

# Floating Wind Supply Chain in the Basque Country



Emerging offshore technologies: Floating offshore wind technology seminar  
Oostende, September 12, 2023

# Introduction - Wind Energy @ Basque Country

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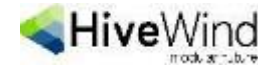


- 2.2 million people
- Leading Spanish region in terms of industrialization and R&D intensity
- 150 companies working in wind energy
- With manufacturers of almost every single component of a wind turbine
- Global supplier in offshore wind with a significant involvement in floating wind development

# One unique test-site and five floating foundation developers



**BiMEP**  
Open sea test site with  
grid connection for  
floating wind platforms



**Hive Wind**  
Semi-submersible floating  
steel platform



**SATH** (*Swinging Around  
Twin Hull*)  
Concrete floating platform



**W2Power**  
Twin turbine  
floating wind platform



**NAUTILUS Floating Solutions**  
Semi-submersible four-leg  
floating foundation



**WHEEL**  
Hybrid Wind Floater Technology:  
Compact lowdraft barge in harbour  
Transparent spar in operation



# Floating Wind Basque Country



## DEVELOPMENT & ENGINEERING



## WIND TURBINE & COMPONENTS



## OPERATION AND MAINTENANCE OF FLOATING WIND FARMS



## TOWERS AND TRANSITION PIECES



## R&D CENTRES



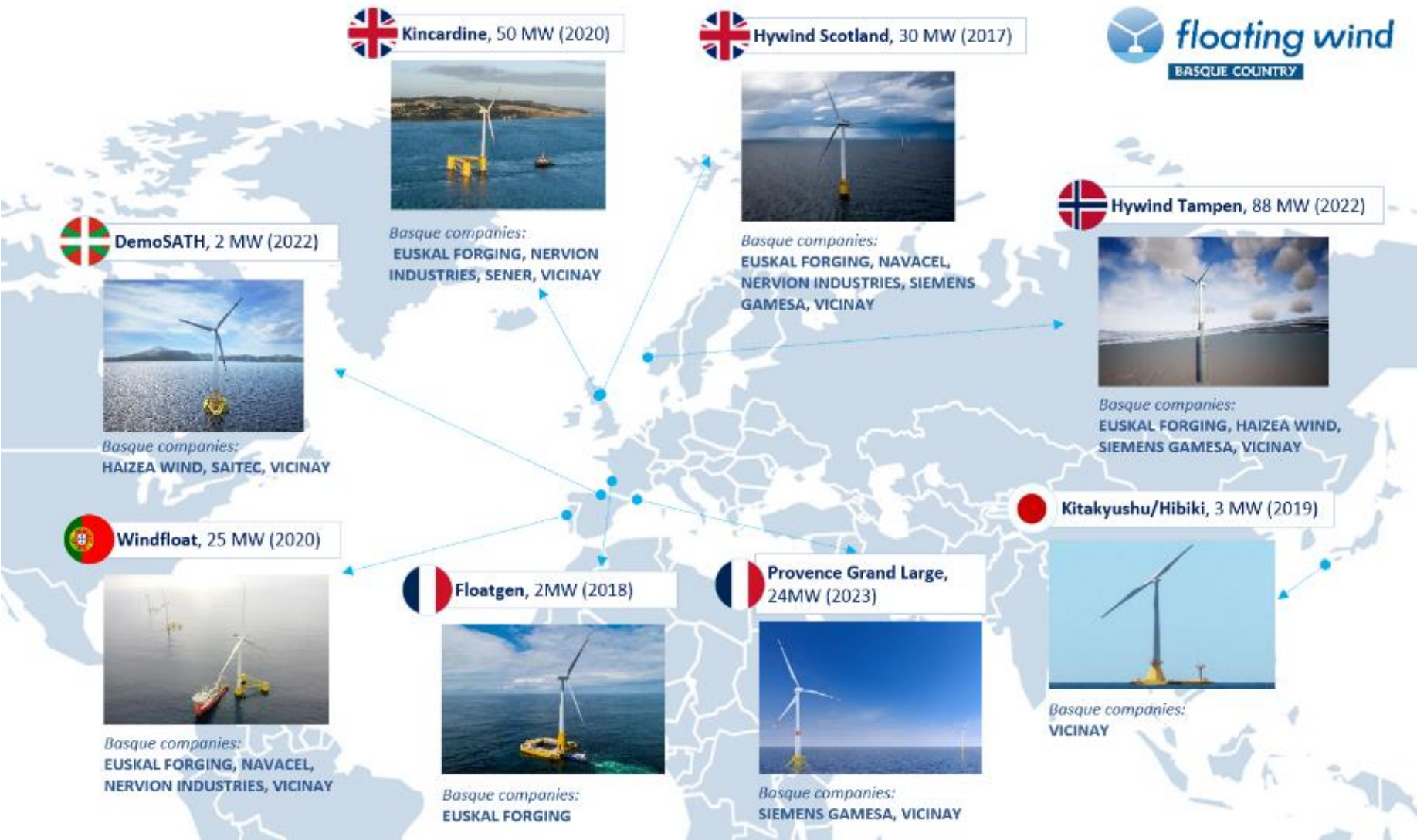
## FLOATING FOUNDATIONS



## MOORING



# Basque suppliers in (almost) all existing floating windfarms



# Strong activity in R&D



Horizon 2020 programme

## REDUCTION OF THE LCOE FOR FLOATING OFFSHORE WIND POWER



Coordinator:



Basque partners:



Horizon 2020 programme

## REDUCTION OF FLOATING OFFSHORE WIND OPERATIONAL COSTS AND INCREASE OPERATIONAL EFFICIENCY



Basque partners:



Basque Hazitek programme

## INNOVATIVE CONCEPT OF INTEGRATED FLOATING SUBSTATION DEVELOPED IN BASQUE COUNTRY



Coordinator:



Basque partners:



Basque Hazitek programme

## INTEGRAL SOLUTION FOR FLOATING WIND O&M THROUGH THE DEVELOPMENT OF NEW TECHNOLOGIES



Coordinator:



Basque partners:



