



**OFFSHORE HELICOPTER SAFETY  
WIND FARM HELICOPTER OPERATIONS**

**17 Sept 2019**

## INTRODUCTION



INTERNATIONAL  
**HELICOPTER**  
SERVICE PROVIDER



MAIN FOCUS ON  
**OFFSHORE**  
**ACTIVITIES**



**+60** HELICOPTERS  
WITH A SOLID  
ORDER BOOK



EVOLVING TO  
**TAILORMADE**  
SOLUTIONS



## A BRIEF HISTORY



1998  
**START-UP NHV**



1999  
**MS BELGIUM**



2001  
**HEMS**



2006  
**OIL & GAS**



2006  
**MS NETHERLANDS**



2006  
**SAR**

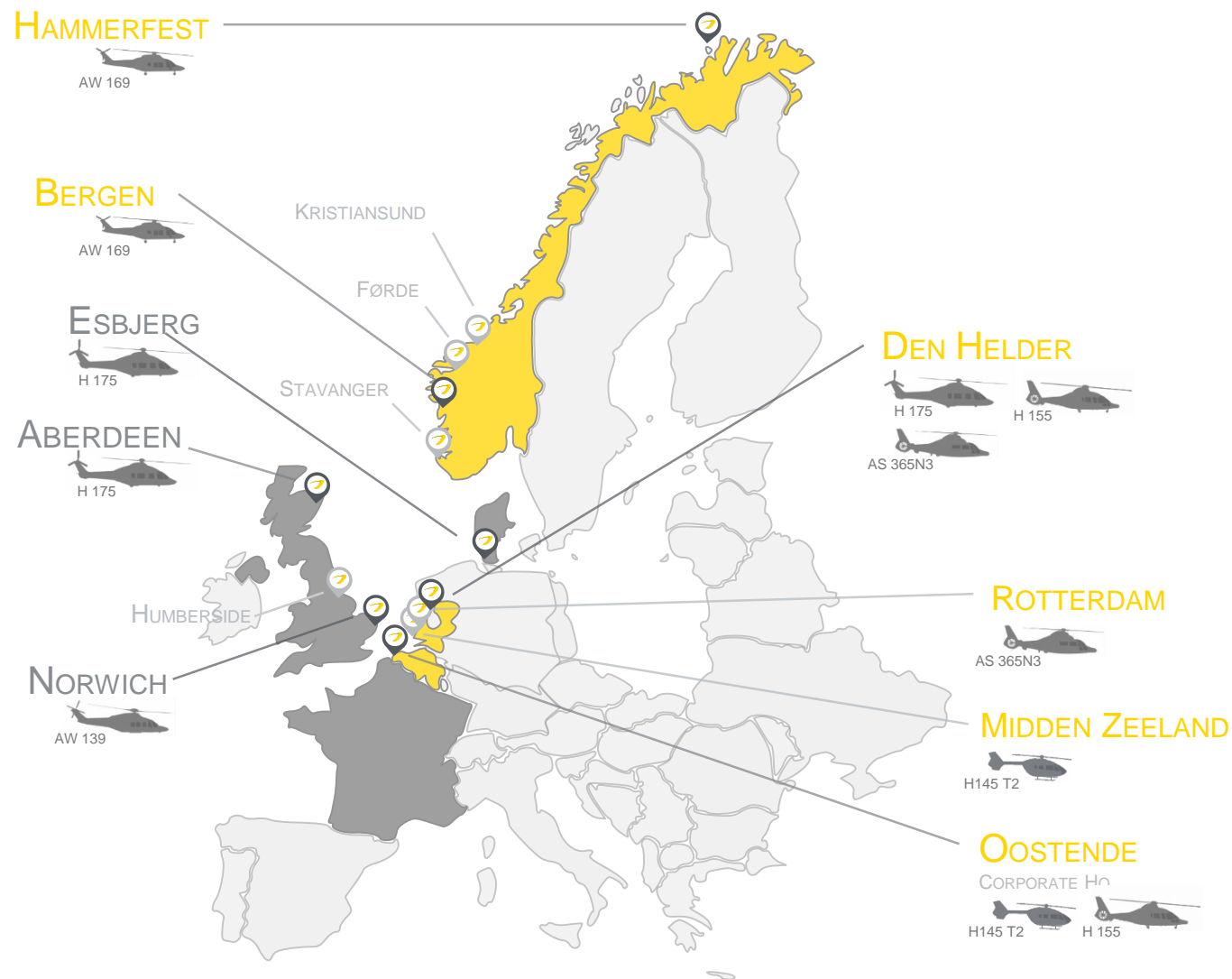


2006  
**MS NORWAY**

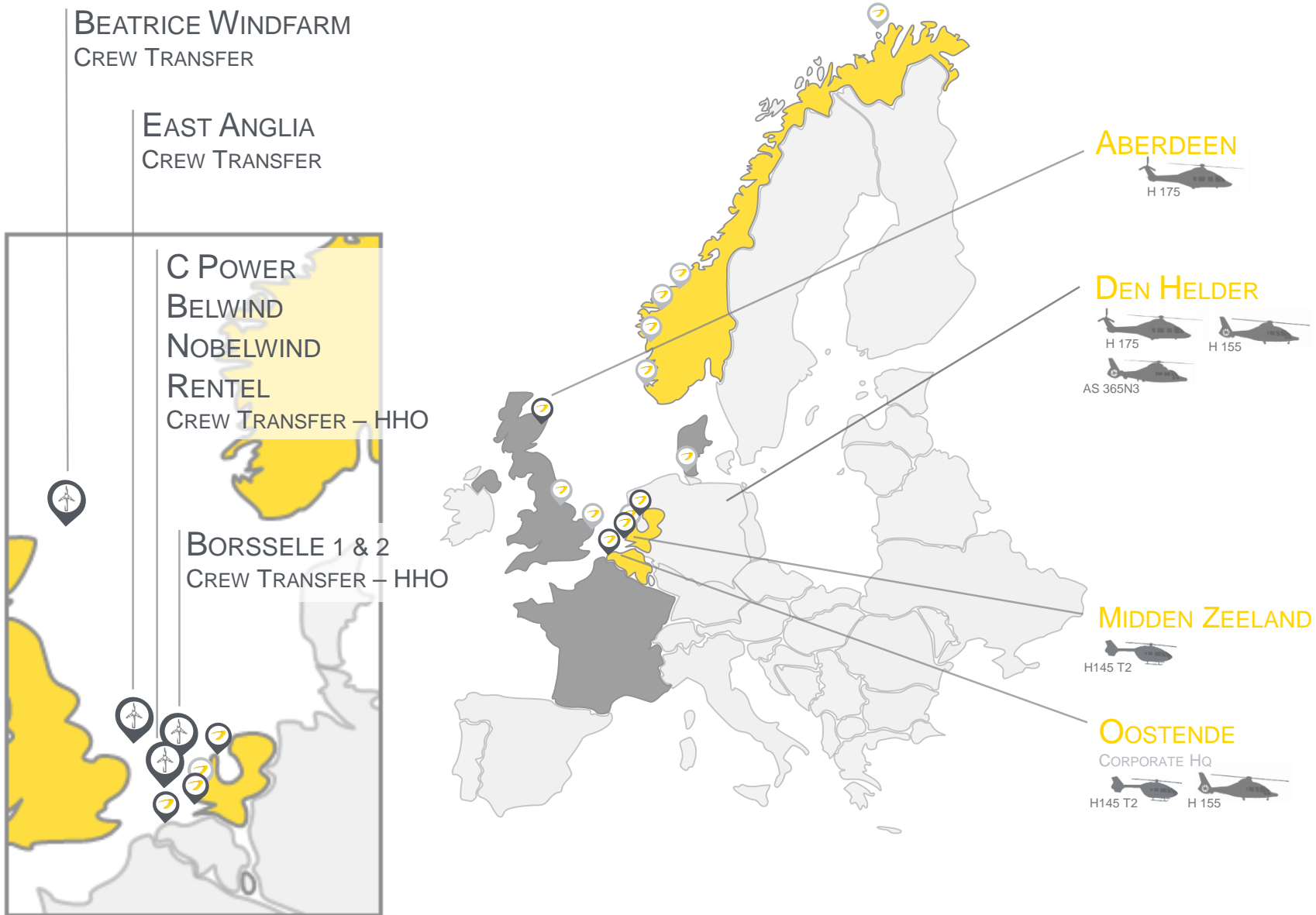


2017  
**FRENCH NAVY**

# WHERE WE OPERATE – NORTH SEA



# SUPPORTING OFFSHORE WIND



**Ørsted**

**SIEMENS**

**SENVION**  
wind energy solutions

