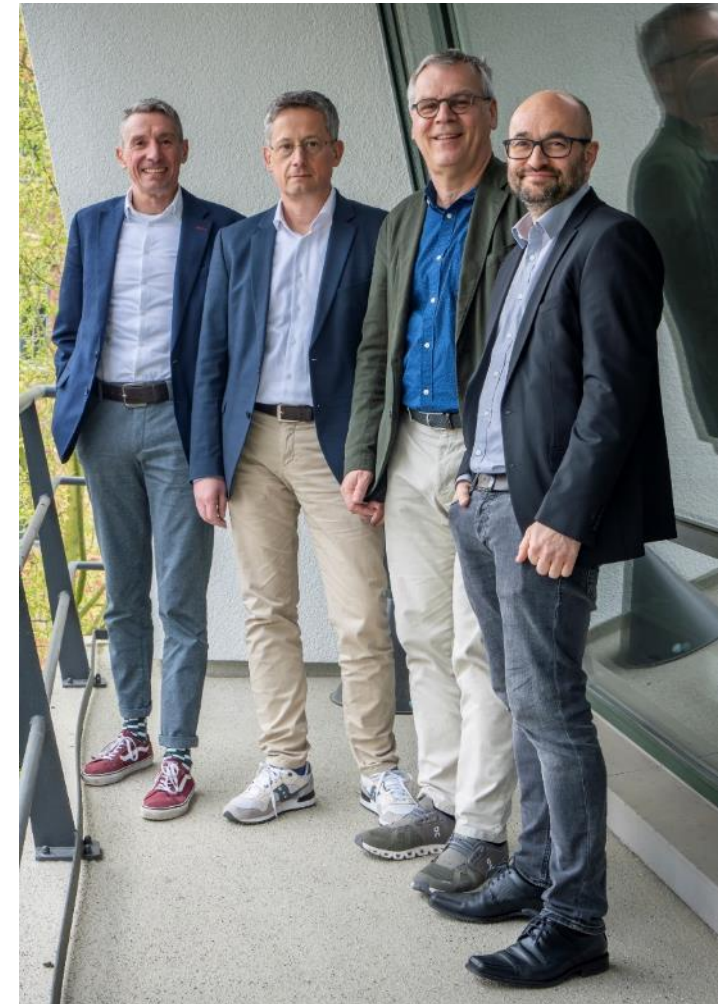
ONP
Management



HF OFFSHORE

- ⚓ **Andreas Wellbrock** founded a boutique management office, enabling the establishment of a hydrogen economy in the north of Germany.
- ⚓ **Martin Rahtge** and his team at ONP have participated in the planning and realization of several offshore windfarms in Germany, like Merkur, Arcadis Ost 1, HeDreht and others.
- ⚓ The Rönner Group, represented by **Thorsten and Marcus Rönner**, is actively driving the development of the hydrogen platform with their experts from BVT, EnPro and Lloyd-Werft.
- ⚓ **Captain Heiko Felderhoff** has established HF Offshore with a team of experienced maritime and logistics experts. They combine many years of experience in shipping and offshore operations.

NORTHSEA
HYDROGEN®
OFFSHORE FARM



TOWARDS OFFSHORE HYDROGEN IN THREE STEPS



Step 1 – Demonstrate: Pilot of offshore electrolysis

2026+

Proof of technical concept as foundation for further scaling

- Start of operation in 2-3 years
- To last for min. 3 years of testing and research with subsequent commercial utilization

H2-DEMONSTRATOR



Step 2 – Improve: SEN-1 (pre-commercial scale < 1 GW)

2030s

Optimise technology and get ready for commercialisation

- Start of operation in 6 - 8 years
- At least 20 years of operation



Step 3 – Invest: Several Gigawatt offshore electrolysis (commercial use)

2040s

Make use of the full potential of offshore hydrogen

- At least 25 years of operation at commercial scale
- Legal inclusion of mixed connection concepts

OUR PARTNERS



Bosch Manufacturing Solutions | BMG



OUR CONCEPT

- ⚓ Demonstration project to prove the **feasibility of H2 production** in harsh offshore environment
- ⚓ **Self sufficient and autonomous** platform
- ⚓ **Scalable Modular design** to implement at larger projects
- ⚓ Deployment within **existing OWF** for power supply and operational support

