FLOATING POWER PLANT

DeepWind - Floating Steel Substructures

FLOATING POWER PLANT

COMPANY BACKGROUND

THE COMPANY BASICS

David Nickols
Carsten Sonne-Schmidt
Claus Sivager
Kim Pajor
Nicolaj Holm Vang
Ulrikke Ekelund
Hans Vestergaard
Lars Banke
Graham Brown

CEO
Anders Køhler

Head of Finance
Hans Olsen

Head of Innovation:
Sarah Thomas

Head of Commercial and operation
Chris McConville

Engineering Manager
Pablo Cena

Organization (and SPVs)
Office is Denmark, UK and Spain

KEY DEVELOPMENT PARTNERS

SIEMENS

HAWE HYDRAULIK

AALBORG UNIVERSITET

Seasystems
A part of Scana

PRINCIPIA

TechnipFMC

DNV·GL

DTU Danmarks Tekniske Universitet

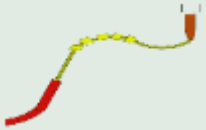
TECHNOLOGY BUILD UP

Technology Components

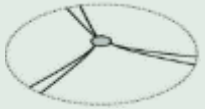
CORE

Commercially available wind turbine

Semi-submersible platform



Subsea grid or hydrogen riser

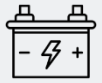


Spread or turret moored

OPTIONAL

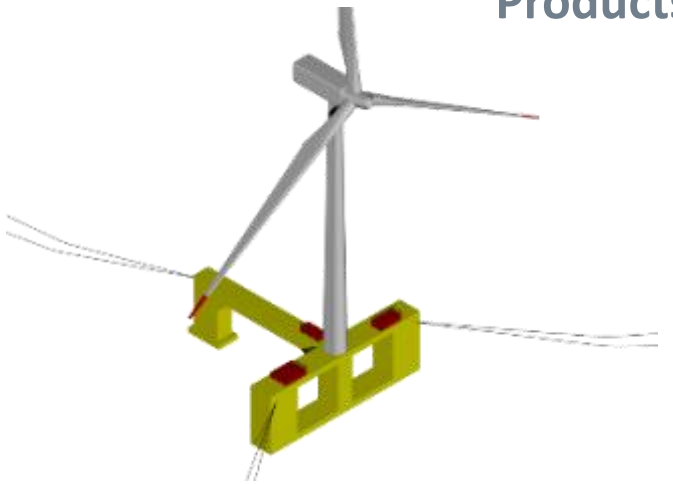
Patented WEC
1-3 MW wave power

Onboard Hydrogen for export or storage

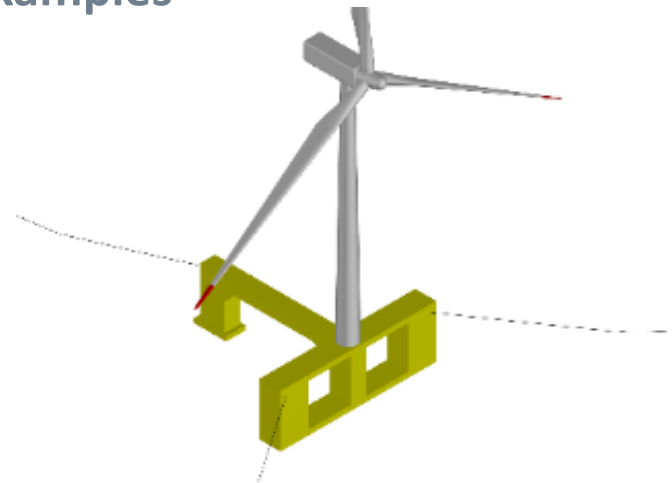


On board batteries for short-term energy storage

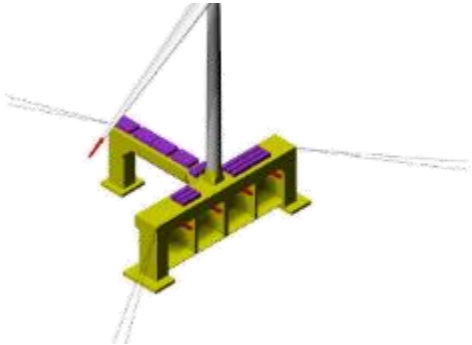
Products - Examples



Floating wind, battery and electrolysis for H2 export or dispatchable power



Floating wind foundation (with or without battery)



Floating wind, wave and H2 for dispatchable power or H2 export

Go-to-market Strategy – targeting high value markets

ENTRY MARKETS

Off-Grid
O&G electrification, AI data centers, CCS, etc.