**Van Oord**   
Marine ingenuity

**DEME**  
OFFSHORE

 **elia group**  
Elio | 50Hertz | EGI

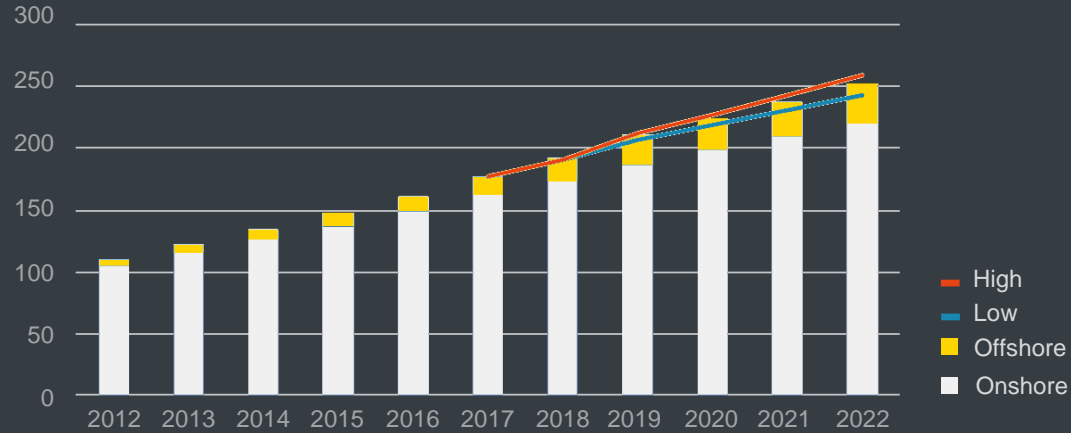
 **otary**

 **SWIRE BLUE OCEAN**

 **Tennet**  
Taking power further

**HSM** 

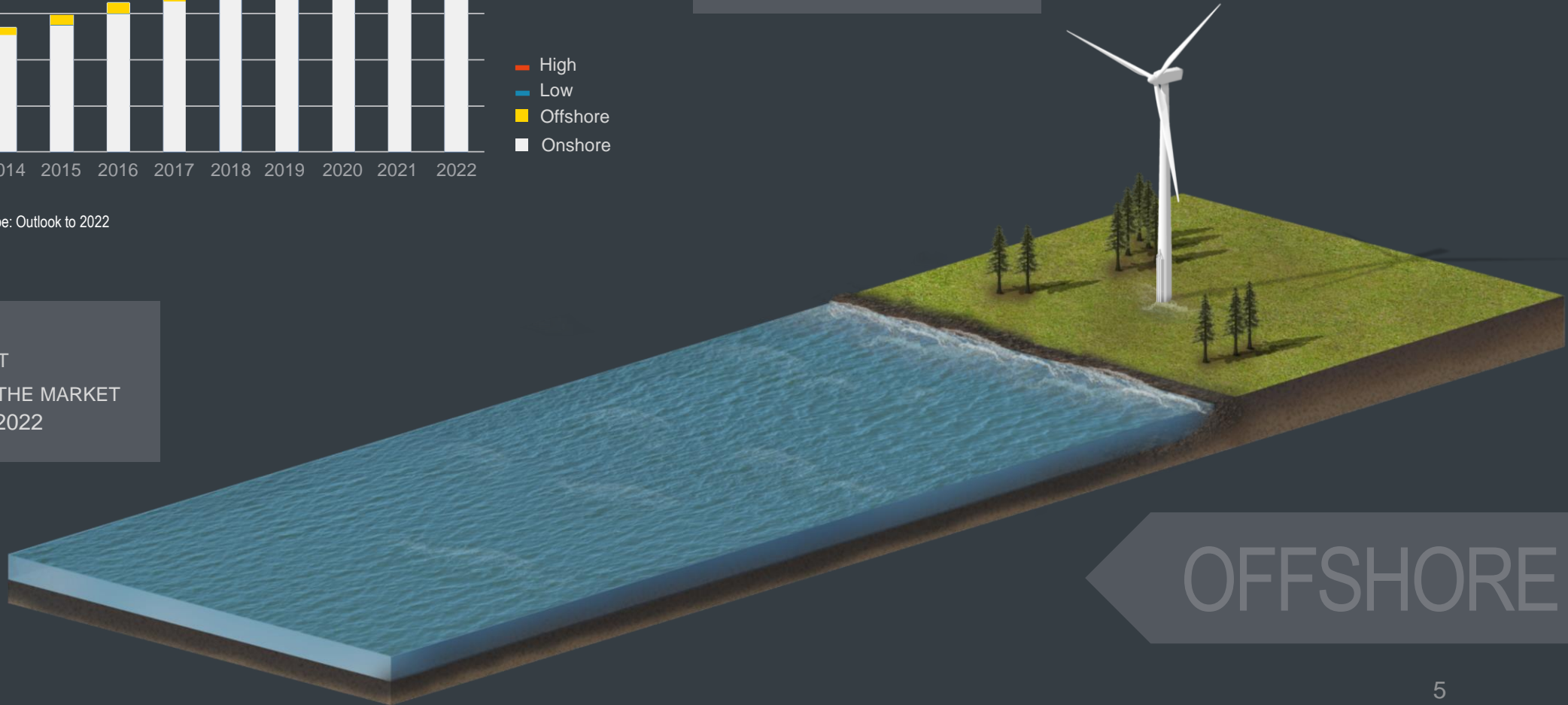
# OFFSHORE SHARE MARKET TRENDS



WindEurope  