What we can achieve:

- ✓ A **proof of concept** including **ecological compatibility**
- ✓ **Performance data of Electrolysis** process coupled with fluctuating renewable energy
- ✓ **Compatibility assessment of auxiliary equipment** such as compressor and desalination plant with electrolyzers under fluctuating electricity and offshore environment
- ✓ Investigation of **offshore PV-power** to improve the business case and reduce platform-sizes
- ✓ **Visibility** for Offshore-H2-production and involved **industry partners**, paving the way to large scale projects

DEVELOPMENT TIMELINE

2021 2024 2025 2026 2027 2028 2029 2030 2031



- ⚓ Conceptual design
- ⚓ Technical system integration
- ⚓ Establishing project consortium
- ⚓ Discussion with politics and authorities
- ⚓ Early project development
- ⚓ Approaching investors
- ⚓ Negotiation with offtakers

- ⚓ Basic/Detailed design
- ⚓ Procurement
- ⚓ Funding
- ⚓ Permitting

- ⚓ Detailed design
- ⚓ Manufacturing
- ⚓ Engineering
- ⚓ Permitting
- ⚓ T&I
- ⚓ Commissioning

- ⚓ Testing/Research
- ⚓ Production
- ⚓ Operation
- ⚓ Maintenance



Site allocation



Project-FID



Hydrogen production



Dismantling

ASSOCIATED RESEARCH PROJECTS

Wind2Hydrogen - University of Bremen (IALB) and University of Applied Sciences Bremerhaven - HR as partner / NorthH2 as associated partner

- ⚓ Modelling of all required sub-systems for offshore hydrogen production
- ⚓ static simulation of the isolated grid-structure at sea
- ⚓ dynamic research of interaction between sub-systems
- ⚓ Definition of technical risks during offshore operation
- ⚓ Economics of Offshore Hydrogen Production

MeerH2 - University of Bremen, Field of Advanced Ceramics und Field of Technical Thermodynamics – NorthH2 as associated partner

- ⚓ Optimization of seawater desalination and brine management for offshore hydrogen production
- ⚓ MeerH2:MemMat: Membrane materials – Development of ceramic membranes
- ⚓ MeerH2:MemDes: Membrane distillation – Process and system development
- ⚓ Simulation of membrane performance

