

# Global Offshore Wind Report

1<sup>st</sup> half 2021



August 2021



WORLD FORUM  
OFFSHORE WIND

# Top 5 facts about WFO

**WFO: 100% Offshore Wind**



**Non-profit**  
organisation  
founded in 2018



**Initiatives**  
Floating Offshore Wind Committee  
Offshore Dispute Resolution Committee



**65+ global**  
member  
organisations



**Global setup**  
with offices in  
Hamburg, New York,  
Tokyo and Taipei



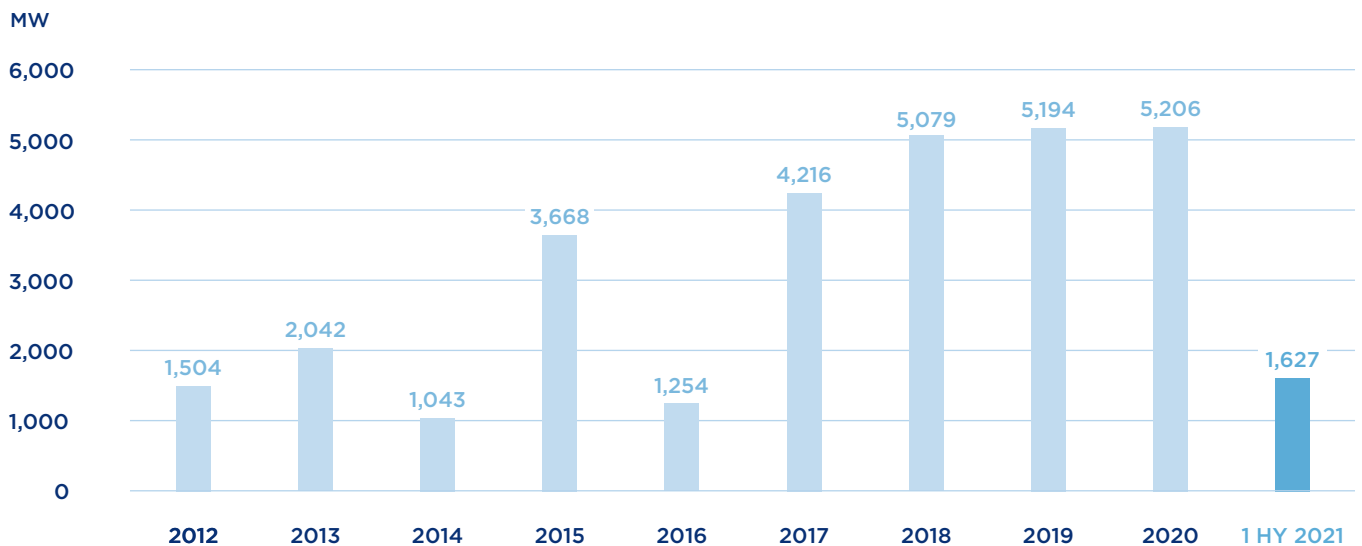
**Core activities**  
1. Networking & Events  
2. Information & Reports  
3. NGO & Government Advisory

**World Forum Offshore Wind (WFO)** is the world's only organisation 100% dedicated to fostering the global growth of offshore wind energy. WFO's international members represent the complete offshore wind value chain including utilities, manufacturers, service firms and non-profit organisations.

## 1<sup>st</sup> half 2021

# Slower offshore wind growth likely caused by adverse effects of COVID-19

### Annually added global offshore wind capacity



- With just over **1.6 GW** of newly added capacity during the 1<sup>st</sup> half of 2021, global offshore wind growth has slowed down since the last year
- Globally, **6** new offshore wind farms went into operation<sup>1</sup> in the following offshore wind markets: China, Denmark, the Netherlands and Taiwan
- The average size of a newly added offshore wind farm during the 1<sup>st</sup> half of 2021 is **261 MW** compared to **254 MW** during the 1<sup>st</sup> half of 2020

<sup>1</sup> In operation: all turbines installed and first electricity being generated



