



# Offshore wind energy: 2020 mid-year statistics

WindEurope Market Intelligence

# Disclaimer

This report summarises offshore installations from 1 January 2020 to 30 June 2020.

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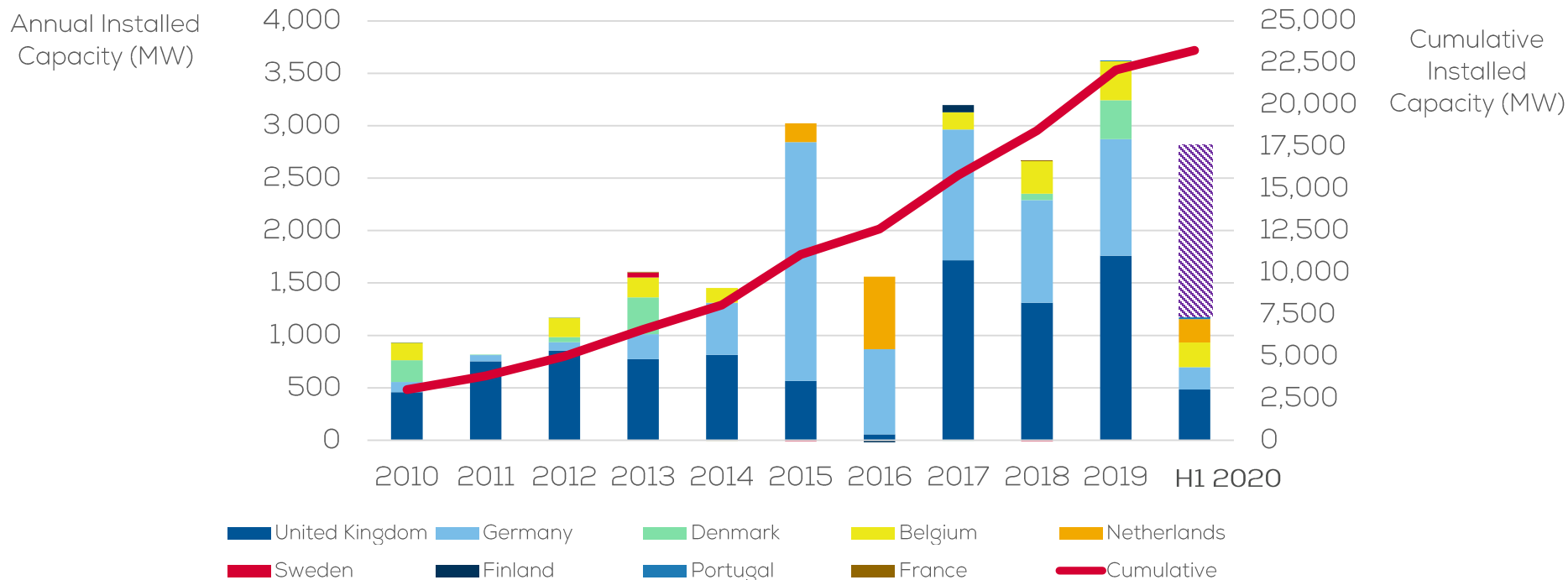
# HIGHLIGHTS

- 1.2 GW (156 turbines) were connected to the grid in 5 countries taking total European installed capacity to 23.2 GW
- First half of 2020 saw €11bn of investments for 3.7 GW of new offshore wind capacity, the third highest annual investment after just 6 months
- 5 wind farms were fully commissioned, taking the total number to 113 wind farms in European waters
- SGRE was the preferred manufacturer, with 115 turbines installed (71%)
- The Hollandse Kust Zuid 1,500 MW complex in Netherlands is the largest offshore project to reach FID to date

# 1. Offshore Wind Installations

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# Europe installed 1,172 MW in the first half of 2020\*, below the H1 average of the last three years (1.5 GW)