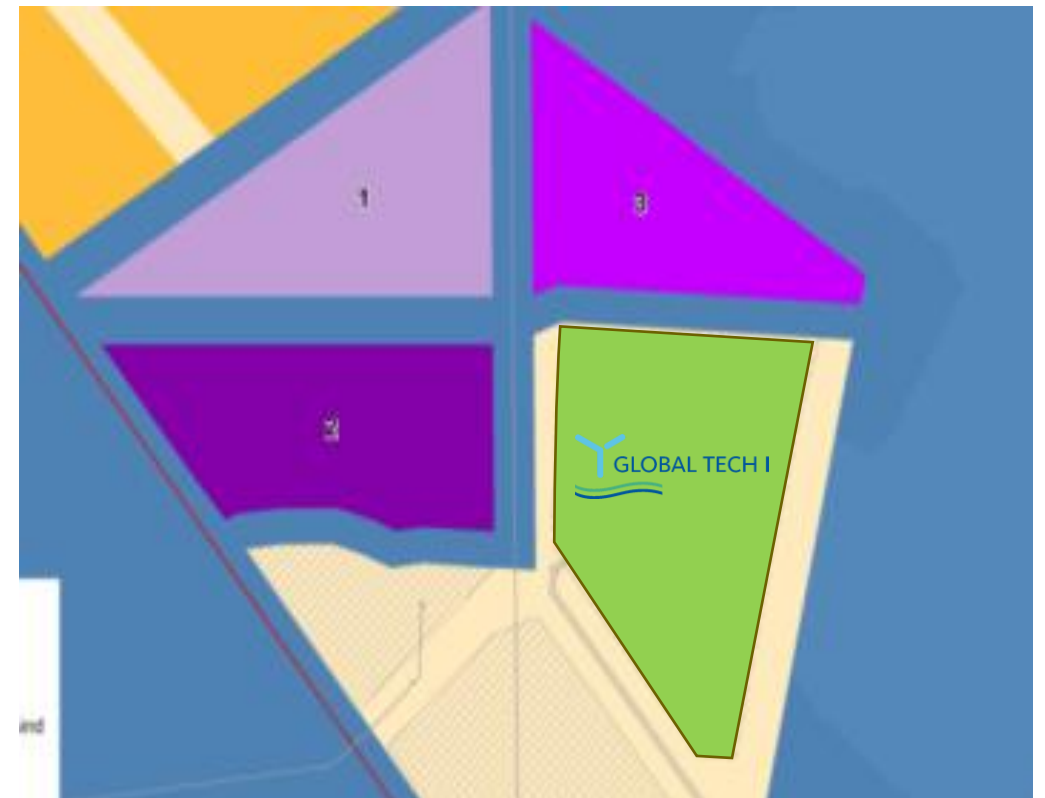
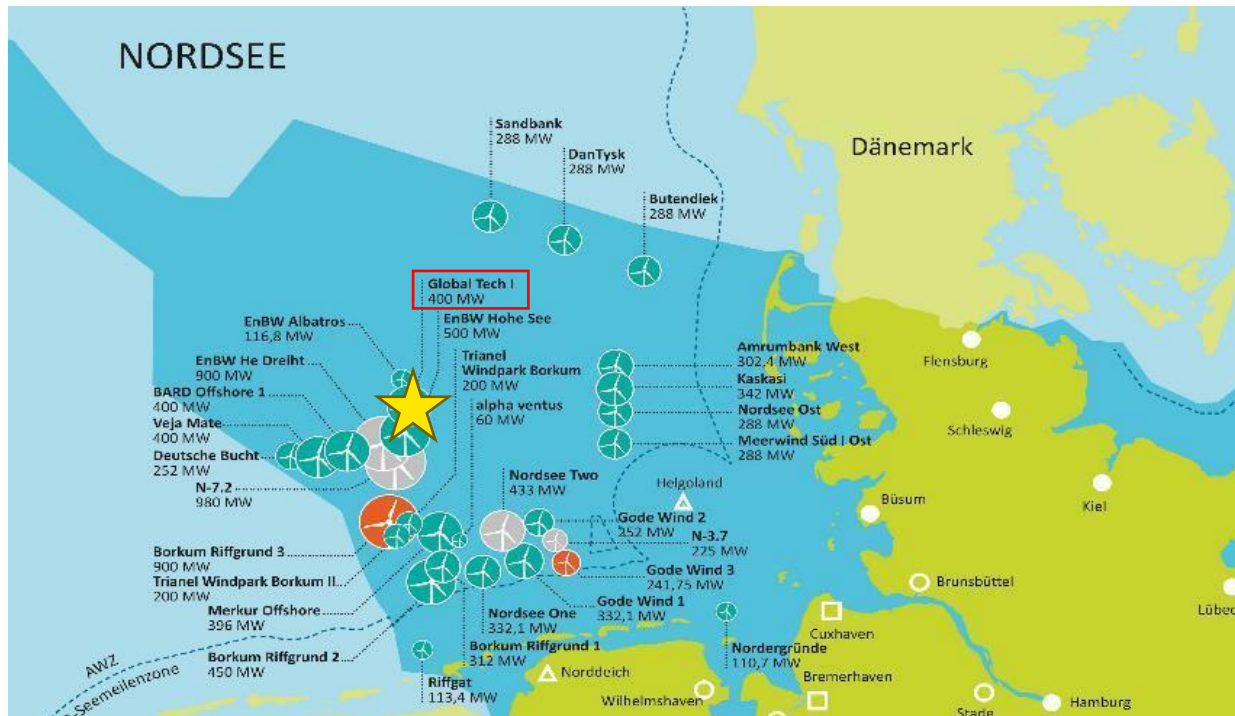


CONCEPT: H₂- DEMONSTRATOR



PROJECT LOCATION

- ⚓ Positioning of Demonstrator-Platform within **OWF Global Tech I** in German EEZ
- ⚓ Utilization of **existing infrastructure** (foundation, cables, SCADA), as well as safety zone and sea surveillance
- ⚓ Usage of **existing offshore O&M-logistics** (CTV and technicians)
- ⚓ **Power-Supply** from Windfarm **via Substation** (OSS)

