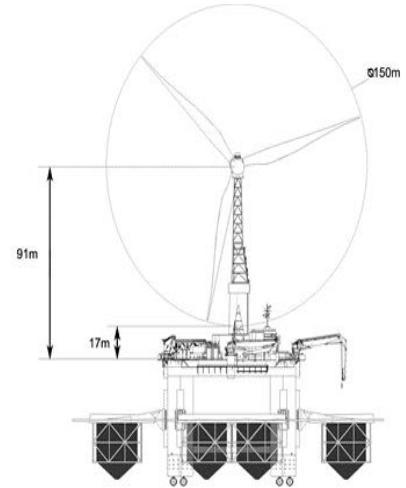


**VIEWPOINT**

# Viewpoint AS

- **Viewpoint AS is a company based on the use of existing technology from oil & gas towards aquaculture and hybrid solutions.**
- **Viewpoint Seafarm AS is a technology and equipment company that is responsible for the construction of the Viewpoint seafarm concept.**
- **Viewpoint Spidercage AS is a technology and equipment company that is responsible for building the Spidercage concept.**
- **Collaborators:**
  - **NovaSea AS – fish farmer / co-owner**
  - **Aibel ASA - EPCI supplier - Engineer, procurement and construction**
  - **Moss Maritime AS - 3rd party refinement maritime system**
  - **Mørenot AS / Aquaknowledge - Construction specification and cage solutions**
  - **Icon System AS - control and monitoring**
  - **Valinor AS**
  - **Marin - Test facilities**
  - **Bluewind AS**



aibel

MØRENØT  
AQUACULTURE

NOVA  
SEA

Valinor

MOSS  
MARITIME

MARIN

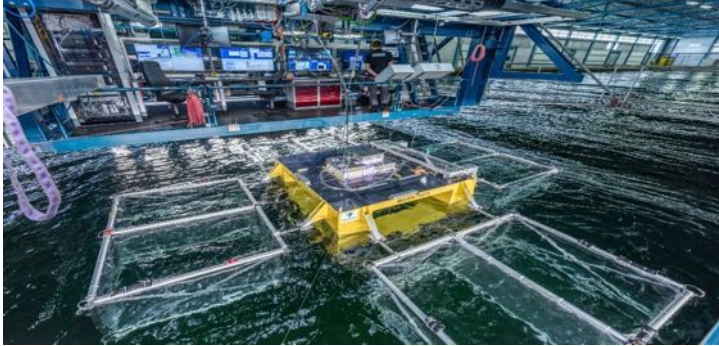
ICON  
SYSTEMS AS

VIEWPOINT



# Viewpoint Seafarm

- **Viewpoint Seafarm is an offshore fish farm with Hs 15 in submerged condition. Pool test at Marin in the Netherlands verified Hs 11 with a good margin in surface position.**
- **Both platform and cages can be lowered and raised**
- **The cages have a newly developed groove system that can withstand rough conditions.**
- **Viewpoint Seafarm has its own salmon lice treatment center.**
- **The plant is full hybrid with wind as the primary energy source.**



## Viewpoint Spidercage

- The concept is to use HIV compensation technology that is currently used on drilling installations, cranes and gangways in the North Sea. Technical solution is based on "best practice" from the oil & gas industry. The HIV-compensated solution consists of a floating outer structure that stands against the waves and an inner sleeve which is HIV-compensated and stretched firmly in the seabed with weights or suction anchors. HIV compensation prevents the cage from moving and will therefore prevent the fish from getting mechanical damage. With wave energy as the primary energy source. Pool test at Marin in the Netherlands verified Hs 11 by a good margin.
- Remote operation from land central
- Operation of several units
- Periodic supervision / transport
- Energy capture provides energy-neutral
- Diesel generator and safety
- Energy storage
- Constant Pull System
- Fish welfare
- HS 11 opens up new areas
- 12 meter fixed lice skirt