Dispatchable renewable electricity

Weak Grid
Remote Islands and weak grid coastal areas

Dispatchable renewable electricity

SCALE MARKET

Green H2 export
Decentralized offshore green H2 production

Decentralized Green H_2

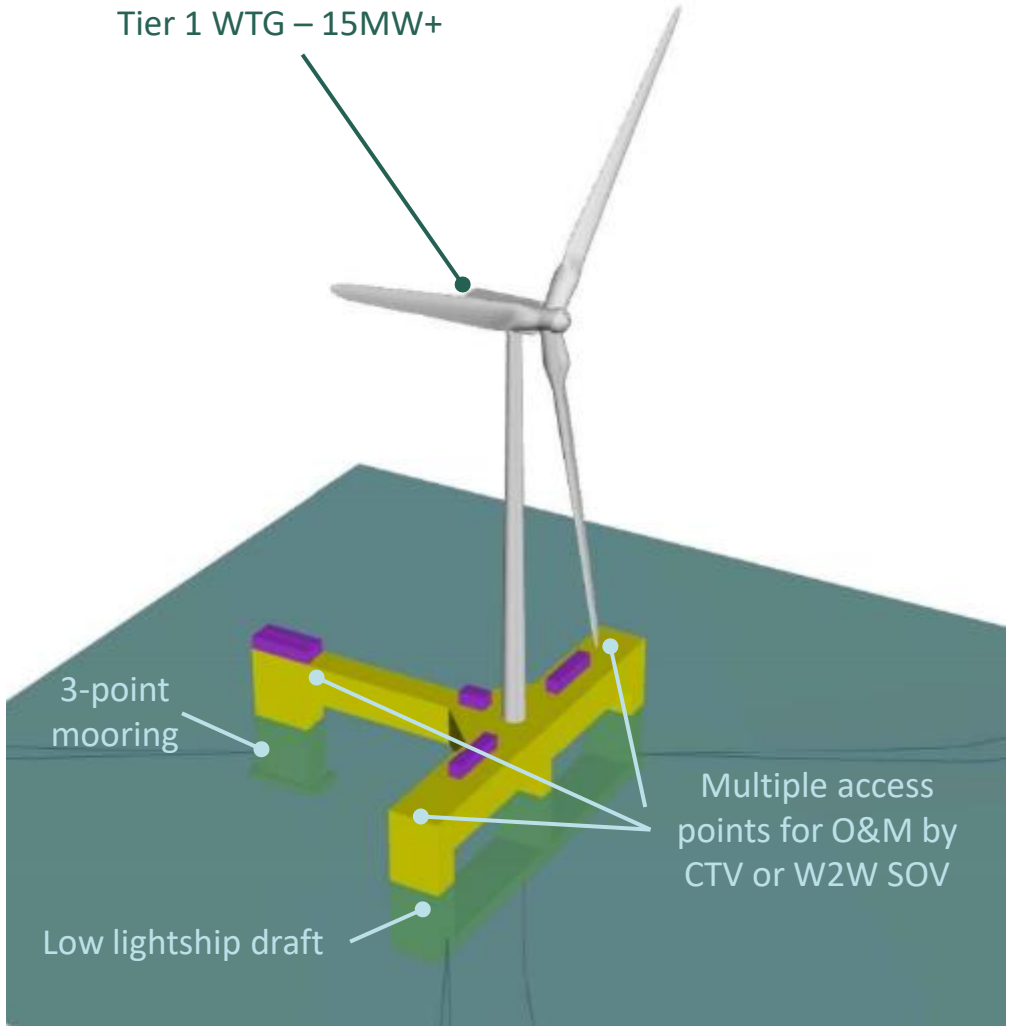
LONG-TERM MARKET