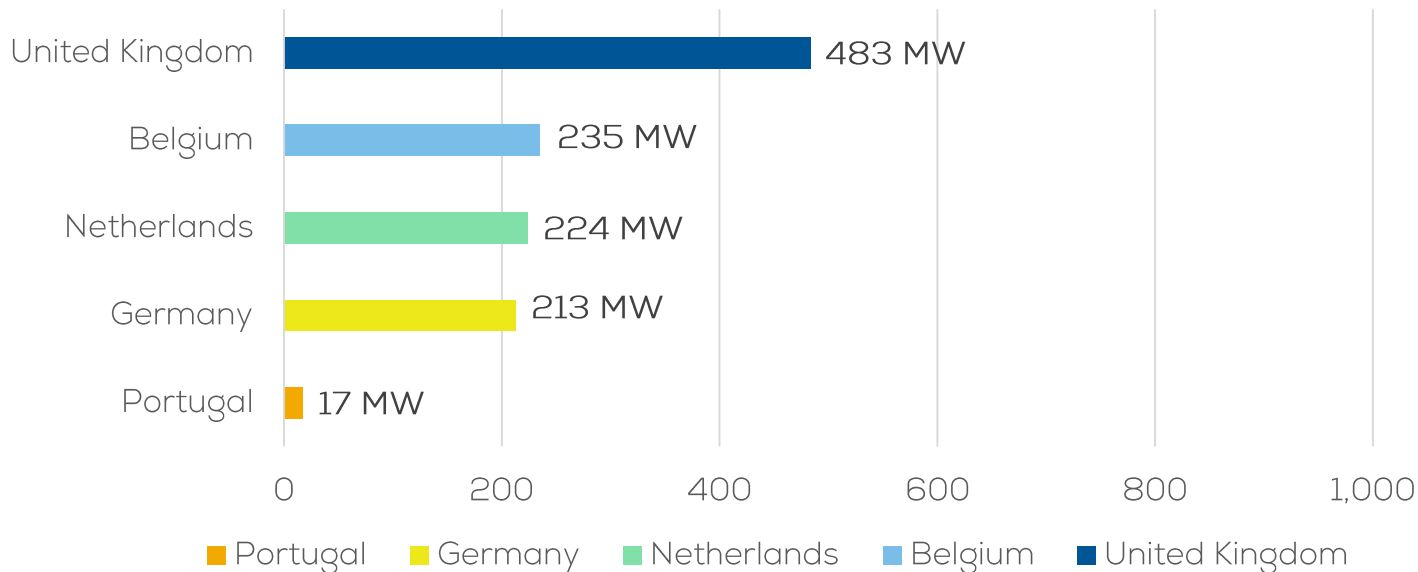


WindEurope forecasts 2,882 MW by the end of 2020

Source: WindEurope

# UK remains the largest market but installed 40% less compared to previous years\*

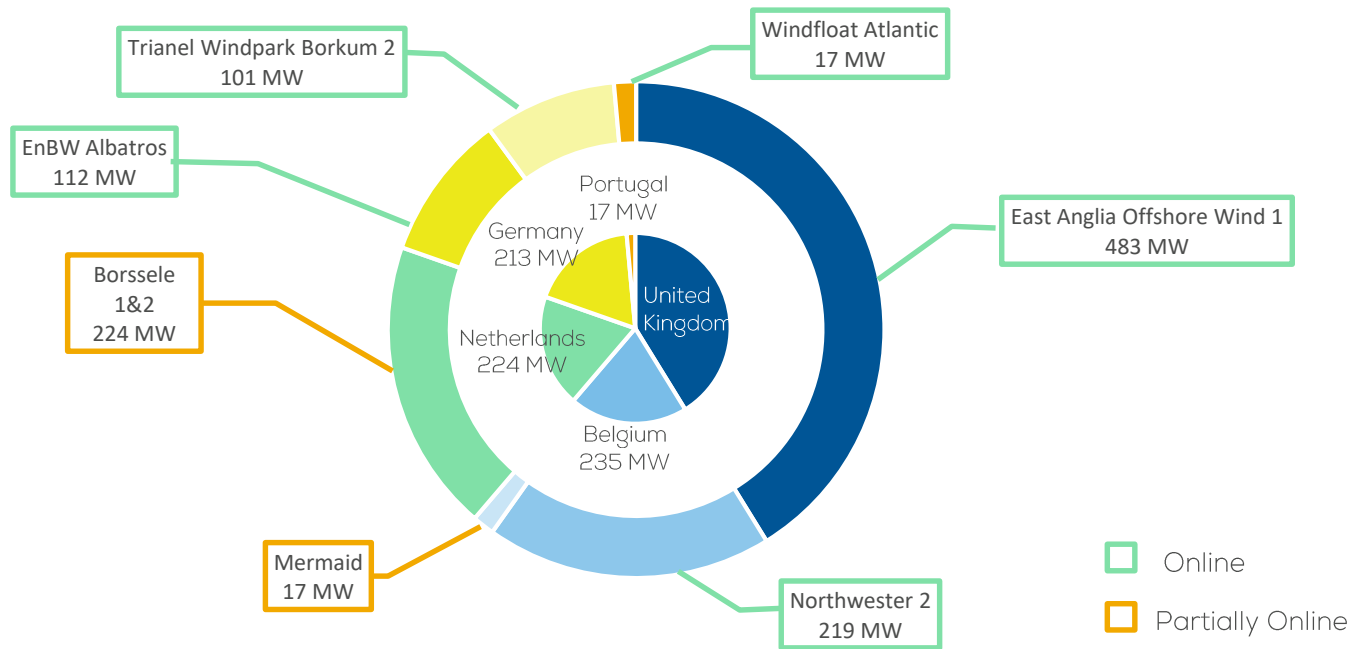
H1 2020



# 5 wind farms fully commissioned and 2 partially online in the first half of 2020

H1 2020

Capacity connected to the grid in H1 2020





# 156 turbines were connected to the grid across 7 wind farms

H1 2020

Works carried out at offshore wind farms with grid connections in First Half 2020

COUNTRY	WIND FARM	CAPACITY CONNECTED IN H1 2020 (MW)	NUMBER OF TURBINES CONNECTED	TURBINE MODEL	TYPE OF FOUNDATION	STATUS
UK	East Anglia One	483	69	SWT-7.0-154	3-Legs Jacket	●●●●●
Belgium	Northwester 2	218.5	23	V164-9.5 MW	Monopile	●●●●●
	Mermaid	16.8	2	SG 8.4-167 DD	Monopile	●○○○○
Netherlands	Borssele 1&2	224	28	SG 8.0-167 DD	Monopile	●●○○○
Germany	EnBW Albatros	112	16	SWT-7.0-154	Monopile	●●●●●
	Trianel Windpark Borkum 2	101.3	16	Senvion 6.2M152	Monopile	●●●●●
Portugal	Windfloat Atlantic	16.8	2	V164-8.4 MW	Semi-Sub (Floating)	●●●●●
TOTAL		1,172	156			