# Floating offshore wind is unleashing in Spain

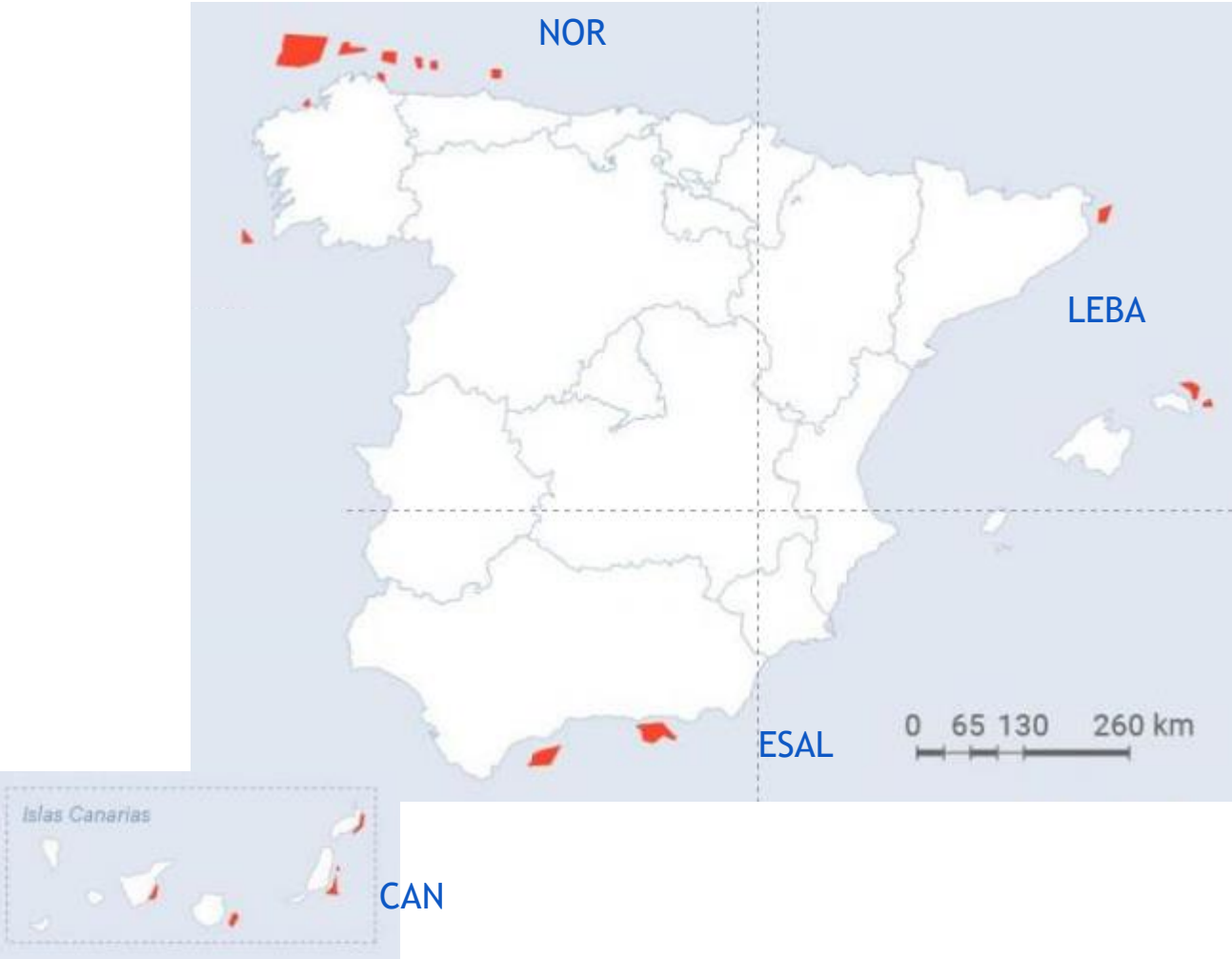
2030



Spain  
Goal of  
**1-3GW**  
for 2030

Global Outlook  
**10-14 GW**  
for 2030

# Marine Spatial Planning published in February 2023



		Area		Distance	Wind speed
DM	Código Polígono	Superficie (km <sup>2</sup> )	Potencial Eólica Marina (MW) [3MW/km <sup>2</sup> ]	Distancia a Costa (m)	Velocidad Viento a 100 m de altura (140m en Canarias)
CAN	CAN-FV1	192,2	576,7	6.000	7,5-8,5 m/s
CAN	CAN-FV2	16,3	48,8	6.000	7,5-8 m/s
CAN	CAN-GC1	163,9	491,7	6.000	7,5->10 m/s
CAN	CAN-LANZ1	97,4	292,2	2.000	7,5-8,5 m/s
CAN	CAN-TEN1	21,3	64,0	2.000	8,5->10 m/s
CAN	CAN-TEN2	70,8	212,3	2.000	>10 m/s
ESAL	ESAL-1	534,2	1.602,7	13.600	7,5-9 m/s
ESAL	ESAL-2	688,4	2.065,1	8.000	7,5-9 m/s
LEBA	LEBA-1	250,0	750,0	12.200	>9m/s
LEBA	LEBA-2	147,4	442,1	4.400	7,5-8 m/S
LEBA	LEBA-3	77,7	233,0	10.600	7,5-8 m/S
NOR	NOR-1	117,6	352,9	22.500	8-8,5m/s
NOR	NOR-2	1.806,4	5.419,2	28.500	>9 m/s
NOR	NOR-3	113,0	338,9	22.300	9-9,5 m/s
NOR	NOR-4	77,7	233,1	23.600	8,5-9 m/s
NOR	NOR-5	236,3	708,9	21.100	8-9 m/s
NOR	NOR-6	105,0	314,9	30.460	8-8,5 m/s
NOR	NOR-7	80,2	240,5	29.200	8-8,5 m/s
NOR	NOR-8	152,5	457,4	14.600	7,5-8 m/s
TOTAL		4.948,1	14.844,2		

# €143M program awarded in July 2023 to 18 floating wind projects

- SENER: Hive Wind Energy (€15M) & Hive Wind MED (€15M)
- SAITEC: Installation of a 2 MW platform connected to the grid for research and monitoring of the impact on the marine environment (€3M)
- BiMEP: Improvement of the simultaneous testing capacities of marine renewable demonstrators (€3M)
- TECNALIA: Installation of an underwater dynamic cable connecting HarshLab to BiMEP (€0.2M)



# ELBE Eurocluster



ELBE  
EUROCLUSTER

- INNOVATION
- TRAINING
- INTERNATIONALIZATION
- NETWORKING



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# Home to WindEurope 2024

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# Cluster Energía

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# THANK YOU