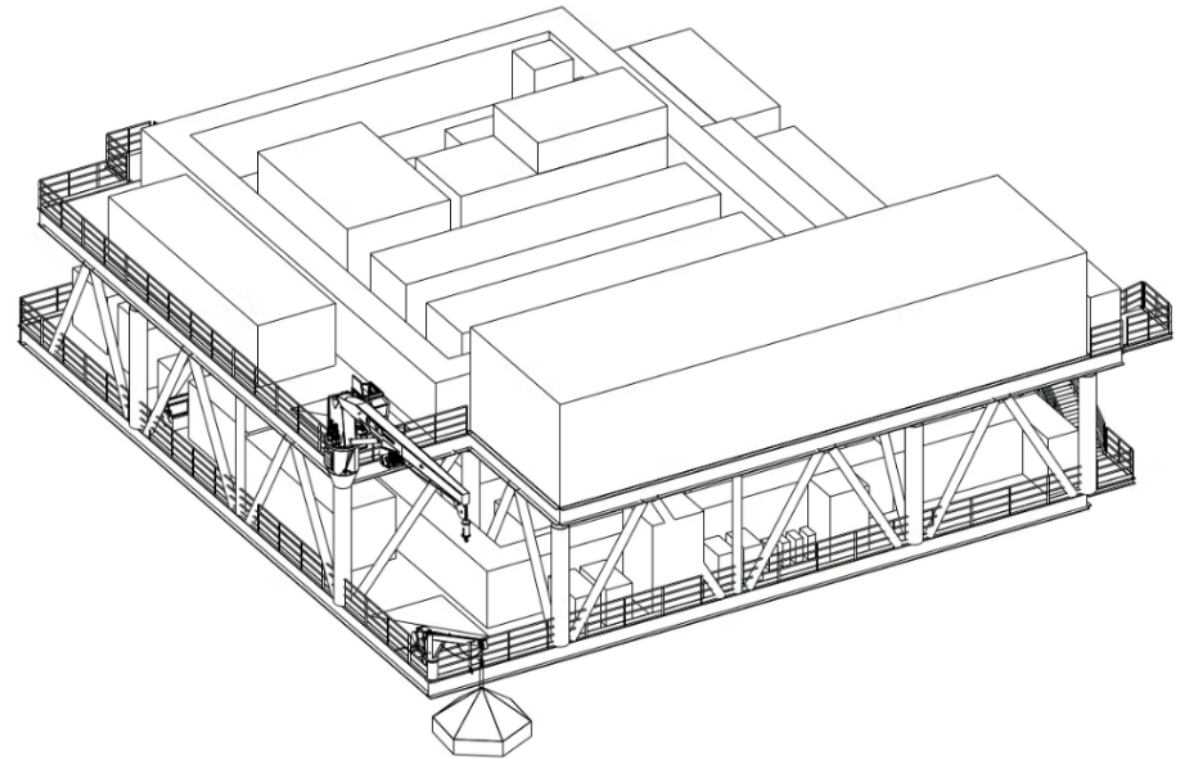
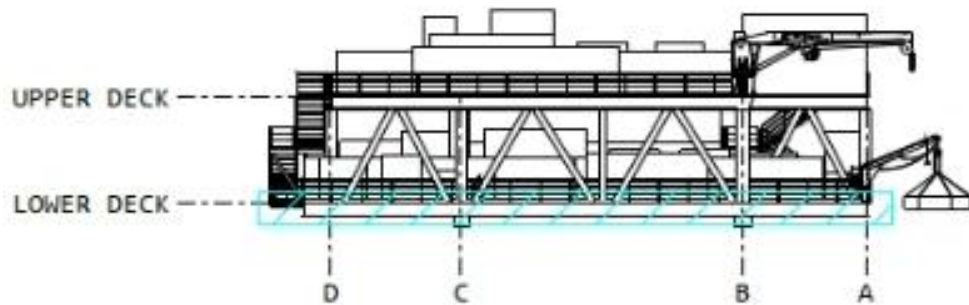