# 122 foundations were installed at 4 wind farms that are yet to connect their first turbine to the grid. All foundations have now been installed in Borssele 1-5,

H1 2020

Works carried out at offshore wind farms without grid connection in First Half 2020

COUNTRY	WIND FARM	FOUNDATIONS INSTALLED IN H1 2020	CUMULATIVE AND (TOTAL NUMBER OF FOUNDATIONS)	TURBINE MODEL	TYPE OF FOUNDATION
UK	Triton Knoll	45	45 (90)	V164-9.5 MW	Monopile
Netherlands	Borssele 5	2	2 (2)	V164-9.5 MW	Monopile
	Borssele 3&4	47	77 (77)	V164-9.5 MW	Monopile
Denmark	Kriegers Flak	28	28 (72)	SG 8.0-167 DD	Monopile

# Northwester 218 MW

Fully commissioned  
Belgium's 7<sup>th</sup> and largest  
offshore wind farm



Belgium  
Sumimoto (30%) & Parkwind (70%)  
23 turbines model V164-9.5 MW

Bottom-fixed monopile  
NSW (inter-array) & Nexans (export cable)  
32 m depth, 46 km to shore

# East Anglia 1

## 714 MW

Fully commissioned

United Kingdom

Iberdrola Renovables<sup>1</sup> (100%)

102 turbines model SWT-7.0-154

Bottom-fixed three legs jacket

JDR Cables (inter-array) &

Nexans (export cable)

36 m depth, 49 km to shore



Photo by Scottish Power Renewables

<sup>1</sup> Scottish Power Renewables is subsidiary of Iberdrola Renovables



# Borssele 1&2

## 752 MW

Partially online

It will become the largest offshore wind farm in the Netherlands



United Kingdom  
Ørsted (100%)

