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# AWEA WEBINAR SERIES 2020 - MARKET SESSION

Highlights of WFO's Global Offshore Wind Report 1H2020

SPEAKERS:



**GUNNAR HERZIG**  
Managing Director - WFO



**JOSEPH DENG**  
Country Representative China - WFO

**TUESDAY, 29 SEPTEMBER 2020 - 3 PM SGT**



**The Asia Wind Energy Association was established in December 2016 to become the leading trade association for the wind energy sector in Asia Pacific.**

**The association acts as the regional platform for all wind power industry stakeholders to collectively promote the best interests of the wind power sector.**

**The Asia Wind Energy Association is supported by a wide variety of stakeholders from the offshore and onshore wind industry.**

## Information



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# Asia Wind Energy Association Corporate Partners

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# Asia Wind Energy Association Partner Organizations





## Gunnar Herzig

### Managing Director - WFO

Gunnar Herzig is the Managing Director and Co-Founder of the World Forum Offshore Wind (WFO) and an independent advisor in the offshore wind industry. He has spent the past 10 years working in the renewable energy industry, focusing on offshore wind. WFO is a non-profit organisation founded in 2018 with the goal of promoting offshore wind energy worldwide. Previously, Gunnar worked for the German energy company RWE. During his career at RWE Gunnar held the positions of Investment Manager Offshore Wind and Portfolio Manager. Gunnar holds a master's degree in International Business Administration from Tuebingen University, Germany incl. an exchange year at the National University of Singapore as well as an MBA degree from Cambridge University, UK.



## Joseph Deng

### Country Representative China - WFO

Joseph has more than 15 years renewable energy experience, a specialist in renewable energy projects with a good understanding of renewable energy technologies such as onshore, offshore wind. He had worked on projects across multiple countries. Joseph has technical skills, as an engineer with hands-on experience of operating assets; commercial awareness, an ability to understand the whole business; He has broad experience across the renewable industry in turbine testing, development phase, procurement, technical due diligence and operations phase. A trilingual (Cantonese, Mandarin & English) BEng MSc and MBA graduate who has worked in technical and business environments and in both Eastern and Western cultures. The latest project including helping CTG a Chinese SOE for their bidding offshore wind farm in China last year.





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OFFSHORE WIND

100% offshore wind



**Gunnar Herzig**

Managing Director  
World Forum Offshore Wind  
(WFO)