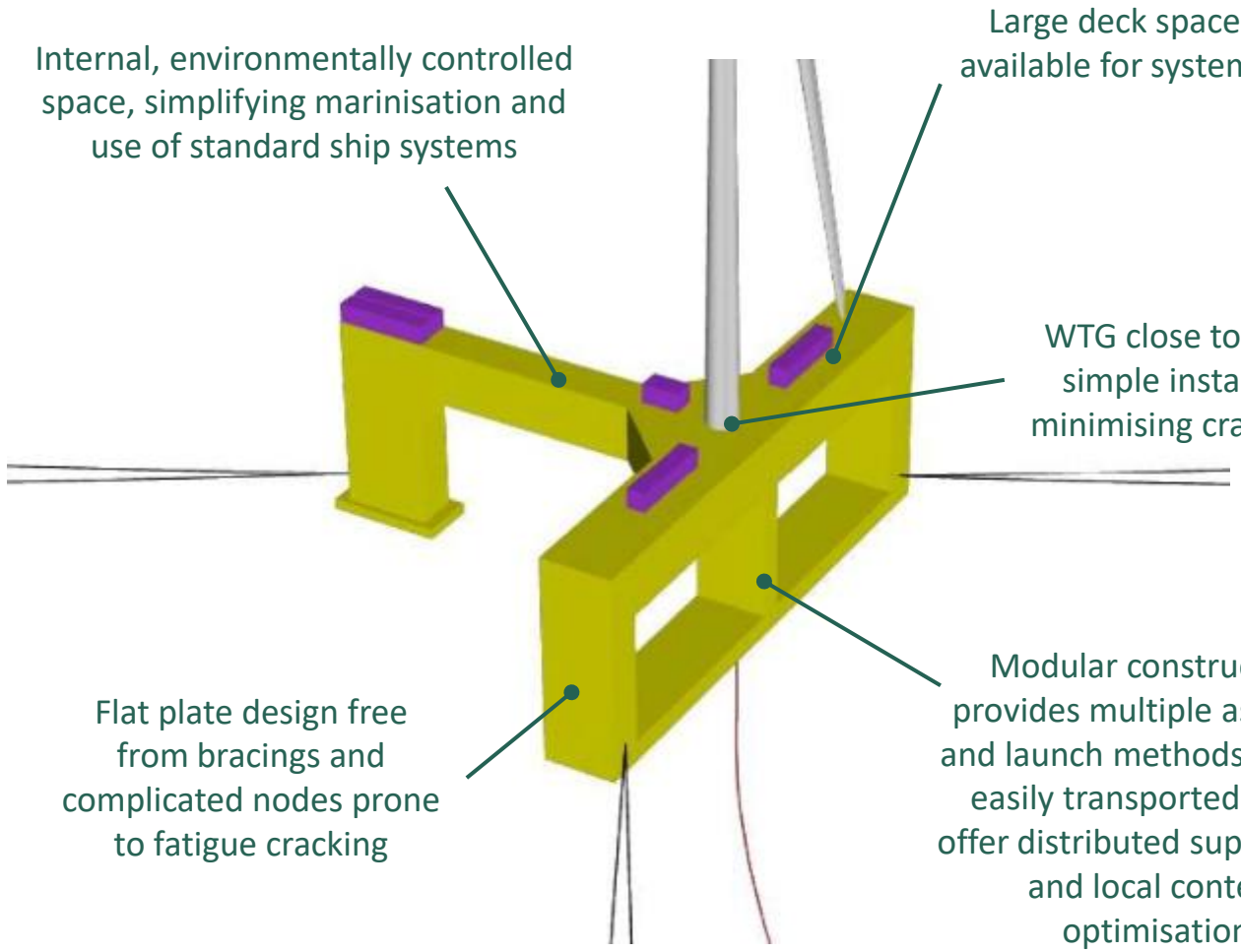
Large grid-connected Floating Offshore Wind
Not short term focus for FPP

LCOE

Sources: GWEC, Clarksons Renewables, 4C Offshore

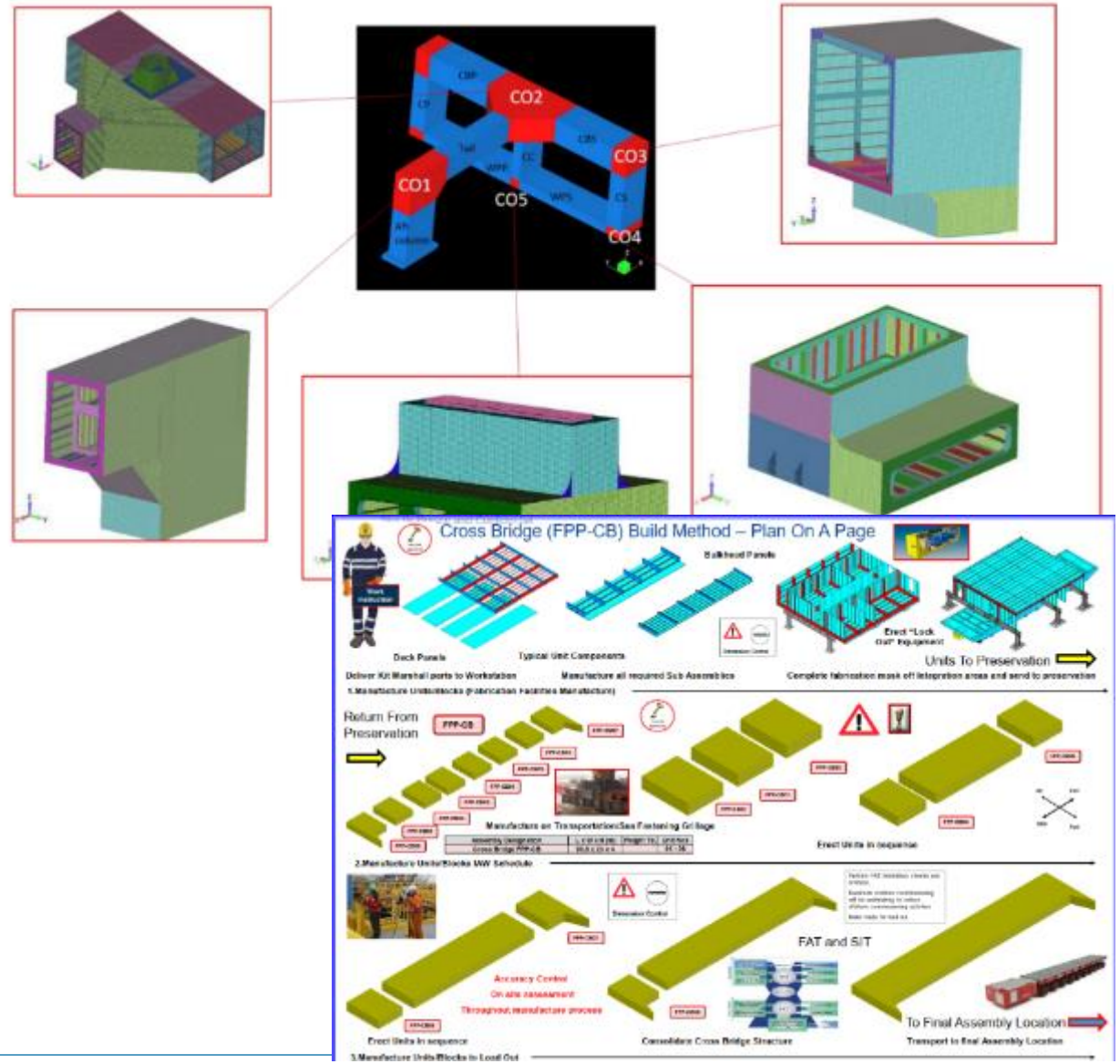
DESIGNED FOR MANUFACTURE, ASSEMBLY AND INTEGRATION