Under construction – 2020 expected  
94 turbines model SG 8.0-167 DD

Bottom-fixed monopile

Nexans (inter-array) & NKT (export cable)  
27 m depth, 22 km to shore

# Offshore Wind in Europe

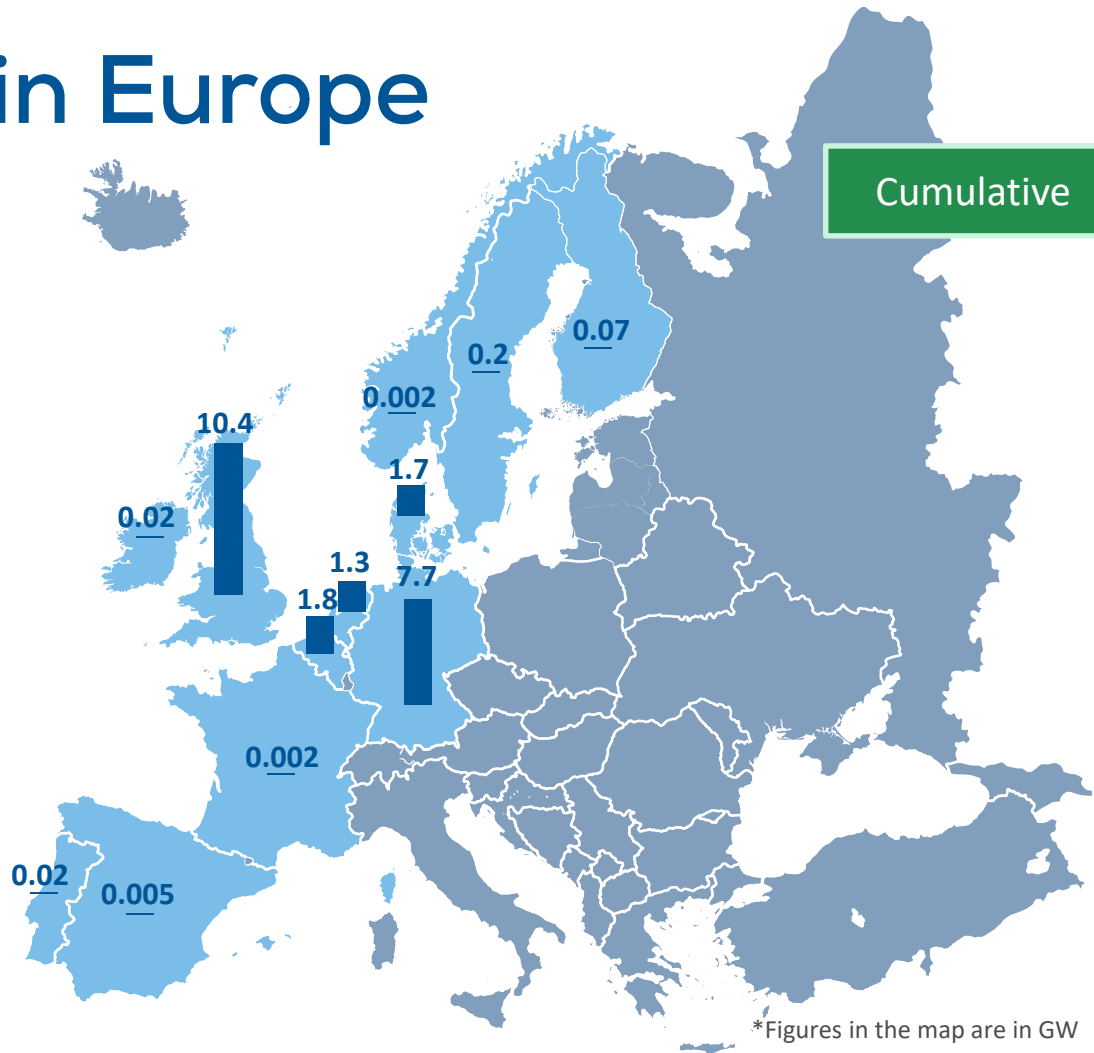
23,245 MW

Connected to the grid

12 Countries

5,202 Turbines

113 Wind Farms



# The UK and Germany have together over three-quarters of the capacity installed in Europe

Cumulative

Cumulative installed capacity and number of turbines by country

UK	45%	10,428 MW / 2,294 turbines
Germany	33%	7,659 MW / 1,501 turbines
Belgium	8.5%	1,791 MW / 343 turbines
Denmark	7.5%	1,703 MW / 559 turbines
Netherlands	5.5%	1,342 MW / 393 turbines
Others	1.5%	322 MW / 112 turbines

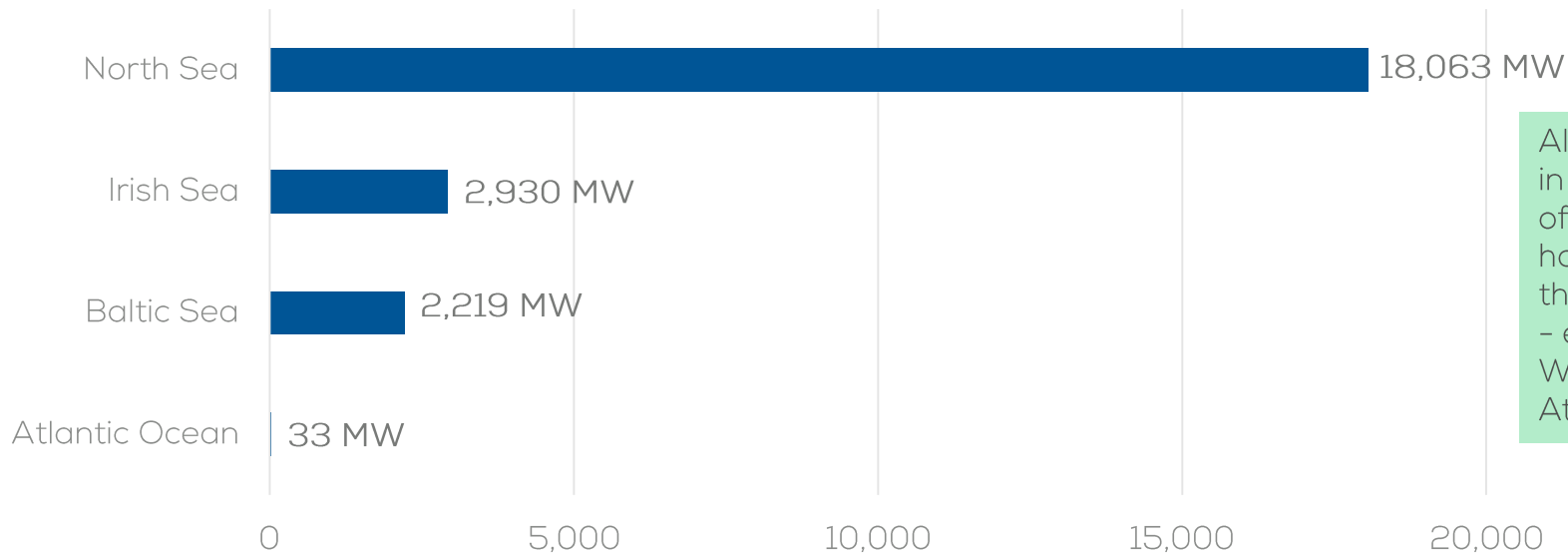
TOP 2 COUNTRIES REPRESENT

78%

OF ALL CAPACITY  
CONNECTED

# The North Sea is the most important sea basin for offshore wind in Europe

Cumulative



All installations in the first half of 2020 happened in the North Sea – except for Windfloat Atlantic.