**NON-PROFIT ORGANISATION FOUNDED IN 2018**



**REPRESENTING THE COMPLETE OFFSHORE WIND VALUE CHAIN**



**INTERNATIONAL SETUP WITH OFFICES IN HAMBURG AND SINGAPORE**



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OFFSHORE WIND**

# WFO's Activities

## LOBBY

On federal, municipal, and local levels of government



## INFORM

Via media channels, conferences, and databases



## CONNECT

Via global summits, networking events, workshops and webinars





# WFO's Members



# WFO's Latest Report



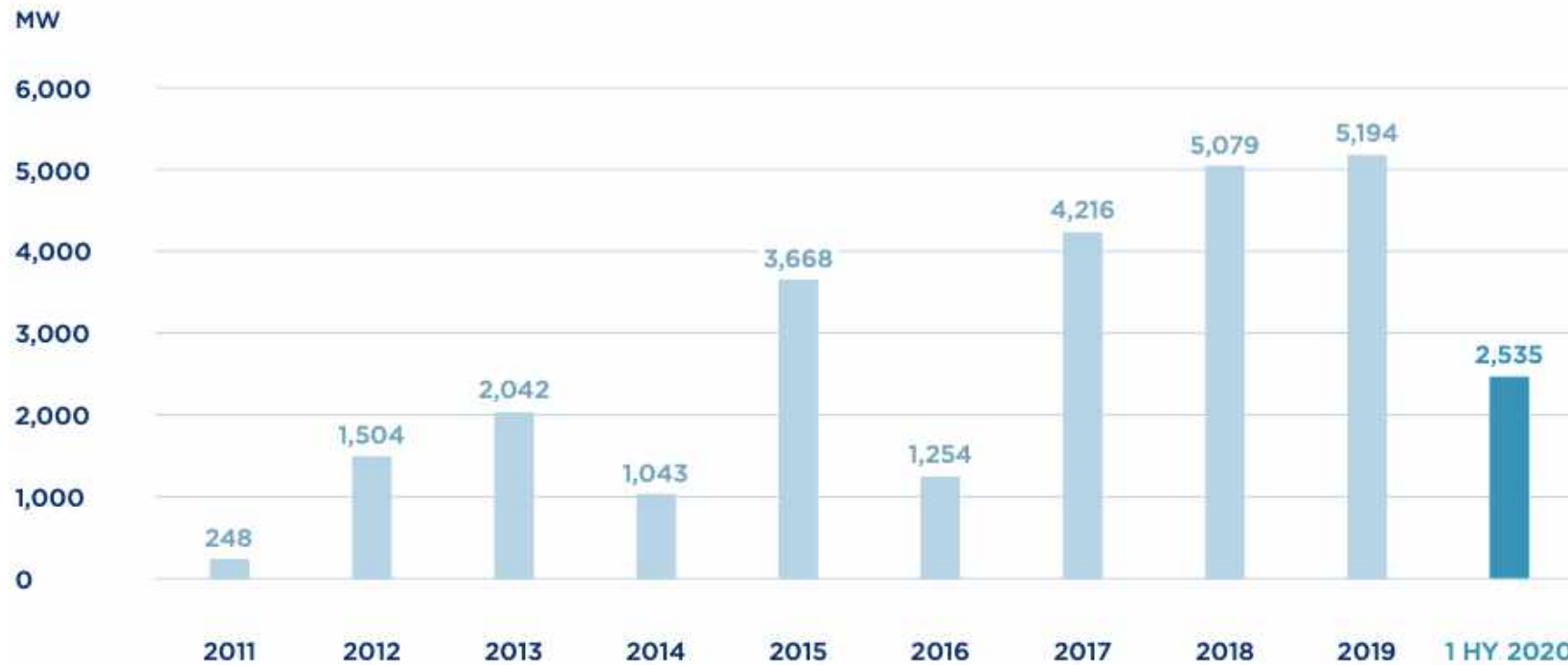
Full report available for free on WFO website: [www.wfo-global.org](http://www.wfo-global.org)