Wind Energy in Europe: Outlook to 2022

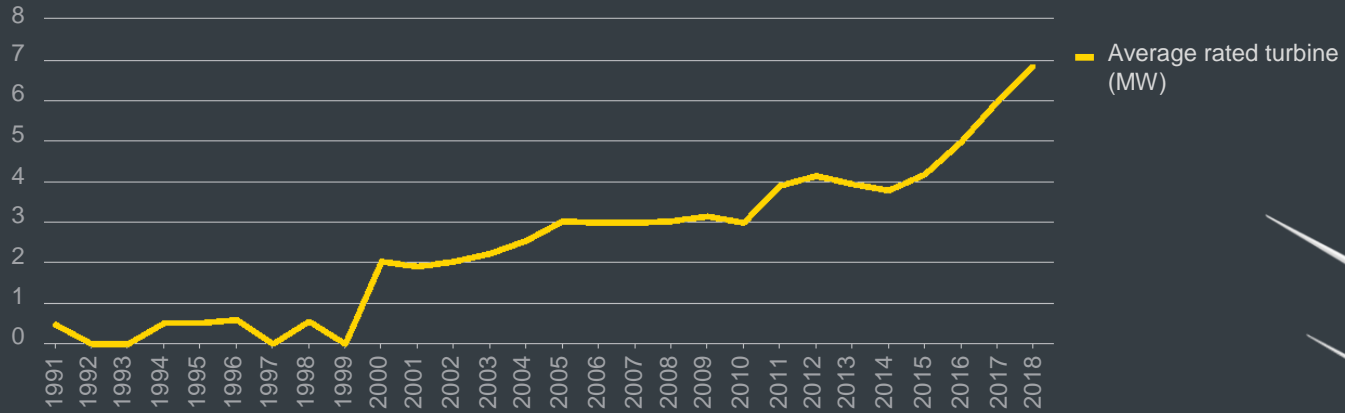
**2019**  
WILL BE A NEW  
**RECORD** YEAR IN WIND  
INSTALLATIONS

**OFFSHORE**  
WILL REPRESENT  
**20%** OF THE MARKET  
BY 2022



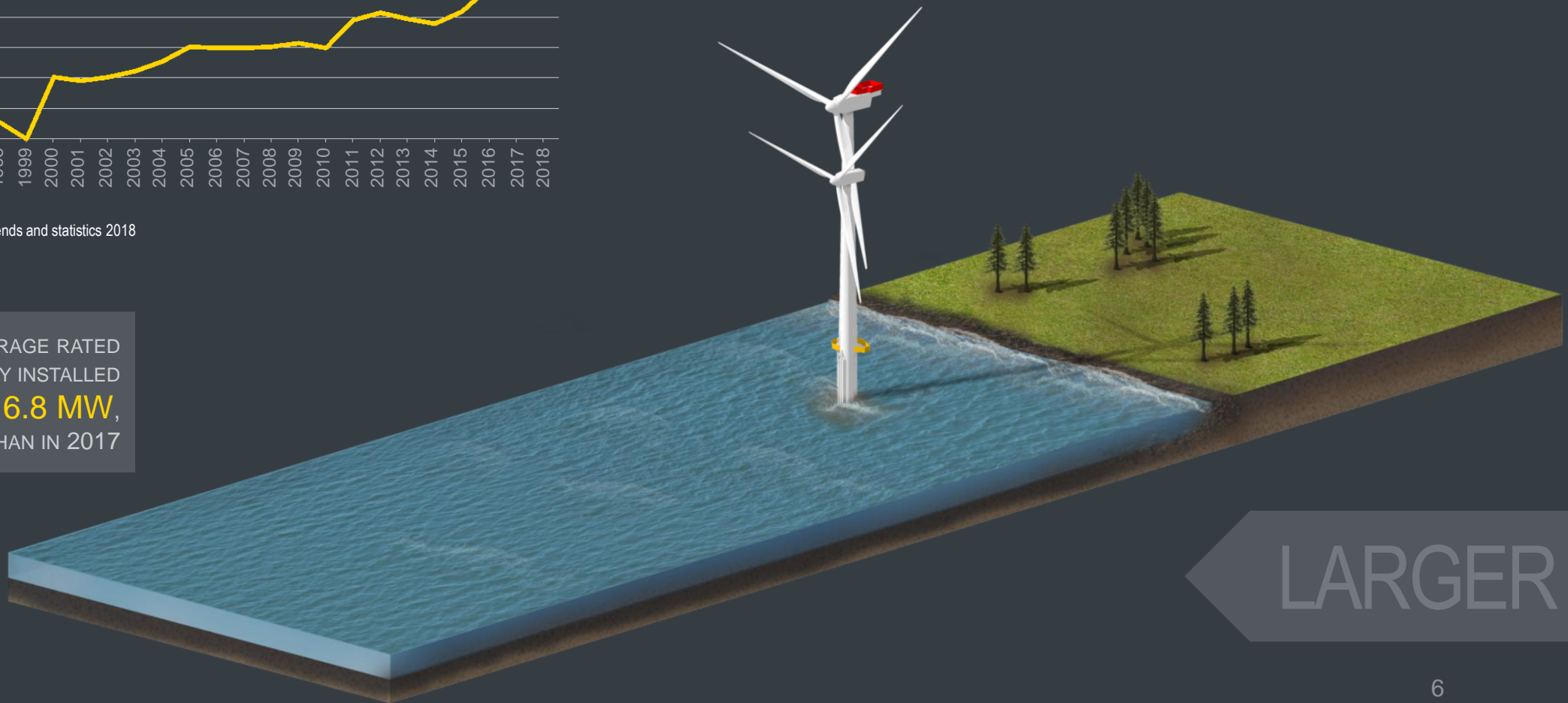
# TURBINE SIZE MARKET TRENDS

YEARLY AVERAGE OF NEWLY INSTALLED OFFSHORE WIND TURBINE RATED CAPACITY (MW)