FABRICATION PHILOSOPHY

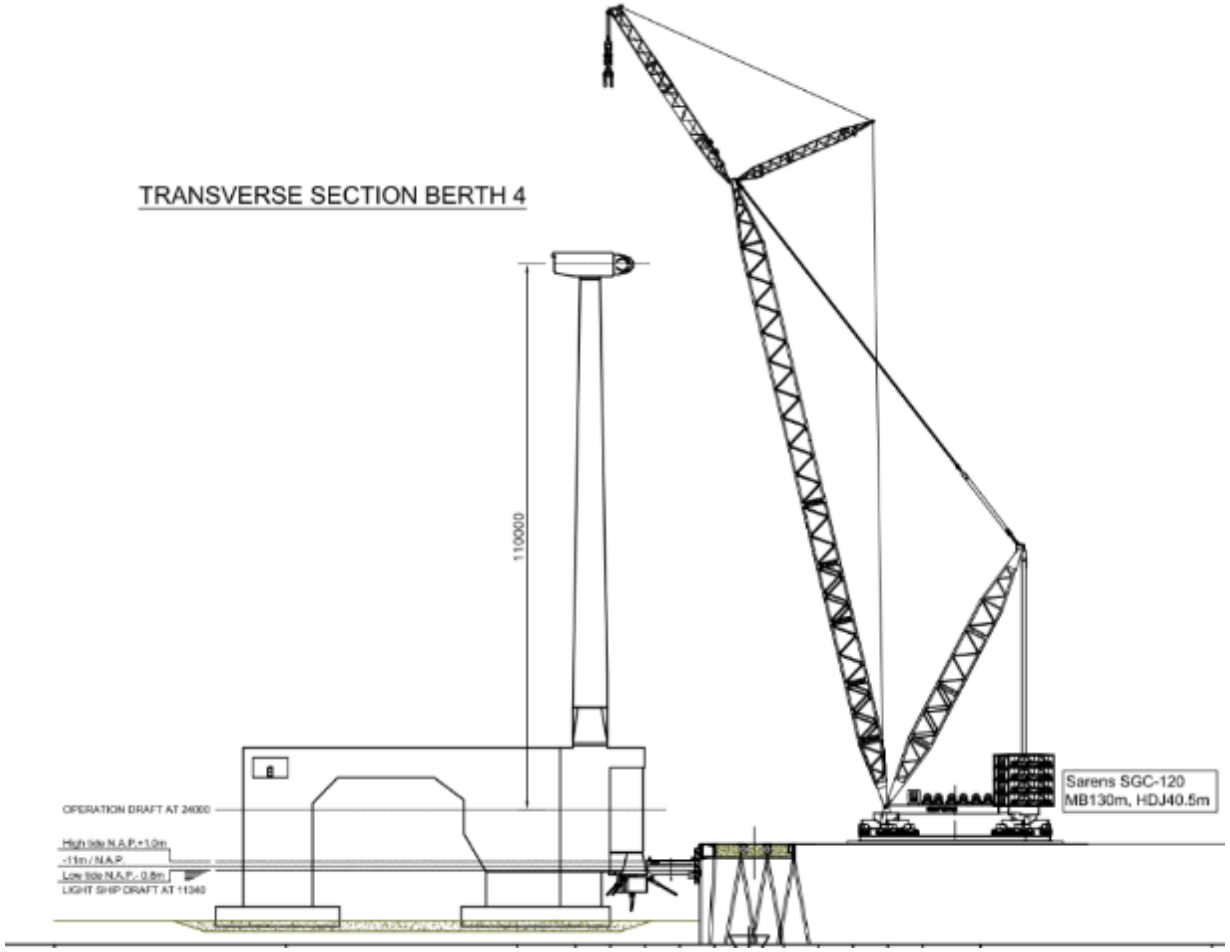
- **Fabrication & Assembly**
  - Modular panel construction
  - Modules can be sized to suit available facilities
  - Modules can be partially outfitted
- **Assembly**
  - Flexible options to suit facilities
  - Dry dock, quayside, slipway
- **Supply Chain Options**
  - Distributed supply chain, minimising bottlenecks
  - Local content optimisation