HY1 2020

# Robust growth

## Annually added global offshore wind capacity



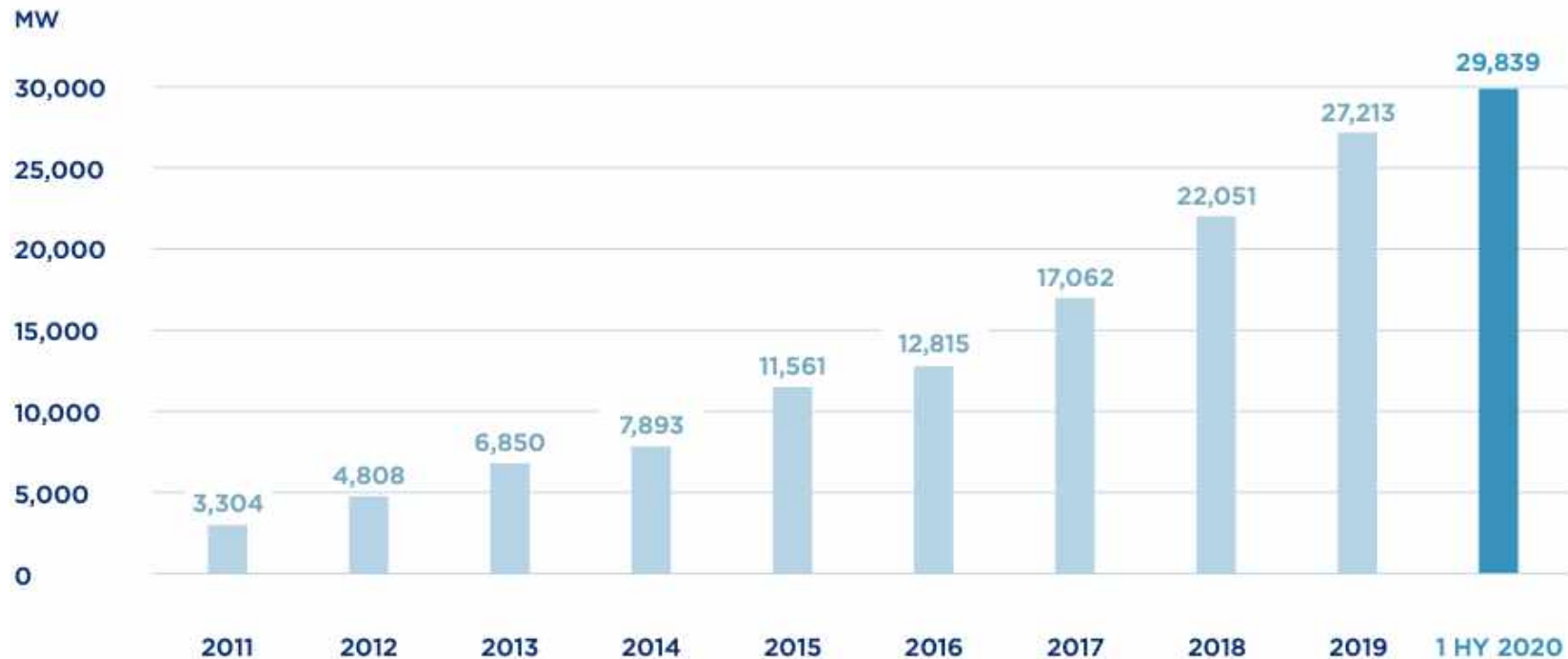
- Continued offshore wind growth **despite COVID-19**
- **2.5 GW** of globally added offshore wind capacity during HY1 2020
- Globally **10 new offshore wind farms** went into operation in UK, China, Germany, Portugal, Belgium and USA



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# Total global capacity Nearly 30 GW

## Global offshore wind capacity in operation — cumulative



In operation: all turbines installed and first electricity being generated

- Globally installed offshore wind capacity reached **nearly 30 GW**
- Second half of 2020 expected to see **continued global build-out** of offshore wind capacity
- Worldwide **157 offshore wind farms** are currently in operation:
  - **105 in Europe**
  - **50 in Asia**
  - **2 in USA**