# Energy Neutrality



12 MW



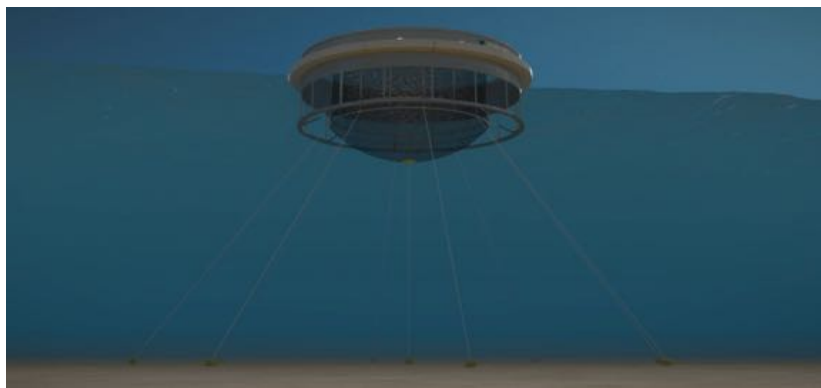
4 MW



ACCUMULATOR  
1500 kVAh



EM.GENERATOR  
250 kVA



# Market and international potential

- **Great growth potential internationally**
- **IP / patent protection until 2029 and can be extended from 2036-39 depending on the patenting process and feedback for both solutions**
- **IP and patent will be extended to international applications for both solutions**
- **Several patent applications will be filed during the concept phase**
- **Great technological development potential**
- **Sales or rentals will be decided later**
- **Great environmental gain**
- **Great safety gain**
- **Potential market share in Norway: 5-10%**