TRANSPORT AND FIT OUT PHILOSOPHY

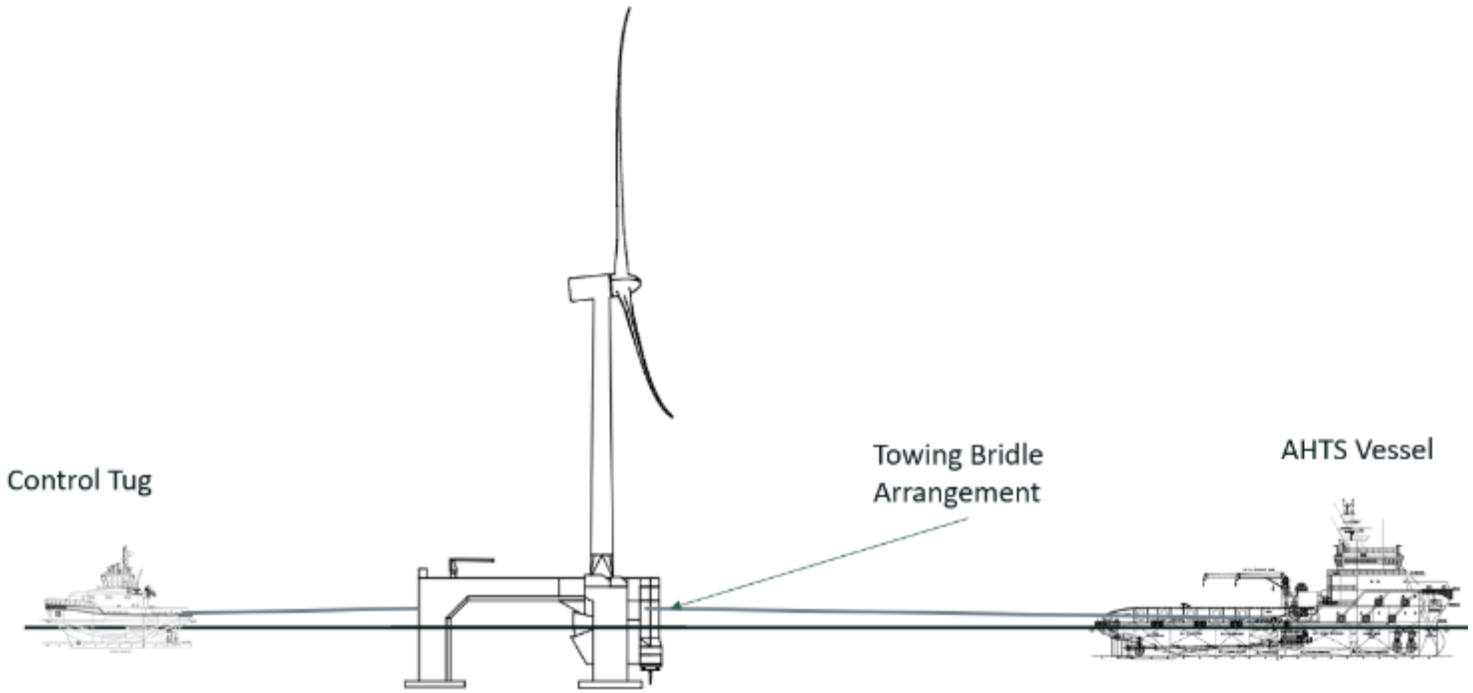
- **Transportation options**
  - Fabrication locally
  - Fabricated remotely and wet towed
  - Or modules fabricated and transported and assembled close to site

- **Outfitting**
  - Typically, partial outfitting (pipes, cable trays etc) outfitted in modules or at hull assembly
  - Final outfitting conducted near site
  - WTG is major item, installed with semisub on quayside
  - Cranage reach is minimised with WTG at “front”



INSTALLATION PHILOSOPHY

- **Set Up**
  - Anchors and mooring lines pre laid, with surface buoys
  - Tugs manoeuvre to port exit
  - Installation team prepare bridle and control lines
- **Tow Out**
  - Tow final assembly site to project site
- **Hook Up**
  - Retrieval and connection of mooring lines, two simple and one tensioned
  - Cable pulled in through I-tube