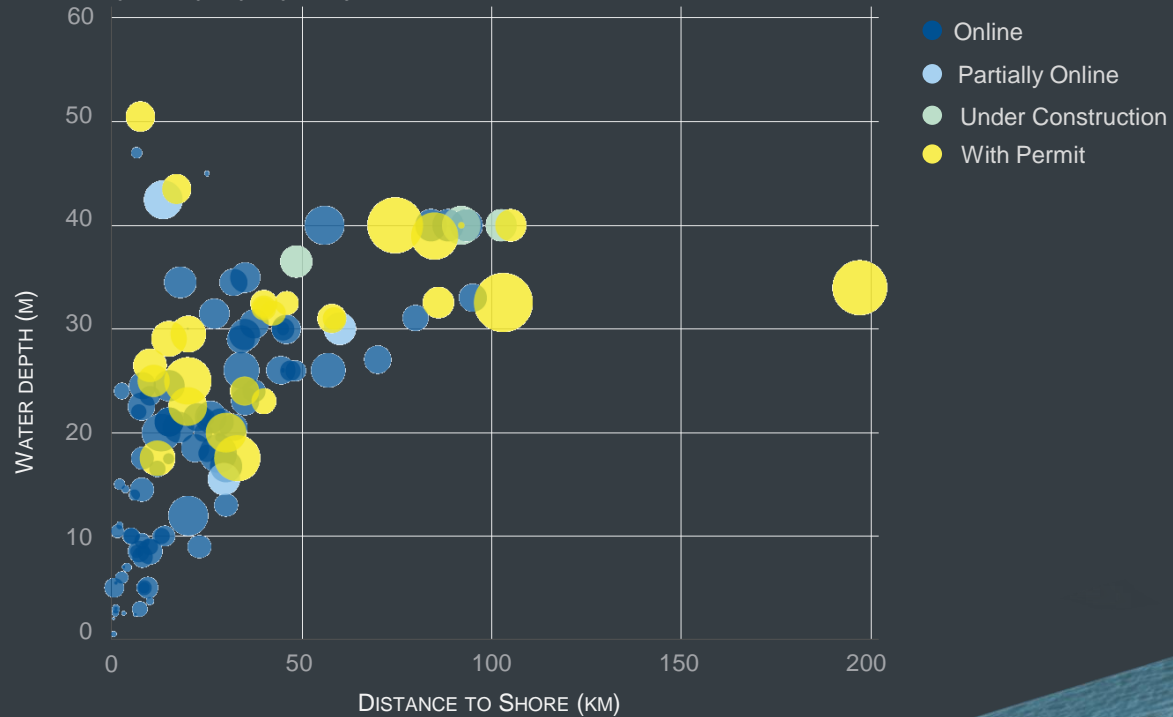
WindEurope  
Offshore Wind in Europe – Key trends and statistics 2018

