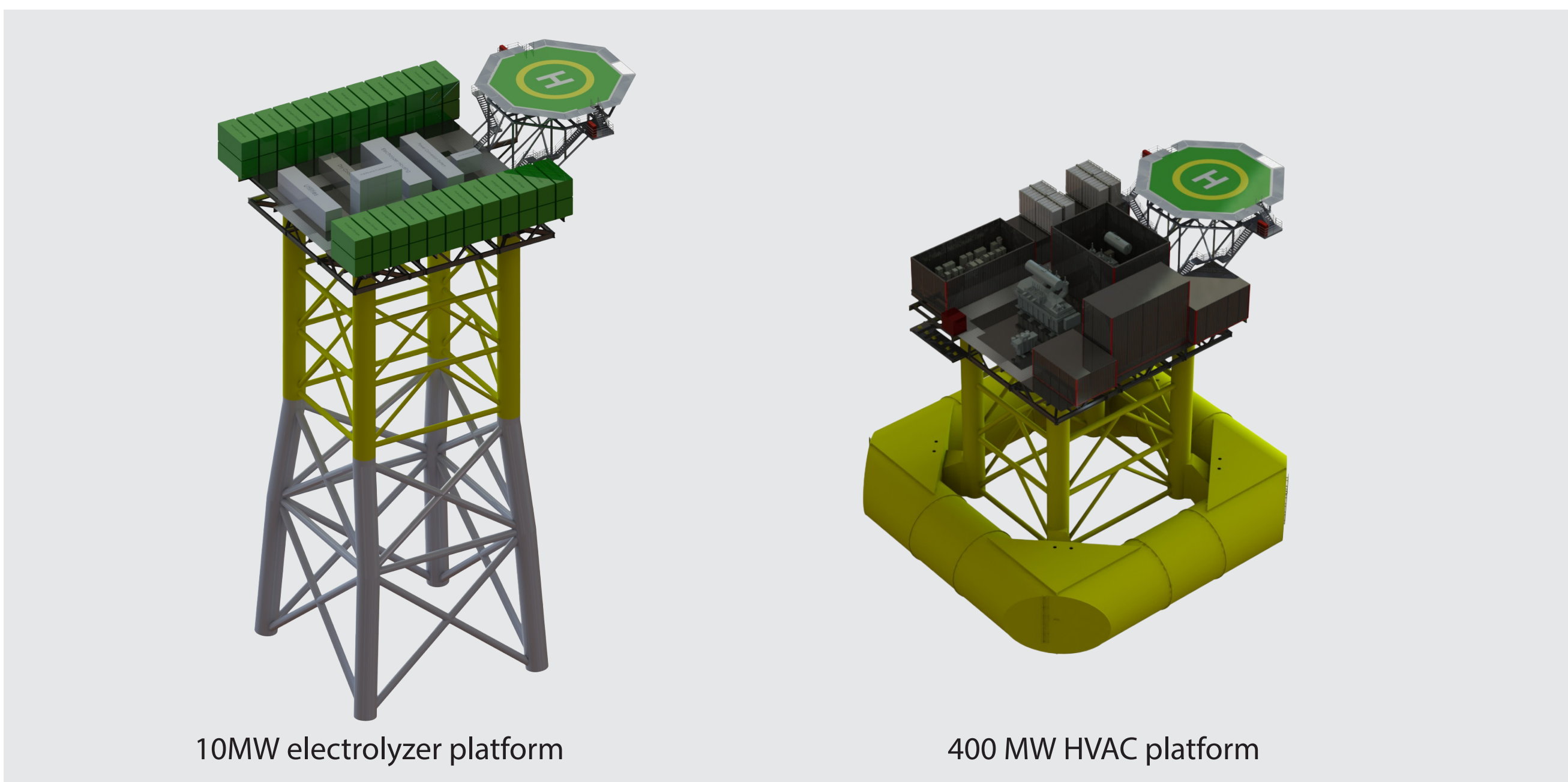


# DEVELOPMENT OF A MODULAR AND PRODUCTION-OPTIMIZED MULTI-PURPOSE PLATFORM

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## MOTIVATION

The idea of the MuWIN project is to develop a modular, standardized, scalable and production-optimized multi-purpose-platform that can be adapted for various potential offshore wind farms. The platform can function for example as an AC, DC or hydrogen platform.