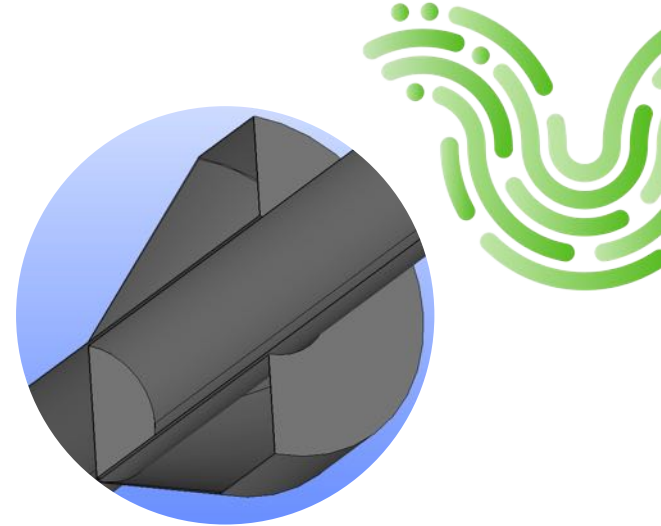


## Blue Wind Presentation

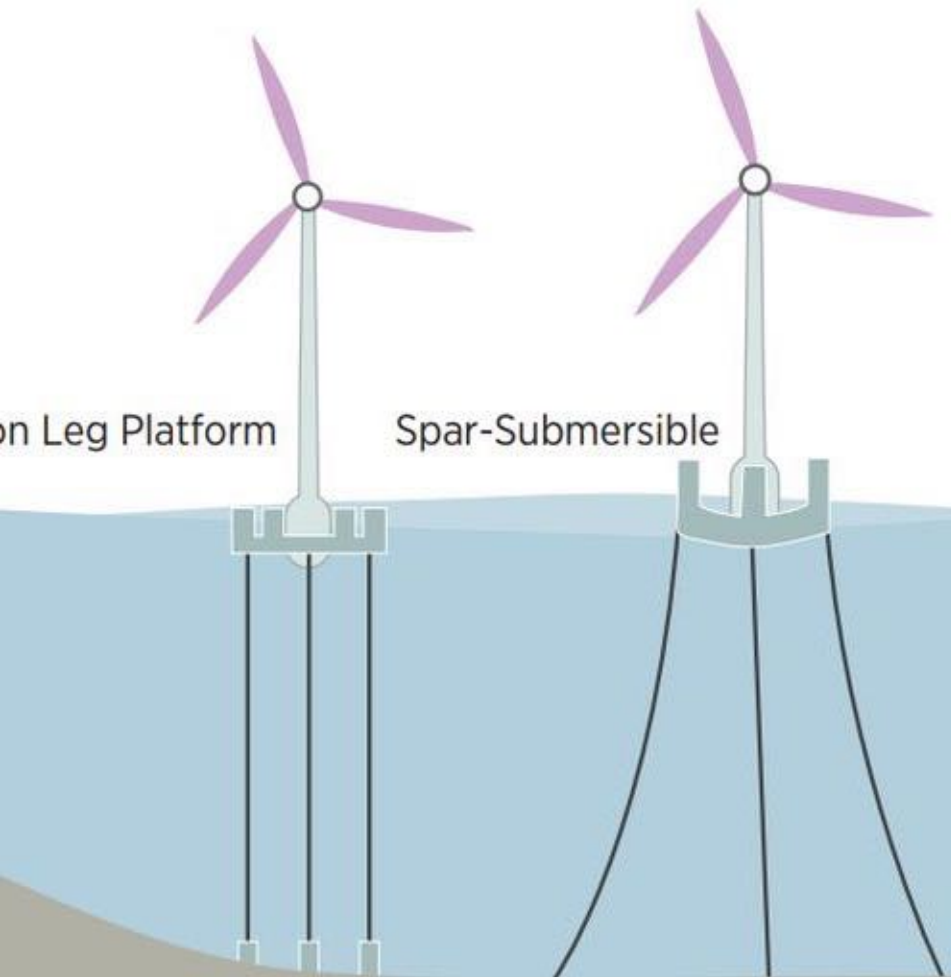
# Blue Wind

## SUMMARY

- Founded in 2019 by majority owner Valinor and partner.
- Based in Stavanger, Norway.
- Solid network and competence inhouse to ensure execution capability
  - Norsk Vind, the largest private wind power company in Norway with over 25 years experience in internationalization and financing (800MW+ portfolio built/in construction).
  - ViewPoint, developer of aquaculture facility solutions based on existing offshore technology from the oil and gas industry in the demanding North Sea.
  - ICON Systems, a complete supplier with special competence within automation and advanced industrial control systems for offshore and marine based industries.
- TRL-1 Finalized – TRL-4-5 scheduled pool test in size 1:40 during Q1 2020







## Concepts from the O&G sector

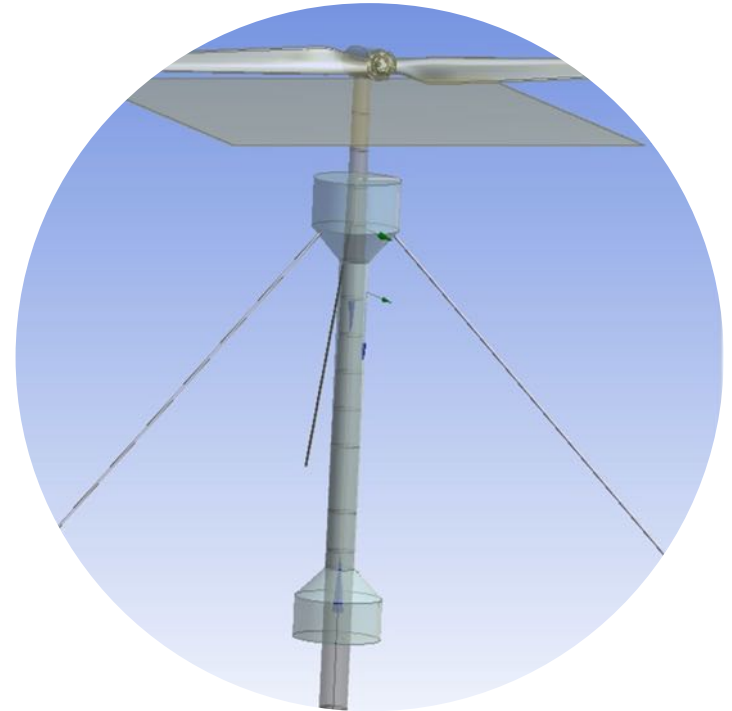
Tension Leg Platform, Spar-Submersible and Spar-Buoy are three concepts from the oil industry that are transferred to floating offshore wind.