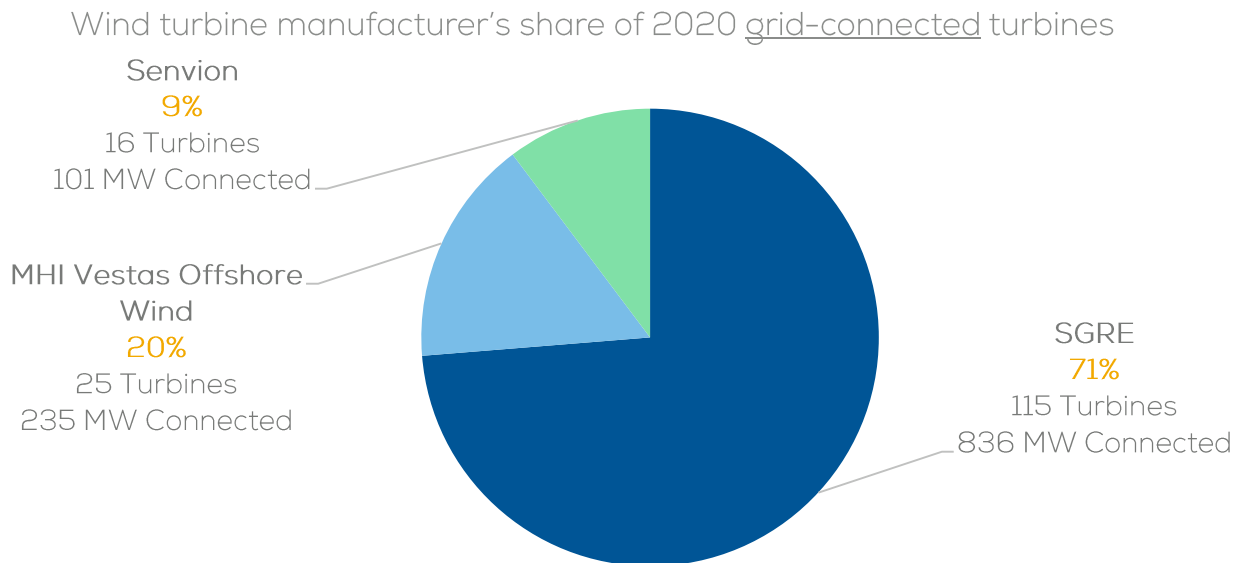


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# SGRE was the main turbine supplier with 71% of the installations in the first half of 2020

H1 2020



Senvion supplied and installed their last 16 turbines in Europe for the Trianel Windpark Borkum 2 in Germany

# SGRE and MHI Vestas dominate the European offshore market

Cumulative

Wind turbine manufacturer's share at end of June 2020

SGRE	68.3%	15.8 GW / 3,552 turbines
MHI Vestas	23.3%	5 GW / 1,212 turbines
Senvion	4.6%	1.4 GW / 238 turbines
Bard Engineering	1.5%	0.4 GW / 80 turbines
GE Renewable Energy	1.4%	0.4 GW / 74 turbines
Others	<1%	0.07 GW / 46 turbines

TOP 2 SUPPLIERS REPRESENT

90%

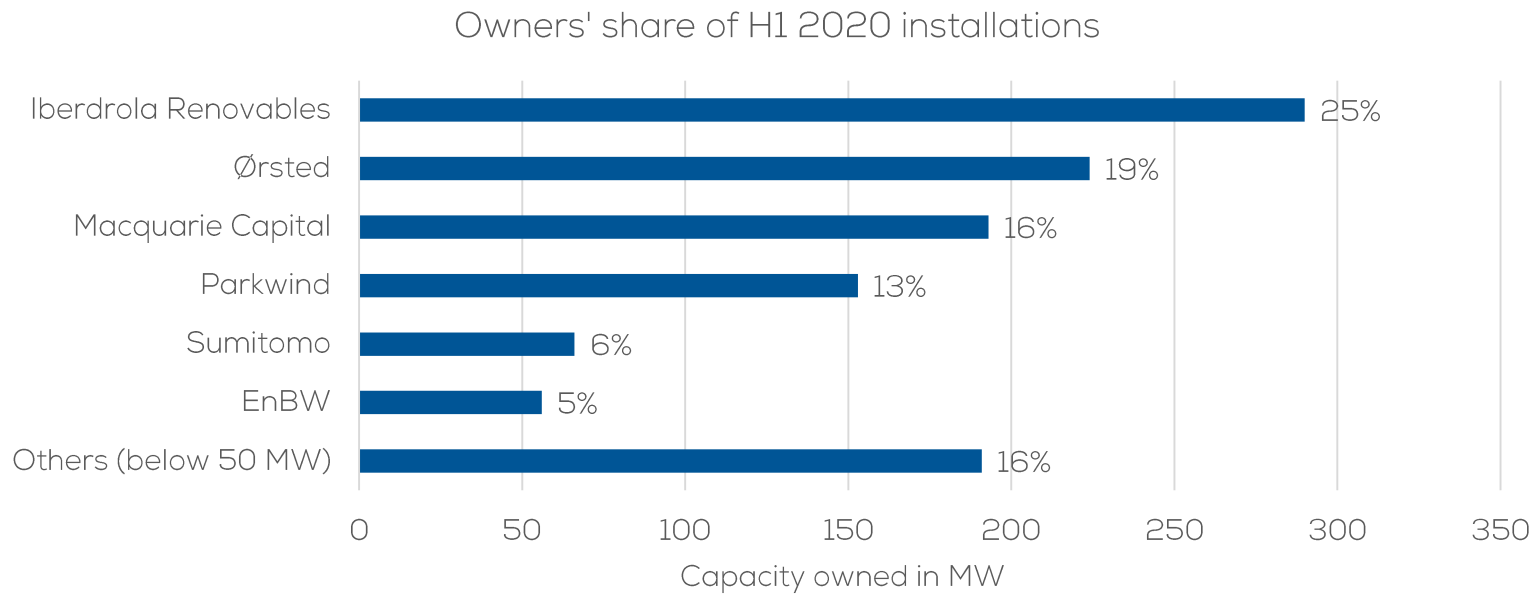
OF ALL CAPACITY  
CONNECTED

# Turbines Models highlights

- **SGRE:** SWT-7.0-154 (85 WTG) and SG 8.0-167 DD (30 WTG) were the most installed turbines in H1 2020 with 115 units in total\*
- **MHI Vestas Offshore Wind:** Largest wind turbines (V164 8.4 MW-9.5MW) installed in H1 2020 with 25 units\* (fixed-bottom and floating)
- **Senvion:** The last 16 turbines of the Trianel Windpark Borkum 2 were connected to the grid in H1 2020