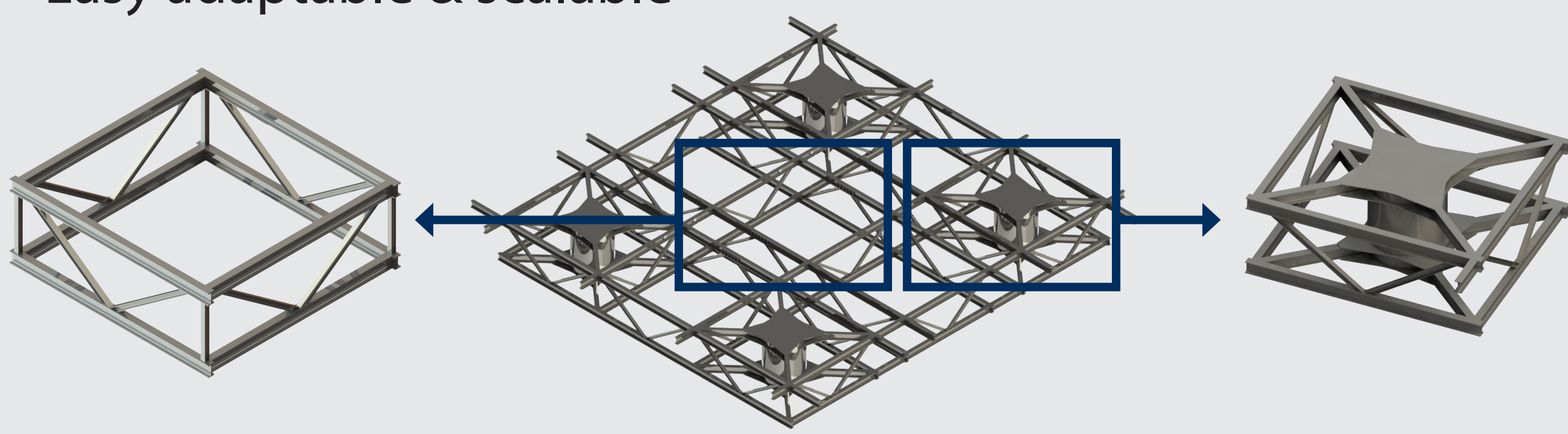


## TOPSIDE DESIGN – THE IDEA

- Multi-Purpose (AC, DC, H<sub>2</sub>)
- Scalable and adaptable
- Modularized (LEGO<sup>®</sup>-block concept)
- Easy design