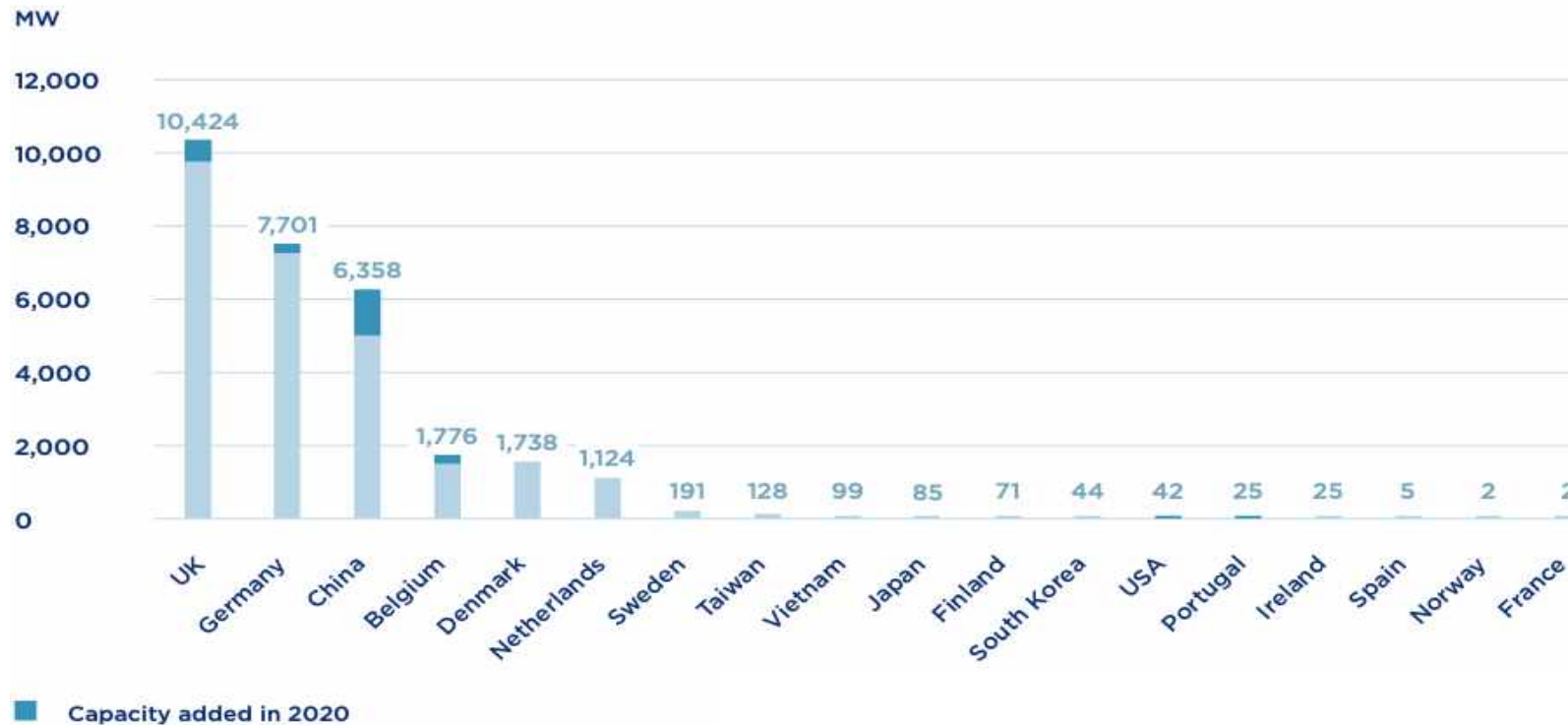


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# Top markets

## UK, Germany, China

Global offshore wind capacity in operation — by country



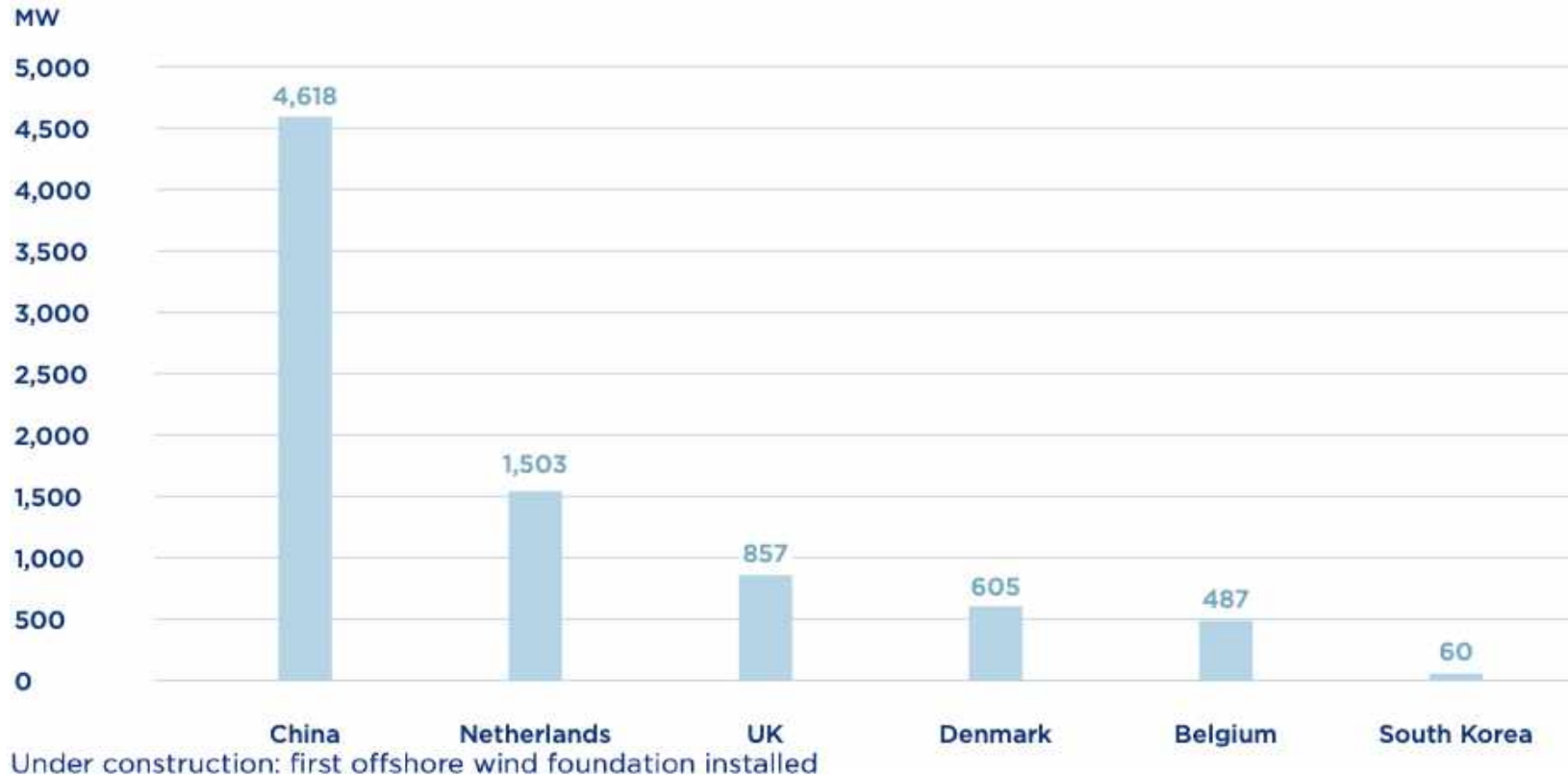
- The **UK** remains the world's biggest offshore wind market with more than **10 GW**
- **Germany** retains its **second** place with a total of 7.7 GW, but only 203 MW of new capacity
- **China** is growing rapidly with 1.4 GW of newly installed capacity



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# Construction China in the lead

Global offshore wind capacity under construction until end of HY1 2020



- 57% of offshore wind capacity currently under construction in **China**
- **Belgium** continues its **steady offshore build-out** and adds another 487 MW of offshore wind capacity which will take Belgium across the 2GW threshold
- Germany's disruptive regulatory changes are reflected by **zero construction activities in Germany** during the 1st HY 2020



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100% offshore wind

# Global Offshore Wind Report 1HY 2020 – China

Joseph Deng 邓梓俊  
29<sup>th</sup> Sep 2020





# China Offshore Wind 1HY 2020

|                                | Gw    | market share |
|--------------------------------|-------|--------------|
| Ørsted                         | 3.672 | 12.60%       |
| 国家能源集团                         | 2.036 | 6.99%        |
| RWE Renewable                  | 1.917 | 6.58%        |
| Vattenfall                     | 1.589 | 5.45%        |
| Macquarie Capital              | 1.533 | 5.26%        |
| 三峡集团                           | 1.157 | 3.97%        |
| Iberdrola                      | 0.964 | 3.31%        |
| Global Infrastructure Partners | 0.917 | 3.15%        |
| 华能集团                           | 0.915 | 3.14%        |
| Northland Power                | 0.903 | 3.10%        |

- **3 Global top 10 players last year with 14% market share in total**

(source GWEC)

- **6 Global top 10 OEM**
- **Until 2020 Sep, 11G under construction**



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# China FOW

- 2021 prototype south China sea
- Insufficient water depth: Water dept 30-50M range 100Km from shore.
- Old formula learn form foreigners might not work in FOW.
- South China sea FOW potential.