# Iberdrola Renovables and Ørsted hold together almost half of the new capacity installed in H1 2020

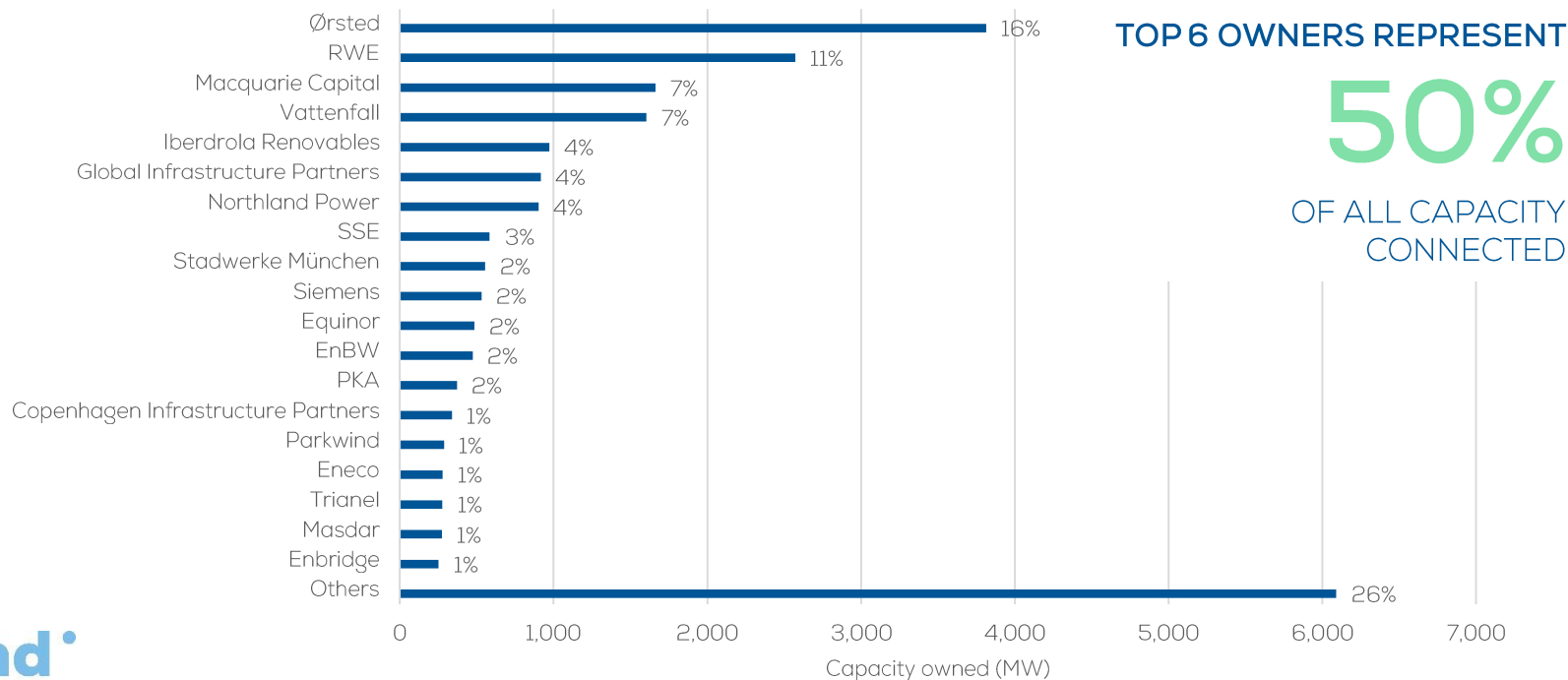
H1 2020



# Half of the installed capacity is owned by just 6 companies, but there is a diversified ownership portfolio among developers, power producers and financial groups