IN 2018 THE AVERAGE RATED CAPACITY OF NEWLY INSTALLED TURBINES WAS **6.8 MW**, 15% LARGER THAN IN 2017



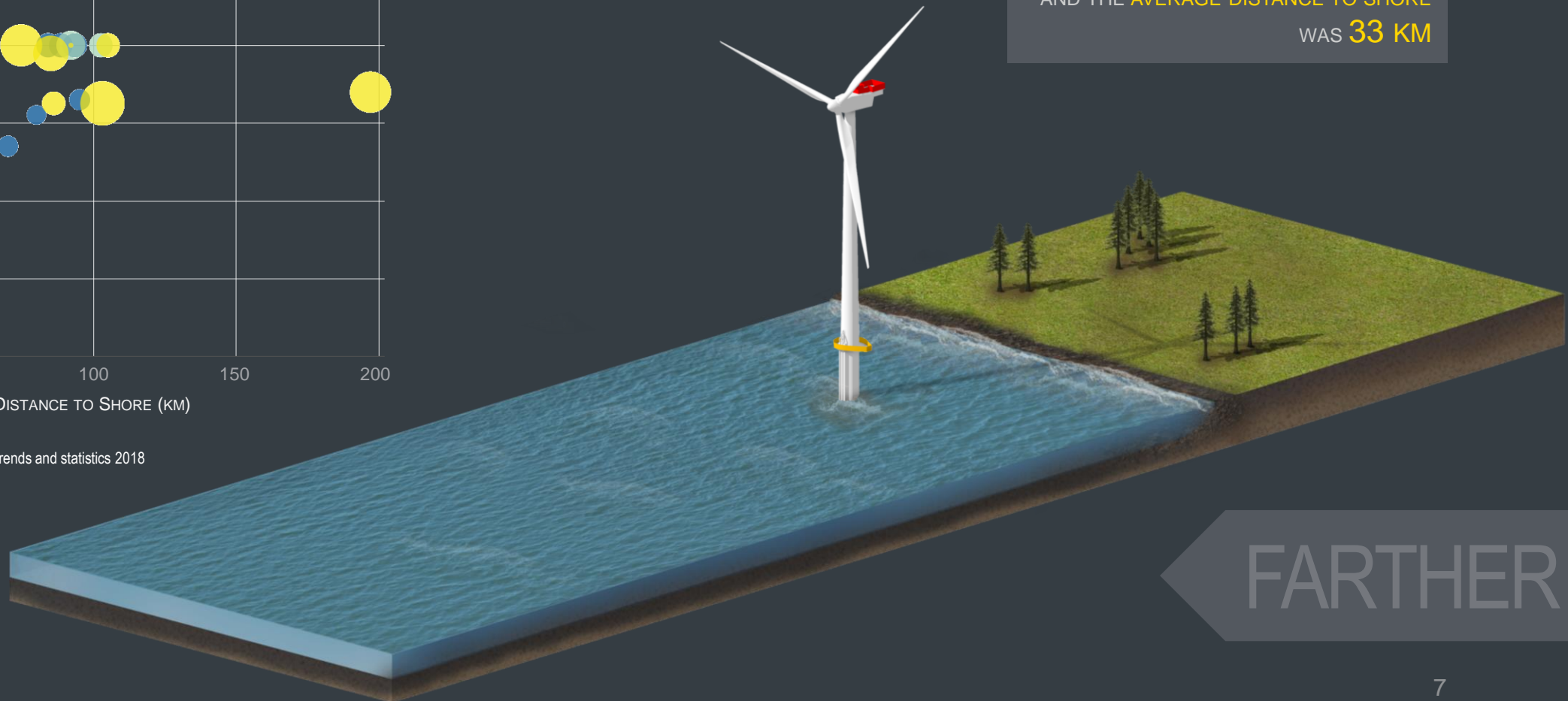
## DISTANCE TO SHORE MARKET TRENDS

AVERAGE WATER DEPTH AND DISTANCE TO SHORE OF BOTTOM-FIXED OFFSHORE WIND FARMS, ORGANISED BY DEVELOPMENT STATUS. THE SIZE OF THE BUBBLE INDICATES THE OVERALL CAPACITY OF THE SITE.



WindEurope  
Offshore Wind in Europe – Key trends and statistics 2018

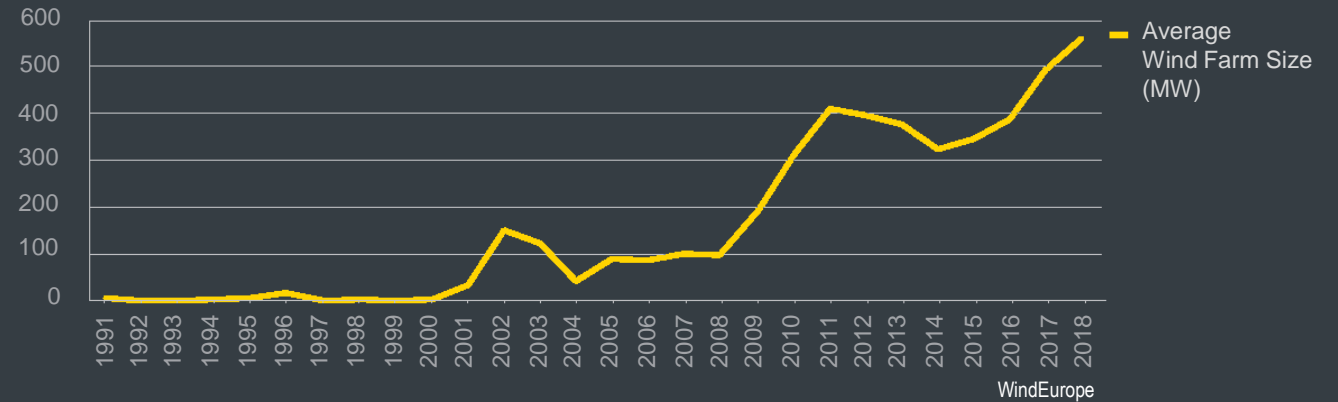
THE AVERAGE WATER DEPTH OF OFFSHORE WIND FARMS UNDER CONSTRUCTION IN 2018 WAS **27.1 M** AND THE AVERAGE DISTANCE TO SHORE WAS **33 KM**