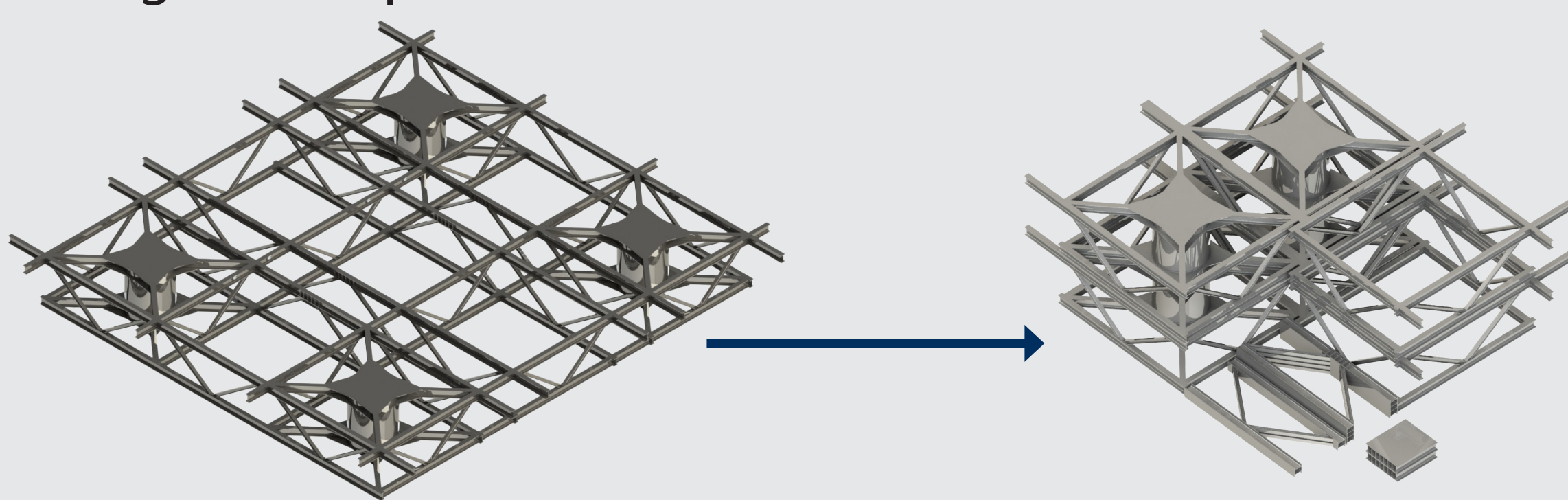
## TOPSIDE DESIGN – LATTICE CUBES

- (Semi-) automatic manufactured H-Beams
- Integrated substructure interface
- Flexible arrangement
- Easy adaptable & scalable