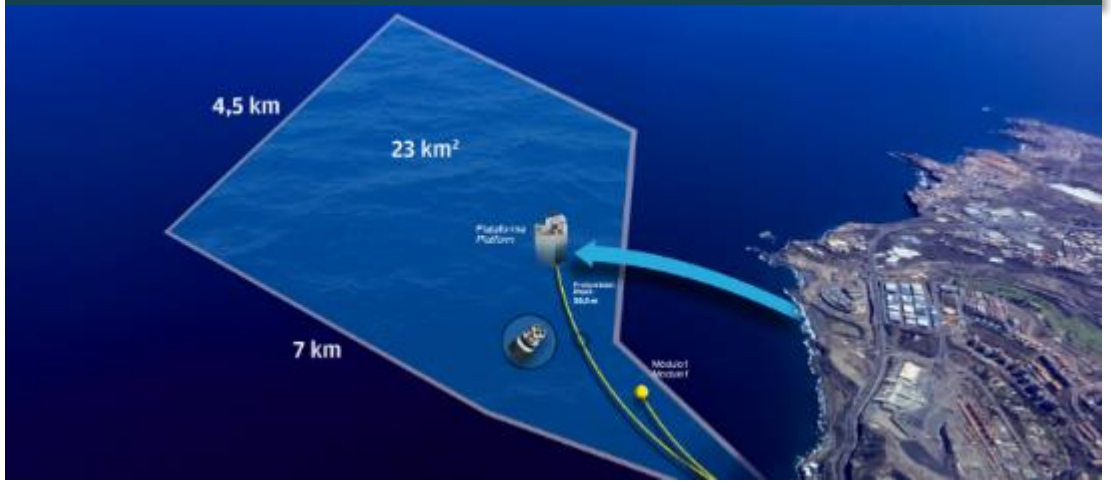
FLOATING POWER PLANT

P-DEMO (SEAWORTHY)

The first commercial project at Plocan (P-Demo) - Setup

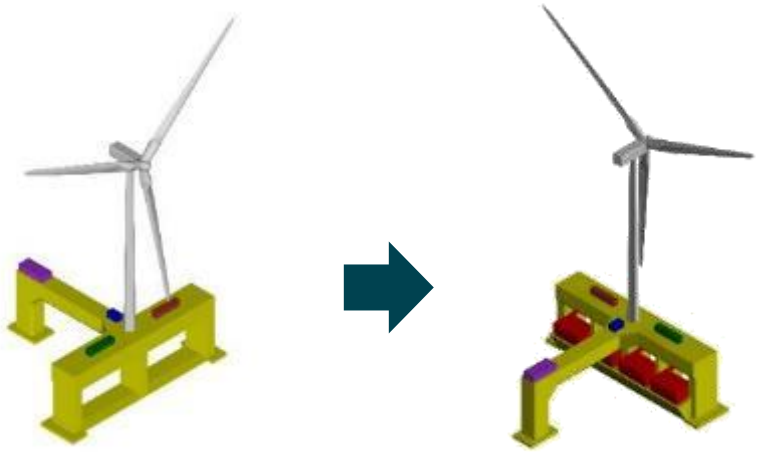
Plocan ecosystem offers ideal condition for the FPP P-Demo platform deployment due to optimal wind speed and wave conditions

Overview of PLOCAN facilities



- Offshore test site in Spain with 75-100 meter water depth
- Pre-consented and grid connected
  - EIA[1] submitted
- Access agreement secured
- Option agreement for 10 years secured (basis for lease)
- Assess to spot market, working on Corporate PPA and Balancing service agreement

Description and plan for the P-Demo project in PLOCAN



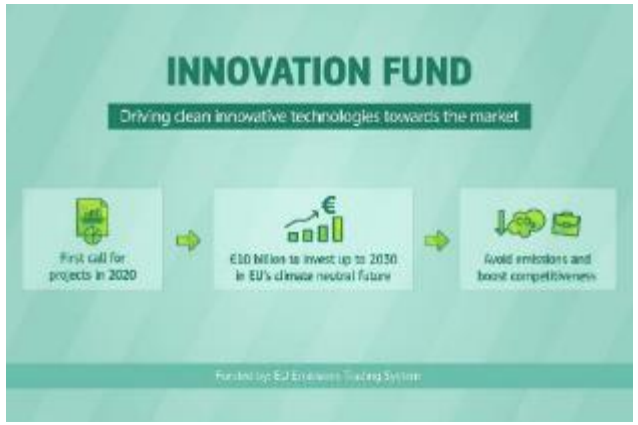
- Global flagship
- Ideal conditions for deployment of first commercial scale by 2028
- FPP will deploy a
  - 4.3 MW wind turbine
  - 0.8 MW wave energy capacity
  - 1 MW electrolysis, 600kg hydrogen storage and 400kW fuel cells
- Technology deployment in stages to validate all offerings and to de-risk
- To be operated for 10 years
- Stepping stone for several follow-up arrays

Source: The Company, Plocan website; (1) Environmental Impact Assessment, (2) Research and Development, (3) Power Purchase agreement

The first commercial project at Plocan (P-Demo) – support

PLOCAN ecosystem offers ideal condition for FPP P-Demo platform deployment due to optimal wind speed and wave conditions

26 m€ allocated from EU's Innovation Fund and grant support



- FPP has been awarded 26 m€ from INFU and are in the Grant Agreement (GA) preparation phase. GA singed 5/12/2023.
- FPP's project in Spain awarded 7.5 m€ from the Renmarinas fund. Link to INFU unknown.
- FPP awarded 1m€ from EUDP to improve numerical tools and validation
- First R&D[2] tax credits of €19.6m already certified
  - Total of €19-31m of R&D Tax credits expected
- Several more grant programs are being announced ideal for increasing grant support