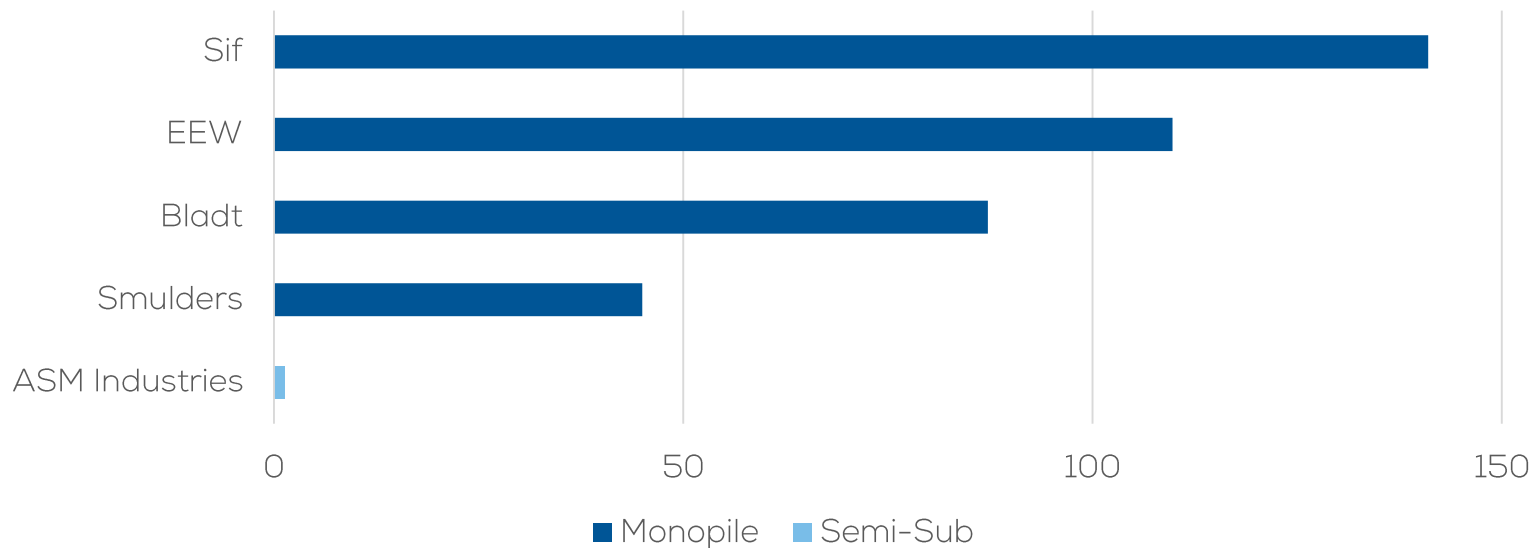
Cumulative

Owners' share of total cumulative installed capacity by end of June 2020



# All bottom-fixed projects installed 383 monopiles in H1 2020

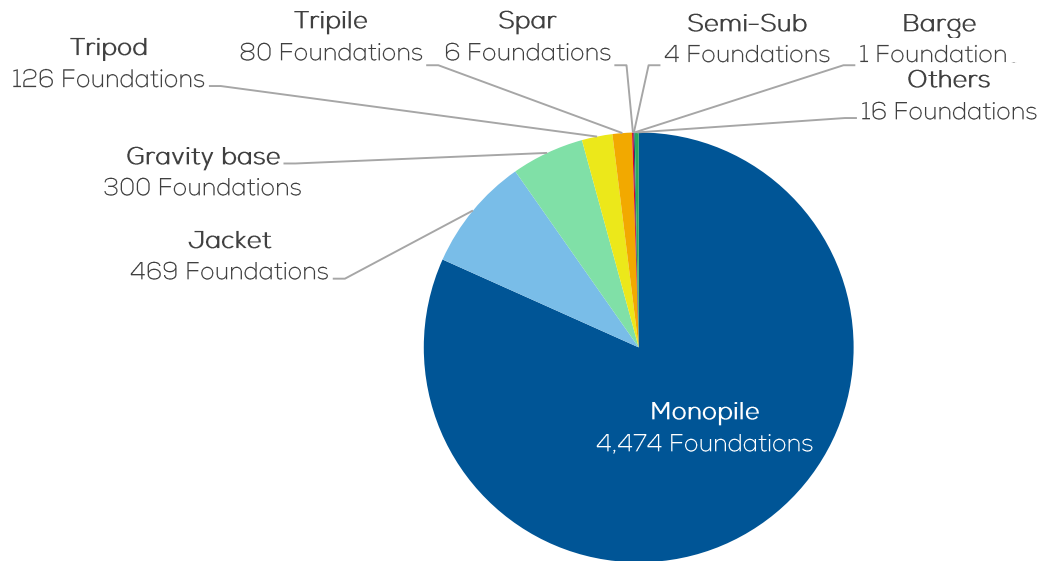
H1 2020



# The share of monopiles increases to 82% with the addition of new foundations in the North Sea

Cumulative

Share of substructure types for grid-connected wind turbines

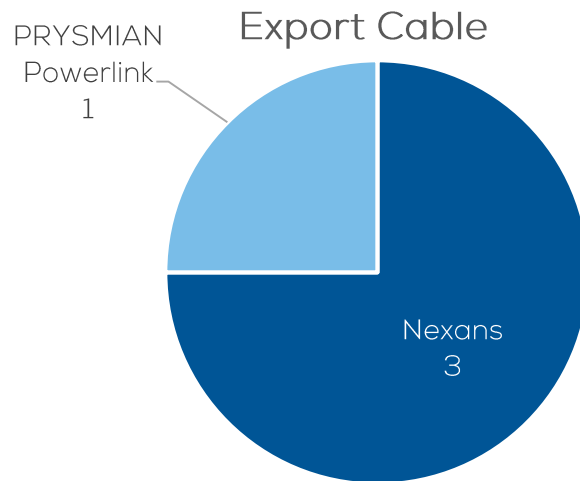
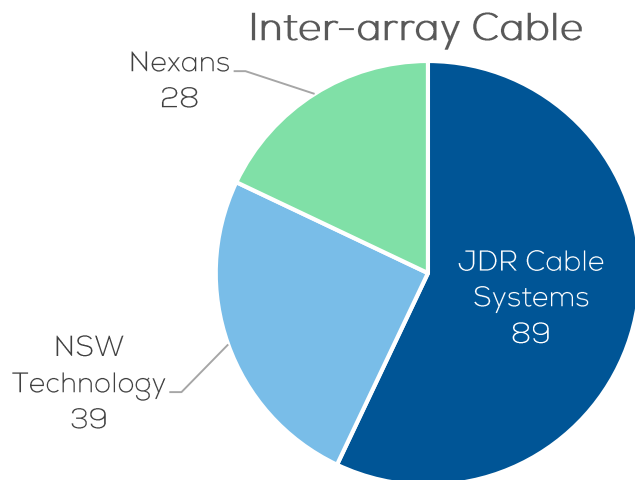




# Cable suppliers in H1 2020 were diversified with JDR (inter-array) and Nexans (export) standing out

H1 2020

Cables installed by manufacturer in first half 2020

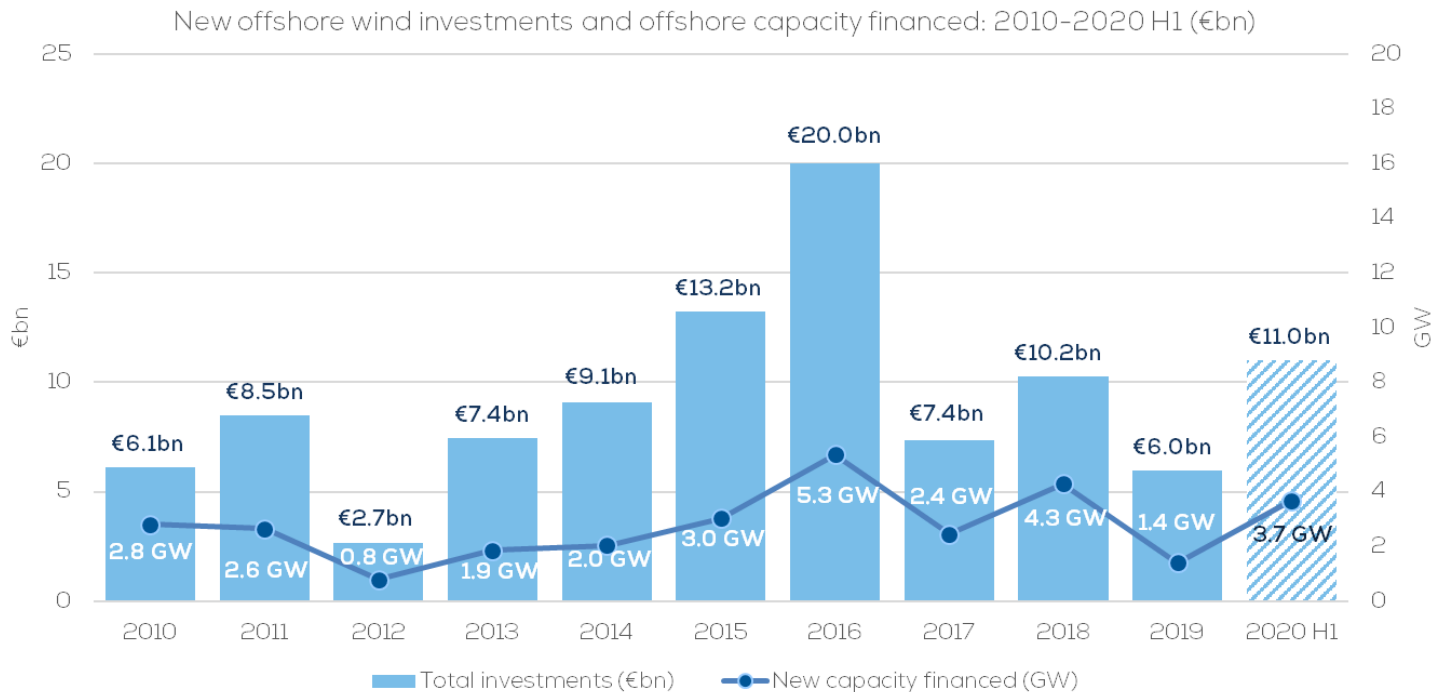


# 3. Finance

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# First half of 2020 saw €11bn of investment for 3.7 GW of new offshore wind capacity, the third highest annual investment after just 6 months

H1 2020



# Final Investment decisions taken for 5 projects (€11bn), including the largest offshore project to reach FID to date, the 1.5 GW Hollandse Kust Zuid complex

H1 2020

Investments in European offshore wind farms in H1 2020

WIND FARM	COUNTRY	CAPITAL RAISED (€bn)	NEW CAPACITY FINANCED (MW)
Fécamp	France	2.5	497
Saint Briec	France	2.0	496
Seagreen Alpha & Bravo	The UK	3.5	1,140
Hollandse Kust Zuid III & IV	The Netherlands	2.5*	1,500
Kincardine (floating)	The UK	0.4	50

# THANK YOU

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