# 1.6 GW

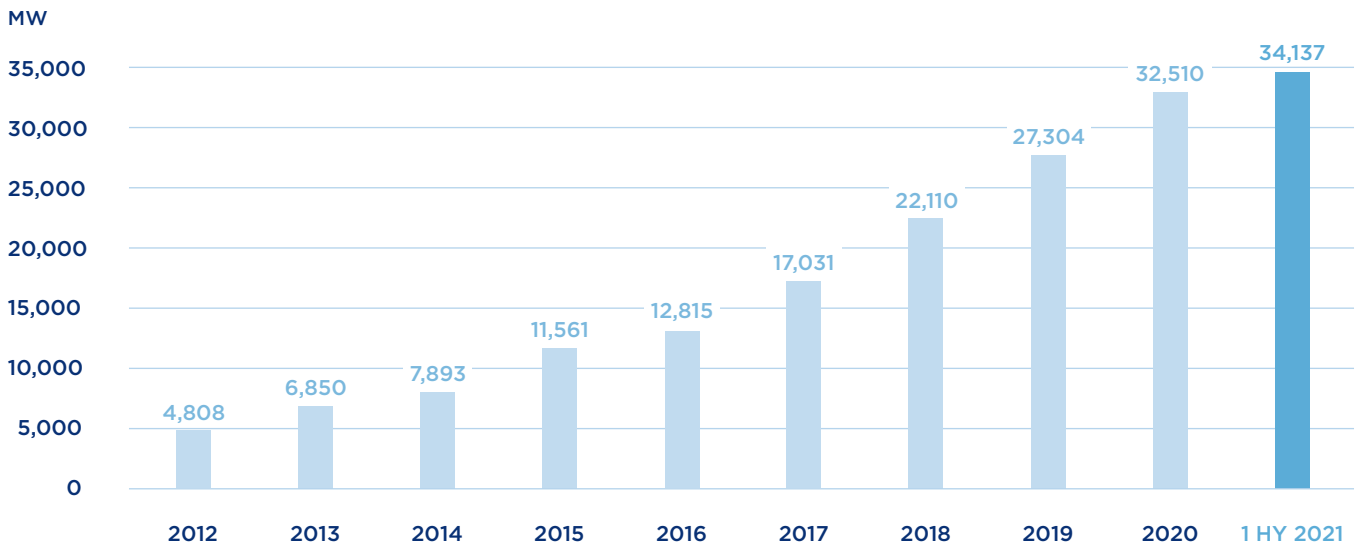
Globally added offshore wind capacity

# Continued growth

## Global offshore wind capacity surpasses 34 GW

Global offshore wind capacity in operation<sup>2</sup> – cumulative

IN OPERATION



- Globally, installed offshore wind capacity reached **34.1 GW** by the end of the 1<sup>st</sup> half of 2021<sup>3</sup>
- The second half of 2021 is expected to see an **acceleration of the global build-out** of offshore wind capacity
- Worldwide, **169** offshore wind farms<sup>4</sup> are currently in operation in Europe, Asia and the USA

<sup>2</sup> In operation: all turbines installed and first electricity being generated

<sup>3</sup> In total, 38.5 MW of offshore wind capacity have already been decommissioned

<sup>4</sup> Wind farm: project consisting of at least two offshore wind turbines