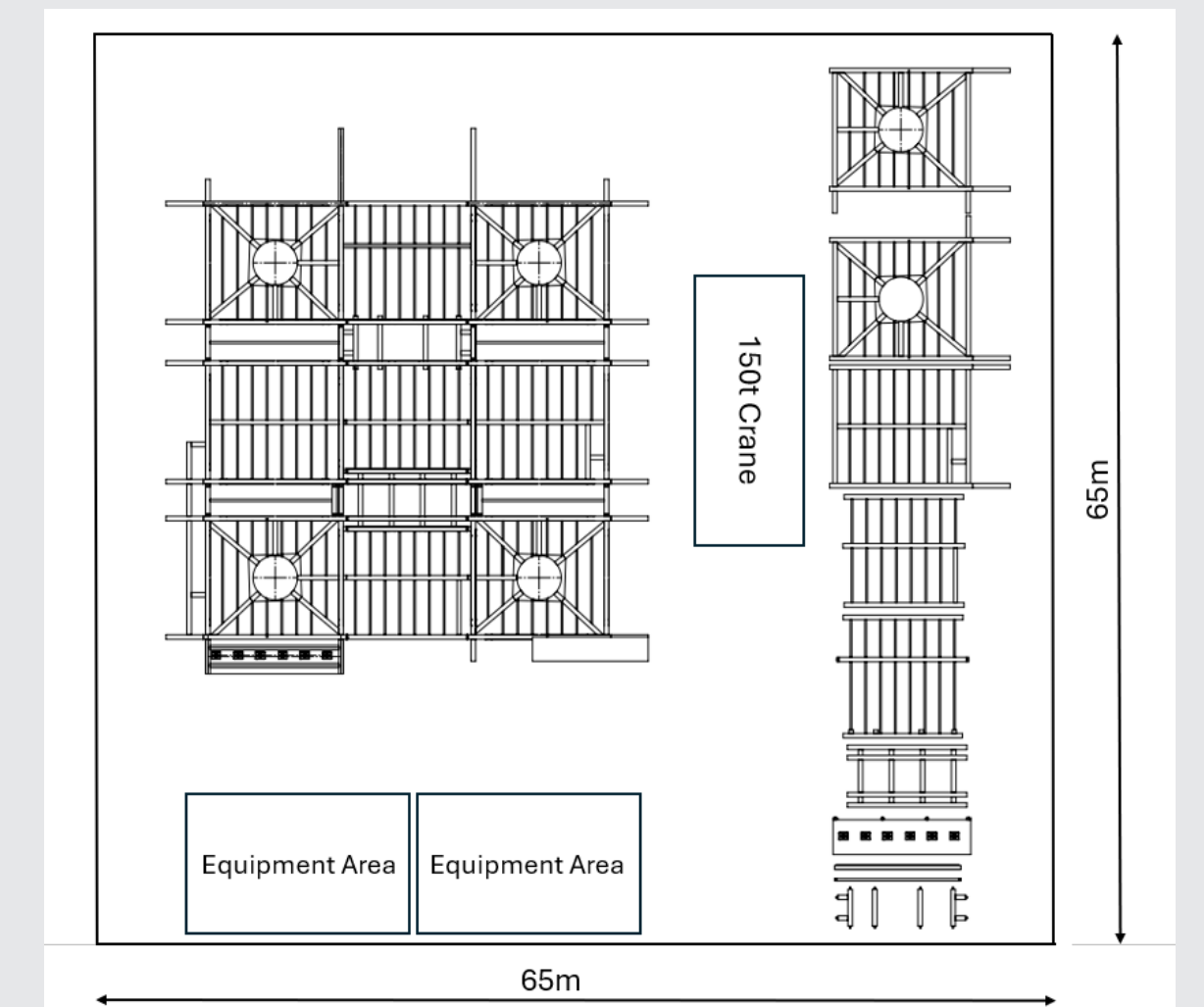
## TOPSIDE DESIGN – TRANSPORT

- Transport of pre-assembled modules
- Maximum space: **20x20x10m**
- Equals: **32 TEU**
- Largest component: **10x10x5**