End user and stakeholder board (names confidential)

- Oil and Gas Majors (Aker BP, Repsol, +1 confidential)
- Utilities majors (ESB, + 2 confidential)
- AirLiquide
- Capital Energy
- Islands Innovation network
- TechnipFMC

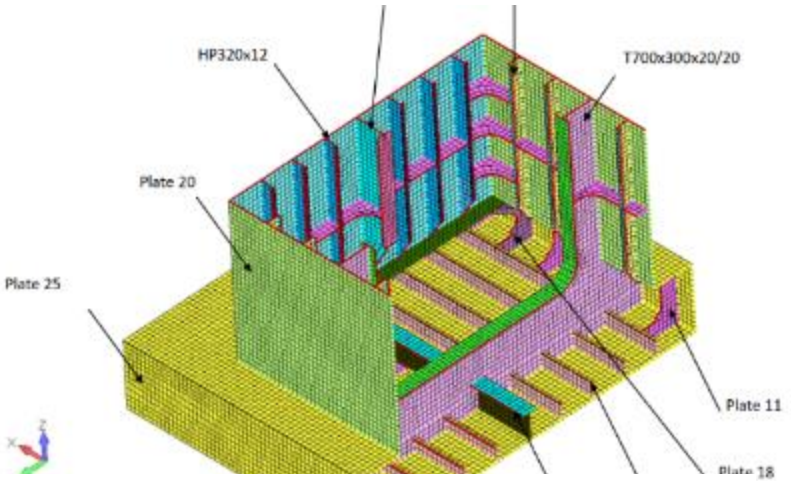
- The P-Demo project is expected to be the first project in the world at commercial scale to
  - Prove joint wind and wave power production
  - Prove a full offshore hydrogen setup with electrolysis, storage and fuel cell
  - Prove truly dispatchable renewable power offshore
  - Prove H2 export offshore from a floating unit
- The project will be supported by a Tier 1 end user and stakeholder board who will support the project with knowledge, know how, industrial experience, and help set requirement and future use cases
- Commitment received from above companies

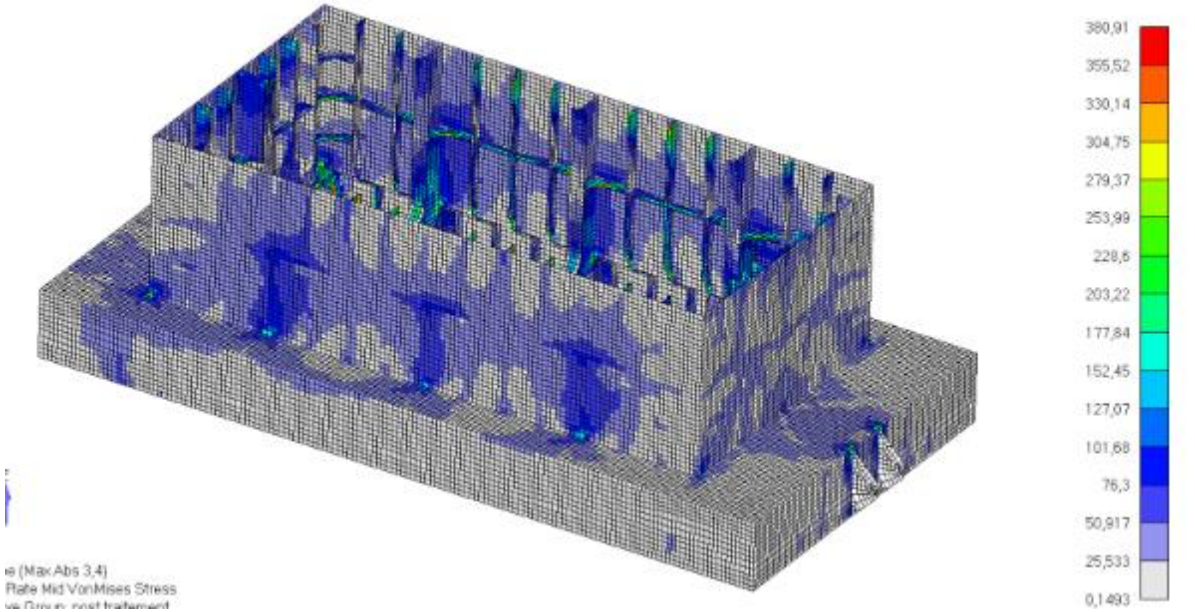
Source: The Company

P-DEMO SEMI SUBMERSIBLE

- **Semisubmersible**
  - Designed for but not with WEC
  - First loop nearing completion
  - Size will be reduced
  - Scantling design shows scope for steel weight reduction