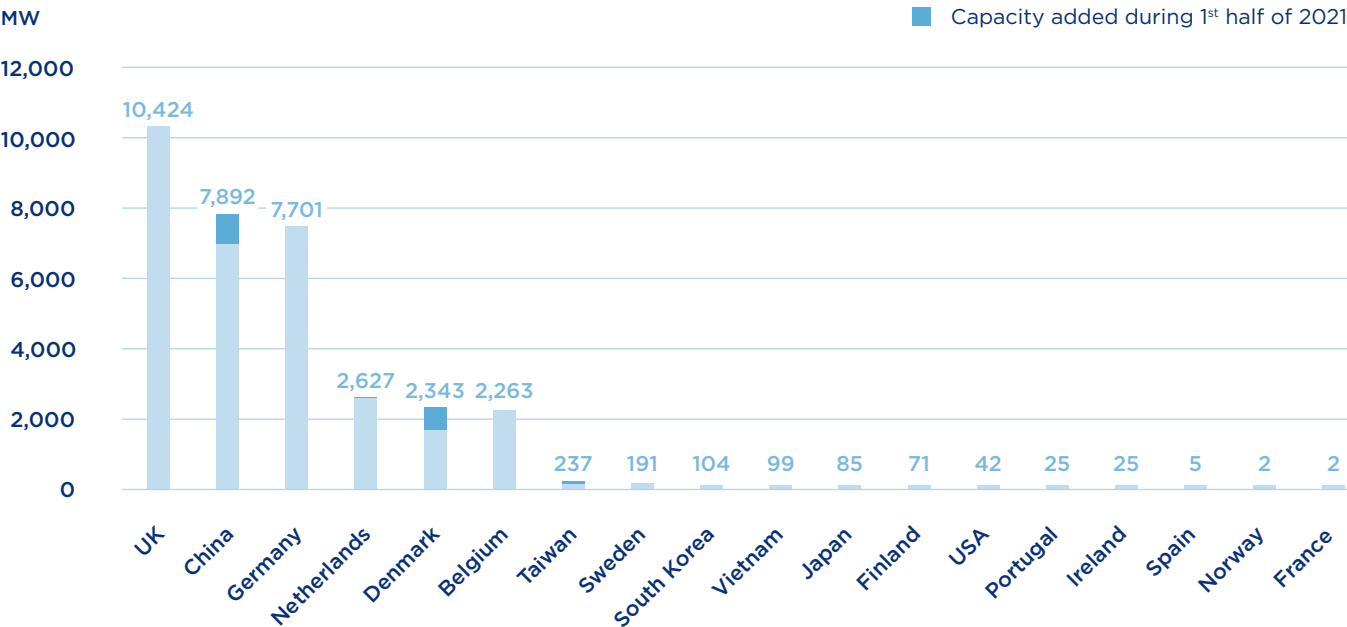
# 34.1 GW

Global offshore wind capacity in operation

# Top markets

## China overtakes Germany as the world’s second largest offshore wind market

Global offshore wind capacity in operation<sup>5</sup> – by country IN OPERATION



- **China** is growing rapidly with **834 MW** of newly installed capacity during the 1<sup>st</sup> half of 2021, increasing its total installed capacity to **7.9 GW**
- **Germany** lost its second place to China with a stagnant total of **7.7 GW** and **no new capacity** added or under construction during 1<sup>st</sup> half of 2021
- **Taiwan** successfully installed its second **commercial-scale** offshore wind farm, Changhua Phase1 (109MW), which was completed in June 2021

<sup>5</sup> In operation: all turbines installed and first electricity being generated