# Fit → Bid

|    |    |        |       |
|----|----|--------|-------|
| 30 | Mw | 0.785  | 华润    |
| 10 |    | 0.785  | 华润    |
| 15 |    | 0.77   | 华能    |
| 20 |    | 0.77   | 华能    |
| 20 |    | 0.77   | 华能    |
| 50 |    | 0.76   | 国电    |
| 30 |    | 0.765  | 中广核   |
| 30 |    | 0.79   | 华能    |
| 30 |    | 0.79   | 三峡新能源 |
| 30 |    | 0.79   | 国电投   |
| 30 |    | 0.79   | 中广核   |
| 40 |    | 0.795  | 国电投   |
| 10 |    | 0.795  | 大唐    |
| 25 |    | 0.795  | 中广核   |
| 55 |    | 0.795  | 华能    |
| 20 |    | 0.7388 | 上海电力  |

- **Evolution formula:** learn from foreigner, massive investment, state support deployment on large scale.
- **Delay Fit payment**
- **Government target 2030 60G**
- **Cost reduction pressure**





Chinese offshore wind vessel accident,Zhenjiang



Chinese offshore wind vessel accident,  
I vessel accident,Zhenjiang



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# Formula for everyone



- New energy order vital and messy
- China a “electrostate”?
- China is part of the solution of the problem
- New Evolution formula



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## Q&A Session

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## Question 1

In Asia-Pacific (ex China), which country do see leading the offshore wind sector in 10 yrs time?



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## Question 2

In the long term, will floating wind overtake fixed bottom foundations?

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## **Question 3**

**How can we store excess energy from offshore wind? What is your opinion about hydrogen?**



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## **Question 4**

**Would it be possible to establish a real global supply chain? What needs to be done?**

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## **Question 5**

**What are the prospects for Latin America  
and Africa?**

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## **Question 6**

**What has been the effect of COVID-19?**



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## **Question 7**

**How will China Offshore Wind fit into the  
global offshore wind market?**



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## **Question 8**

**What have the Chinese learned from their  
offshore wind build out?**

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## Question 9

**With the rapid growth in offshore wind, there seems to be a shortage of vessels on the horizon. What is your opinion?**

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## Question 10

**Do you expect to see the Chinese market opening up to foreign contractors in a material way at some point in the future? Can Chinese contractors keep up with the pace of growth?**



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## Question 11

Is China still a very much "Close market" for foreign service companies ?



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## **Question 12**

**What is the future for offshore wind turbines  
made in China?**

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## **Question 13**

**What is your opinion about the plans of GE to build an offshore wind plant in China?**

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## **Question 14**

**What is your forecast for offshore wind in the coming decade?**



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## **Closing**



## Information



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# Upcoming Webinars

The banner features a background image of several offshore wind turbines in the ocean. The text is overlaid on a dark green and blue gradient.

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**AWEA WEBINAR SERIES 2020 - TECHNICAL SESSION**  
Offshore Wind in Asia: Early Technical Assessments and Installation Implications

TUESDAY, 6 OCTOBER 2020 - 3 PM SGT

The banner features a background image of a close-up of an offshore wind turbine against a blue sky and sea. The text is overlaid on a blue and orange gradient.

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**AWEA WEBINAR SERIES 2020 - MARKET SESSION**  
Outlook for the Taiwanese Offshore Wind Market

TUESDAY, 20 OCTOBER 2020 - 3 PM SGT

# AWEA WEBINAR SERIES 2020 - MARKET SESSION

Highlights of WFO's Global Offshore Wind Report 1H2020

TUESDAY, 29 SEPTEMBER 2020 - 3 PM SGT

## Thank You