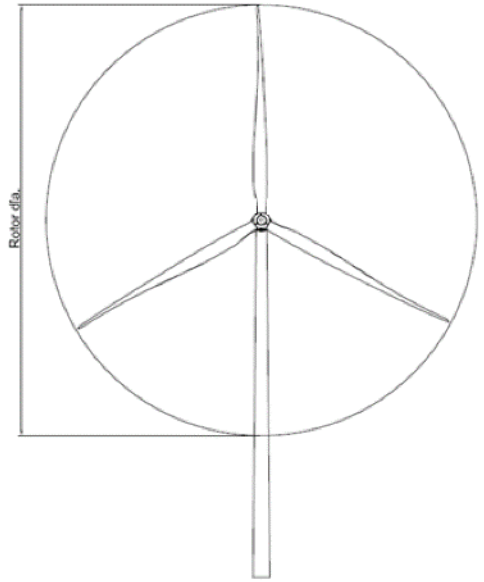
- **Key Parameters**
  - Length: 63m
  - Beam: 74m
  - Lightship Draft: <8m

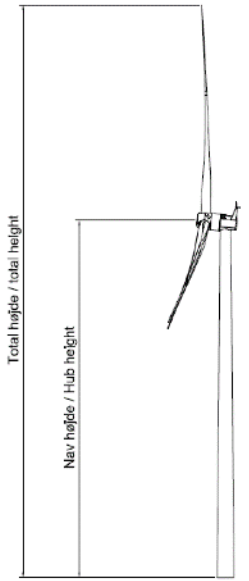




P-DEMO WTG

- **WTG Secured**
  - Ex demonstrator SGRE WTG
  - 120 m rotor diameter
- **Controller**
  - Existing controller usable with parametric changes
- **Tower**
  - Reus of majority of existing tower
  - Some modifications required

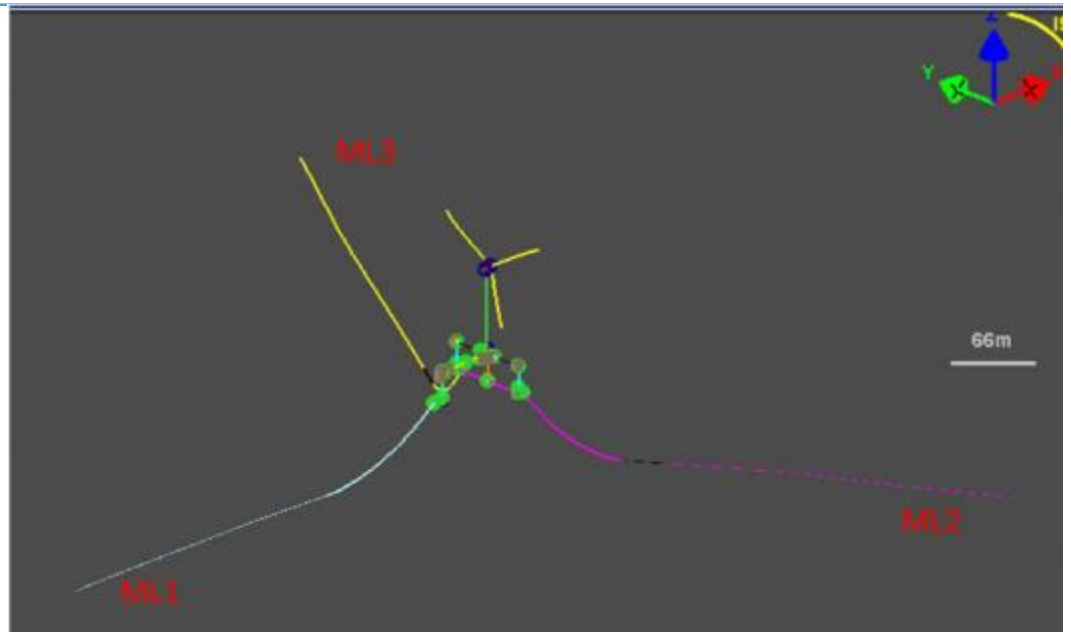




Generator		Value
Nominal power	:	4300 kW
Nominal rotor speed at nominal power	:	13.7 rpm
Electrical torque at nominal power/speed	:	2997.2 kNm
Generator cut-in rotor speed	:	8.0 rpm
Generator cut-out rotor speed	:	6.5 rpm

P-DEMO STATION KEEPING & CABLE

- **Preliminary Design**
  - 3x1 Mooring layout
  - Fairleads at bottom of columns
  - All chain
- **Cable**
  - 20kV dynamic export cable
  - Fibres integrated for data and control



ML	ML1		ML2		ML3	
Segments lengths [m] and composition	408	CHAIN_76	100	CHAIN_111	110.5	CHAIN_97
			30	CLUMP_111	29	CLUMP_97
			295	CHAIN_111	418.3	CHAIN_97
Total length [m]	408		425		557.8	
Mooring radius [m]	458.3		430		574	
Absolute vertical angle at static equilibrium (MSL-SOL) [deg]	53.8		39.2		43.2	
Absolute pretension at static equilibrium (MSL-SOL) [kN]	224		283		259	

Table 4-1 : Mooring lines final configuration

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THANKS