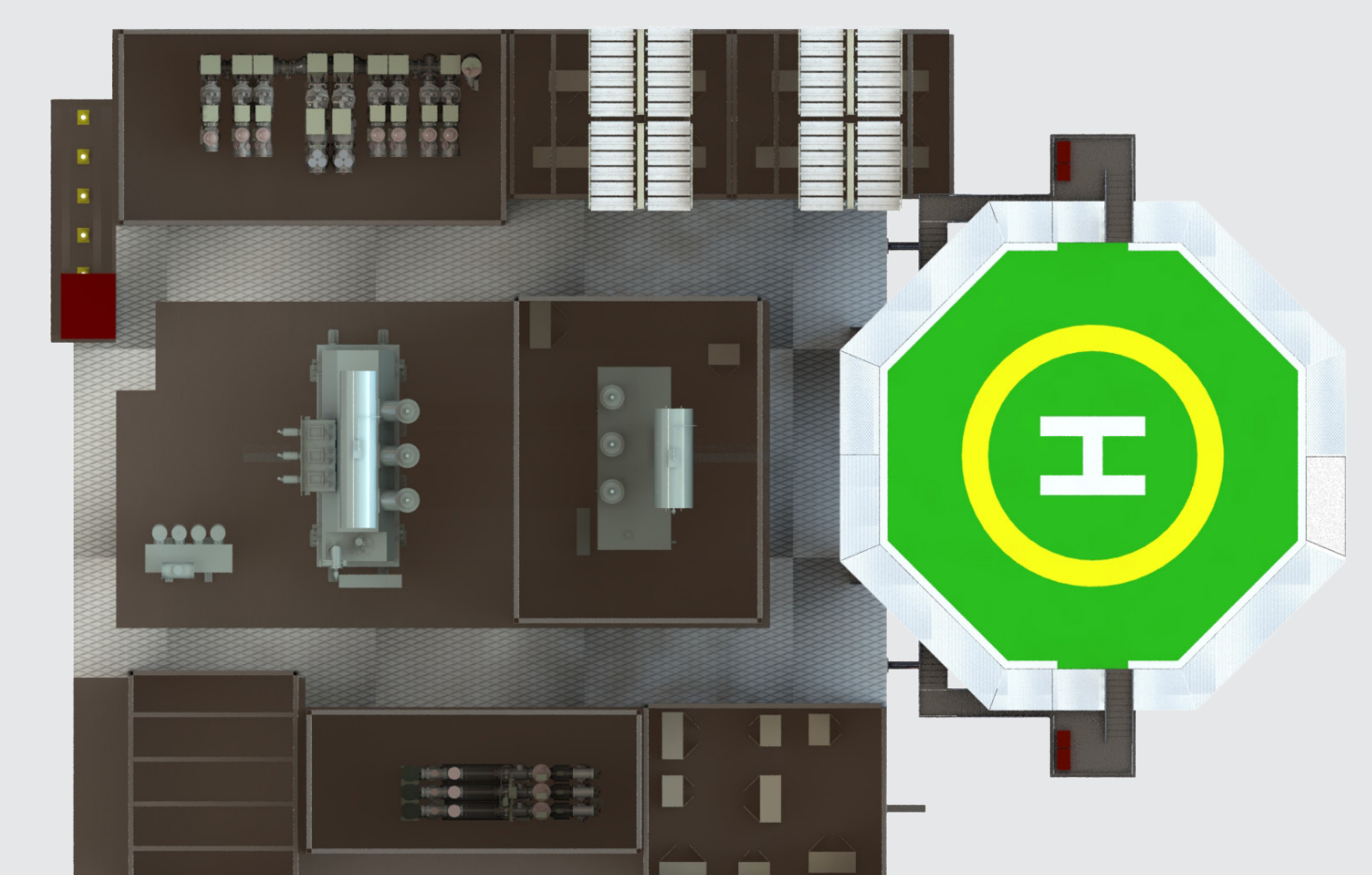
## TOPSIDE DESIGN – ASSEMBLY

- Dimensions assembled: **33x33m**
- Space for assembly: **65x65m**
- Crane capacity for assembly: **100t**
- ➔ High availability and low costs



## TOPSIDE USE CASE – 400MW HVAC

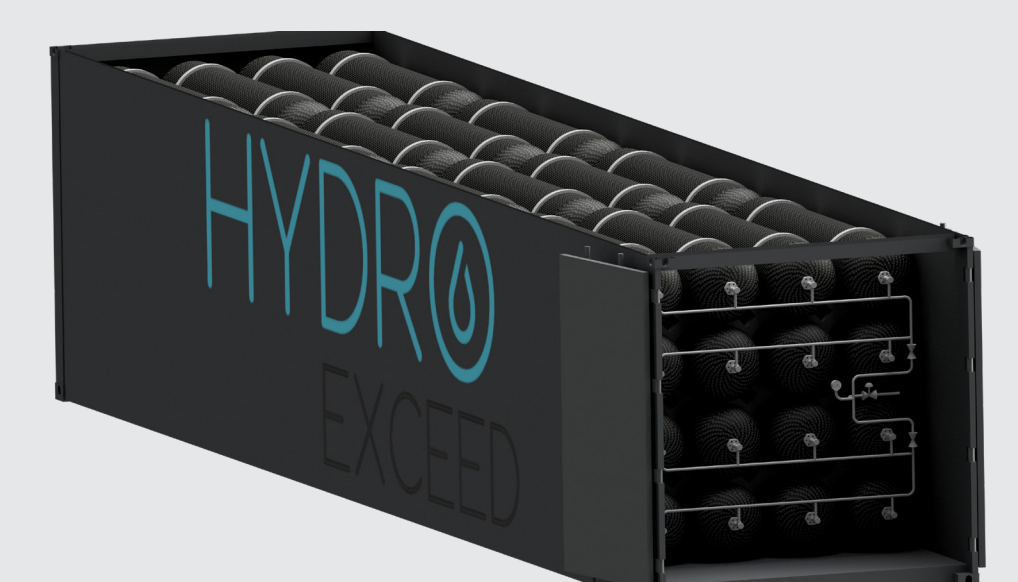
- Topside steel weight ~ **1000t**
  - Weight including 400MW AC < **4.9t/MW**
  - Average of existing platforms: **6.86t/MW**
- (based on a report from Offshore Wind Program Board)



400MW HVAC platform layout

## TOPSIDE USE CASE – 10MW ELECTROLYZER

- Analyzed location – **Talisk Side Scotland**
  - Peak power of wind farm – **400MW**
  - Electrolyzer used – **10MW**
  - Full load hours – **8000h (91%)**
  - H<sub>2</sub> production – **1500t/a**
- ➔ equals conventional fuel used in **12.000** cars per year in Germany



H<sub>2</sub> storage tank ©HydroExceed

## CONCLUSION & OUTLOOK

- GICON<sup>®</sup> and it's partners designed a multi-purpose topside
- Developed use cases are a 10MW electrolyzer as well as a 400MW HVAC platform
- Large scale wave tanks in planning

## ACKNOWLEDGMENT

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