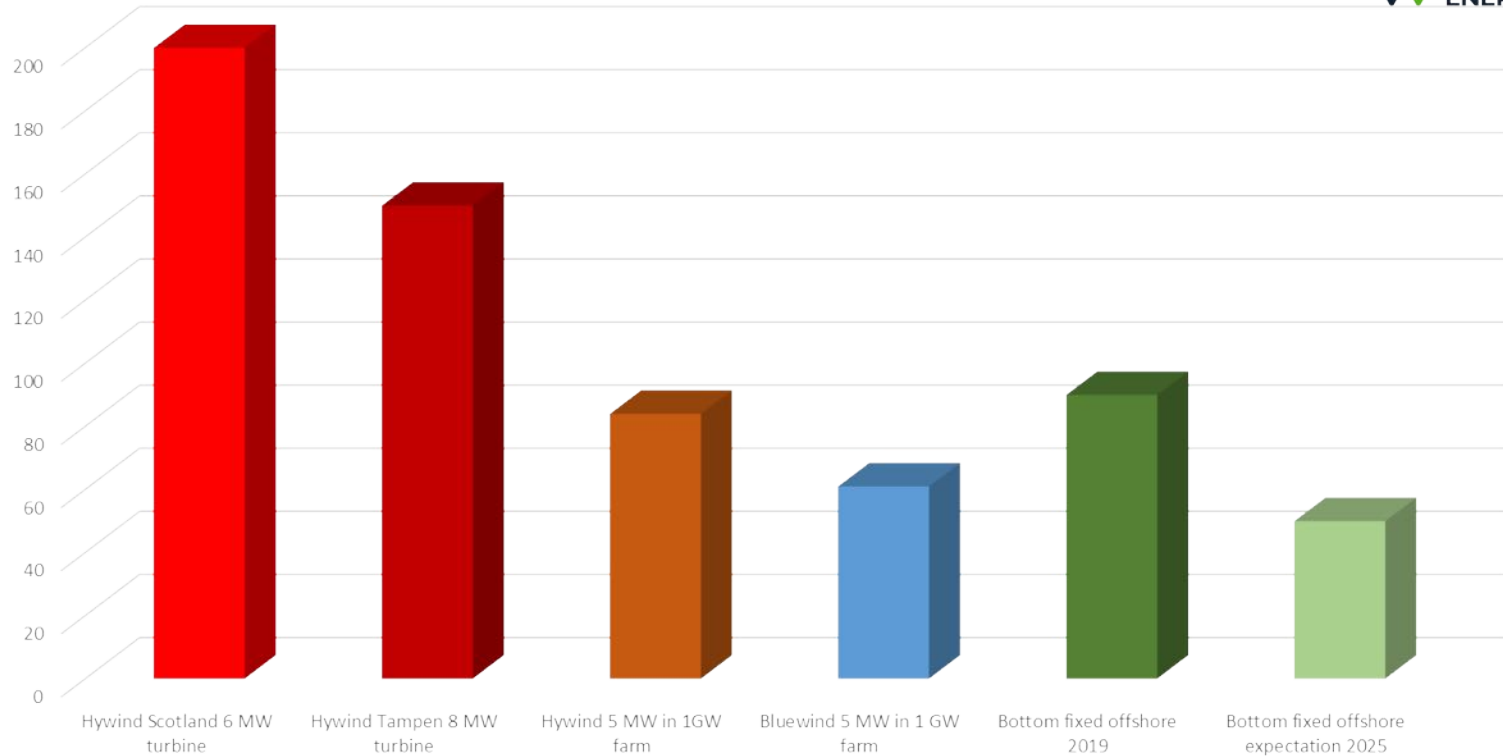
*“Equinor's Hywind concept with a spar buoy is leading the race right now, but it's too early to conclude a long-term winner”.* (TU: E. Vieseth, 30.11.19. Illustrasjon: IRENA)



# Advantages in relation to Hywind concept

- Less steel necessary below the water line to achieve stability and buckling resistance.
- Potential to scale up to higher sizes while maintaining stability and reduced hub movement.
- No need for heavy lifting vessel (HLV) during installation and maintenance, reducing maintenance cost and increasing availability.





**The Bluewind cost saving is based only on reduction in steel use and removing the need of a HLV in installation and maintenance for a 5 MW turbine. There is further scope for cost reduction through increased availability and upscaling. In our LCOE calculation model, the Hywind type turbine is predicted to have a 20-30 euro/MWh higher LCOE in a 1GW windfarm. It is our opinion that Hywind type wind turbine is less favourable for further upscaling than the Bluewind concept.**

# Structure and collaborators

## Companies

- Valinor – Majority owner
- Norce – Construction specifications
- ICON Systems – Systems for energy, control og monitoring
- Mossmaritim – Structure
- Norsk Vind
- Stavanger Engineering





Thank you for your attention!