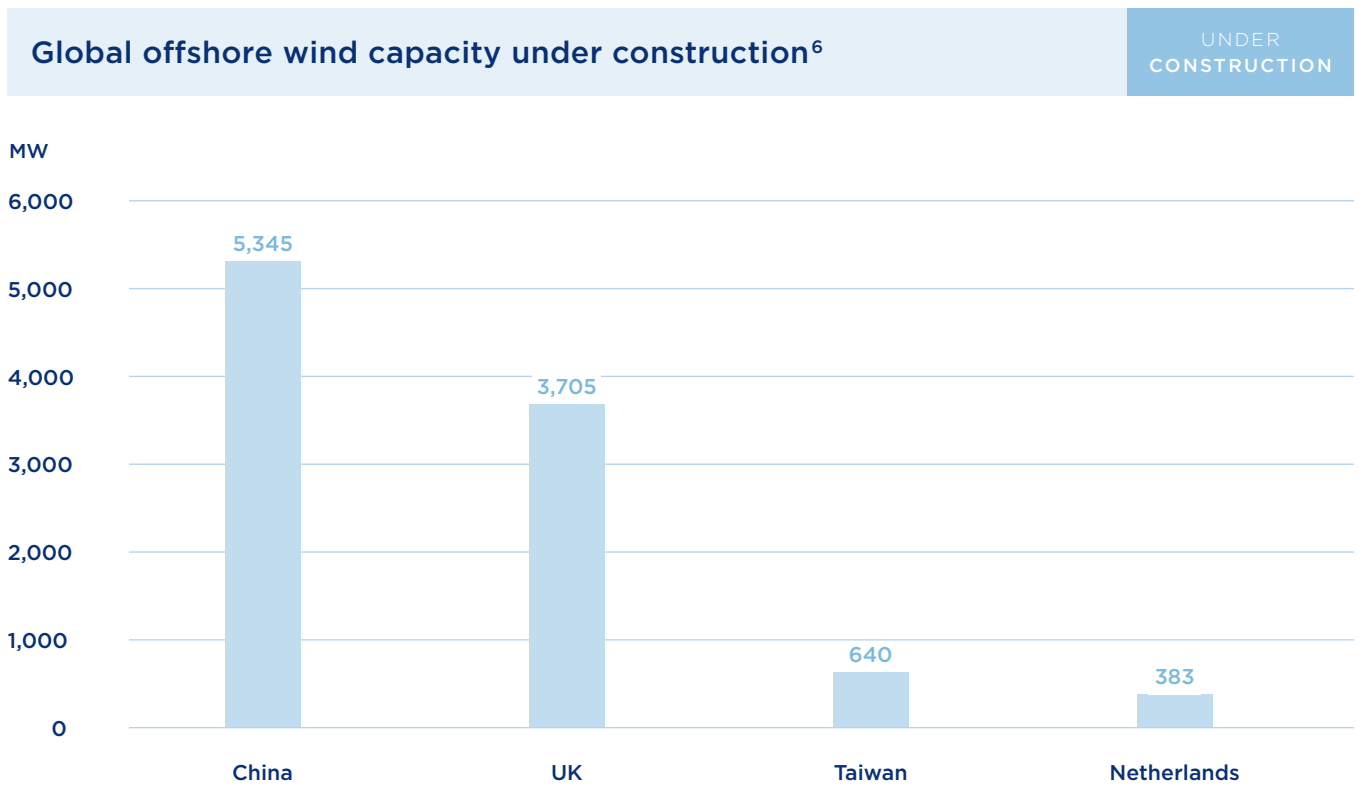


# 834 MW

Added Chinese offshore wind capacity

# Construction

## Strong growth in China and the UK



- **China's** dynamic offshore wind sector continues to grow rapidly with a total capacity of nearly **5.4 GW** currently under construction
- **Germany's** disruptive regulatory changes are reflected by **zero construction** activities in Germany for the third half-year in a row
- **Taiwan** continues its steady growth path with 640 MW currently under construction ahead of the **Netherlands** with 383 MW under construction

<sup>6</sup> Under construction: first offshore wind foundation installed



# 5.4 GW

Chinese offshore wind capacity under construction

# In detail

## Global offshore wind farms under construction

### Offshore wind farms under construction<sup>7</sup> worldwide

UNDER  
CONSTRUCTION

No	Wind Farm	MW	Units	MW/Unit	Turbine	Location
1	Kincardine - Phase 2 (floating)	48	5	9.5	MHI Vestas V164-9.5	UK
2	Fujian Fuqing Haitan Strait	154	22	7.0	Mingyang MYSE7.0-158	CH
3	Longyuan Putian Nanri Island Phase 1	200	50	4.0	Siemens Gamesa SWT 4.0-130	CH
4	Fujian Putian City Flat Bay (Zone F)	200	29	7.0	Siemens Gamesa SWT 7.0-154	CH
5	Pingtang Changjiangao	204	37	5.5	Mingyang MYSE5.5-155	CH
6	Zhanjiang Xinliao	206	32	6.5	Mingyang MYSE6.45-180	CH
7	Fuqing Xinghuawan Offshore Wind Phase 2	280	35	8.0	Goldwind GW 175-8.0	CH
8	Datang Jiangsu Binhai	300	95	3.2	Mingyang SCD 3MW	CH
9	Tangshan Area 6 Phase 2	300	75	4.0	Siemens Gamesa SG 4.0-130	CH
10	CTGNE Yangjiang Shapa Phase 1	300	55	5.5	Mingyang MYSE5.5-155	CH
11	Yangjiang Nanpengdao	300	55	5.5	Mingyang MYSE5.5-155	CH
12	Huaneng Shandong Peninsula South 4	302	58	5.2	Envision EN-161/5.2MW	CH
13	Zhanjiang Xuwen Phase 1	303	47	6.5	Mingyang MYSE6.45-180	CH
14	Windpark Fryslan	383	89	4.3	Siemens Gamesa SWT-4.0-130	NL
15	Jieyang Shenquan	400	73	5.5	Mingyang MYSE5.5-155	CH
16	Three Gorges Renewables YangXi 2	400	73	5.5	Mingyang MYSE5.5-155	CH
17	Neart na Gaoithe	450	54	8.4	Siemens Gamesa SG 8.0-167 DD	UK
18	Fujian Changle Waihai Area C	496	57	10.0/8.0	20 Dongfang 10MW, 37 Shanghai Electric 8MW	CH
19	Shanwei Houhu Offshore Wind Phase 1	500	91	5.5	Mingyang MYSE5.5-155	CH
20	Yangjiang Qingzhou 3	500	67	8.3/6.8	30 Mingyang MYSE8.3-180/37 MYSE6.8-158	CH
21	Yunlin	640	80	8.0	Siemens Gamesa SG 8.0-167 DD	TW
22	Triton Knoll	857	90	9.5	MHI-Vestas V164-9.5	UK
23	Moray East	950	100	9.5	MHI-Vestas V164-9.5	UK
24	Hornsea 2	1,400	165	8.4	Siemens Gamesa SG 8.0-167 DD	UK
Total		10,073				

- More than **10GW** of offshore wind capacity is currently under construction **worldwide**
- **53%** of the global offshore wind capacity is currently being constructed in **China**
- The **average size** of offshore wind projects under construction is **420 MW**

<sup>7</sup> Under construction: first offshore wind foundation installed

**JOIN  
US!**

**World Forum Offshore Wind e.V.**

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