UTILIZING EXISTING INFRASTRUCTURE

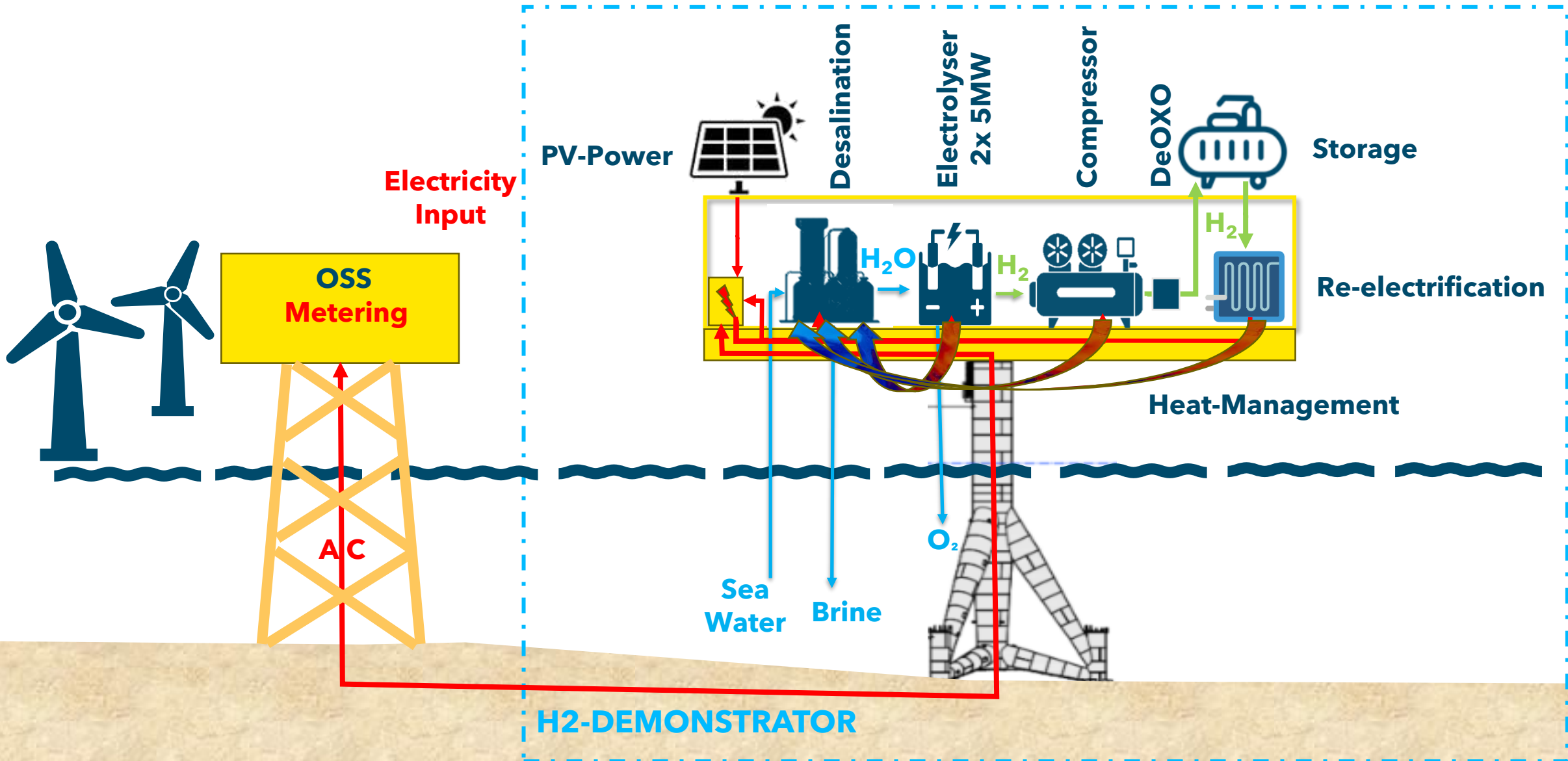


H2-PLATFORM DESIGN

- ⚓ Uniform support grid
- ⚓ Simple realization of foundations at any position
- ⚓ Flexible utilization of the area
- ⚓ Dimensions: 25m x 27m
- ⚓ Height above flange: 18m
- ⚓ Total weight: ca. **900to**



TESTING OFFSHORE ELECTROLYSIS



THE HYDROGEN FUTURE
STARTS NOW!

WHAT'S IN IT FOR YOU?

LET'S TALK!

**NORTHSEA
HYDROGEN®**
OFFSHORE FARM



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