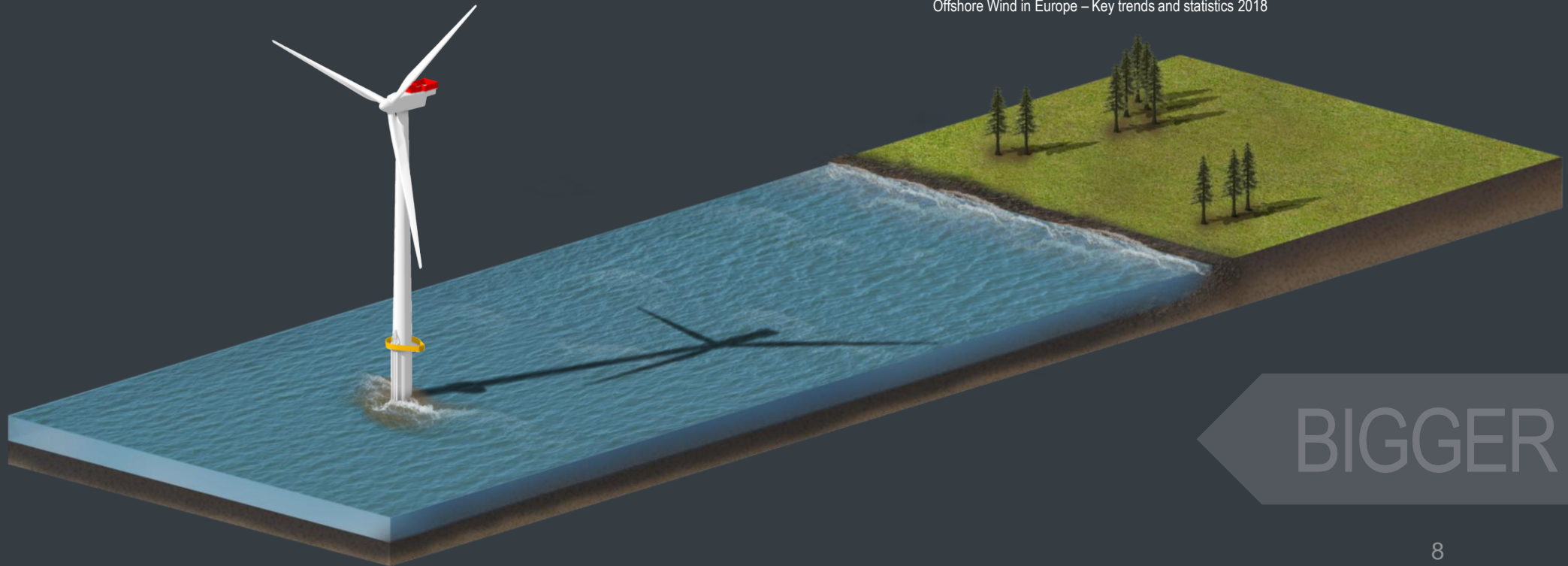
## WIND FARM SIZE MARKET TRENDS

IN THE LAST TEN YEAR, THE AVERAGE OFFSHORE WIND FARM HAS INCREASED IN SIZE FROM 79,6 MW IN 2007 TO 561 MW IN 2018

AVERAGE SIZE OF COMMERCIAL OFFSHORE WIND FARMS IN CONSTRUCTION AND GRID-CONNECTED AN THE GIVEN YEAR



WindEurope  
Offshore Wind in Europe – Key trends and statistics 2018



BIGGER



# A SEA OF CHALLENGES MARKET EVOLUTION

THE IDENTIFIED EVOLUTIONS MEAN:

*For maximum yield, an increased amount of challenges needs to be overcome*

*Farms and Turbines continue to increase in size*



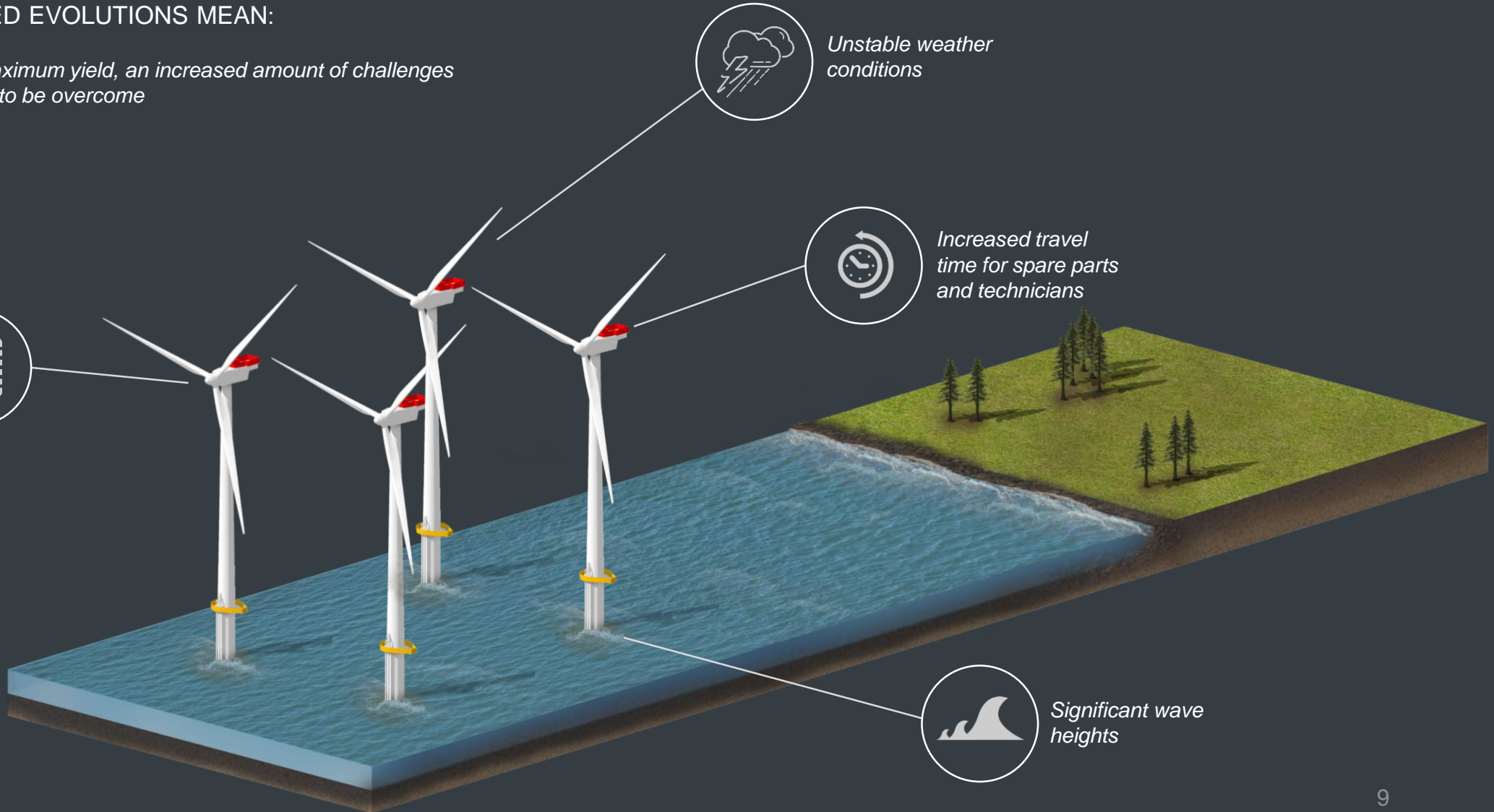
*Unstable weather conditions*



*Increased travel time for spare parts and technicians*



*Significant wave heights*



## A SEA OF CHALLENGES THE HELICOPTER SOLUTION

Helicopters are used in combination with other vessels for fast and wave-independent transfers directly to the top of the turbine, and enable a range of useful service tasks including the transfer of technicians, spare parts and tools.



Higher uptime of turbine due to **SHORTER TROUBLE SHOOTING CYCLES & SHORTER SERVICE INTERVALS**



More service days per year and better predictability due to **HIGHER VERSATILITY AND AVAILABILITY** of helicopter



Higher productive man hours per day due to **SHORTER TRAVEL TIME**



Lower accidents/incidents due to significantly **BETTER HEALTH, SAFETY AND ENVIRONMENTAL RECORDS**

## THE HELICOPTER SOLUTION



WIND FARM  
HELICOPTER OPERATIONS

# REGULATIONS



## USE OF HELICOPTER In Windfarm – Core Topic



### OIL AND GAS

- MATURE ESTABLISHED INDUSTRY
- STANDARDIZED PREDICTABLE OPERATION WITH COMMON SOP ACROSS OPERATORS
- LARGER / MULTIPILOT FLIGHT OPERATIONS



### OFFSHORE WIND

- YOUNG INDUSTRY / QUICKLY CATCHING UP
- MORE DIVERSE TYPES OF OPERATIONS AGAINST FEWER GUIDELINES AND INDIVIDUAL SOP'S
- SMALLER AIRCRAFT, WITH AT TIMES SINGLE PILOT OPERATIONS



## USE OF HELICOPTER In Windfarm – Core Topic



DUAL PILOT

VS



SINGLE PILOT



# USE OF HELICOPTER In Windfarm – Core Topic



## SECTOR WIDE COMMON GUIDELINES



**OFFSHORE RENEWABLES  
AVIATION GUIDANCE  
(ORAG)**  
GOOD PRACTICE GUIDELINES FOR  
OFFSHORE RENEWABLE ENERGY  
DEVELOPMENTS



**HELI OFFSHORE**  
A COMMON LANGUAGE,  
FRAMEWORK AND PRIORITIES  
FOR THE INDUSTRY'S  
COLLABORATION FOR  
SAFETY



WIND FARM  
HELICOPTER OPERATIONS

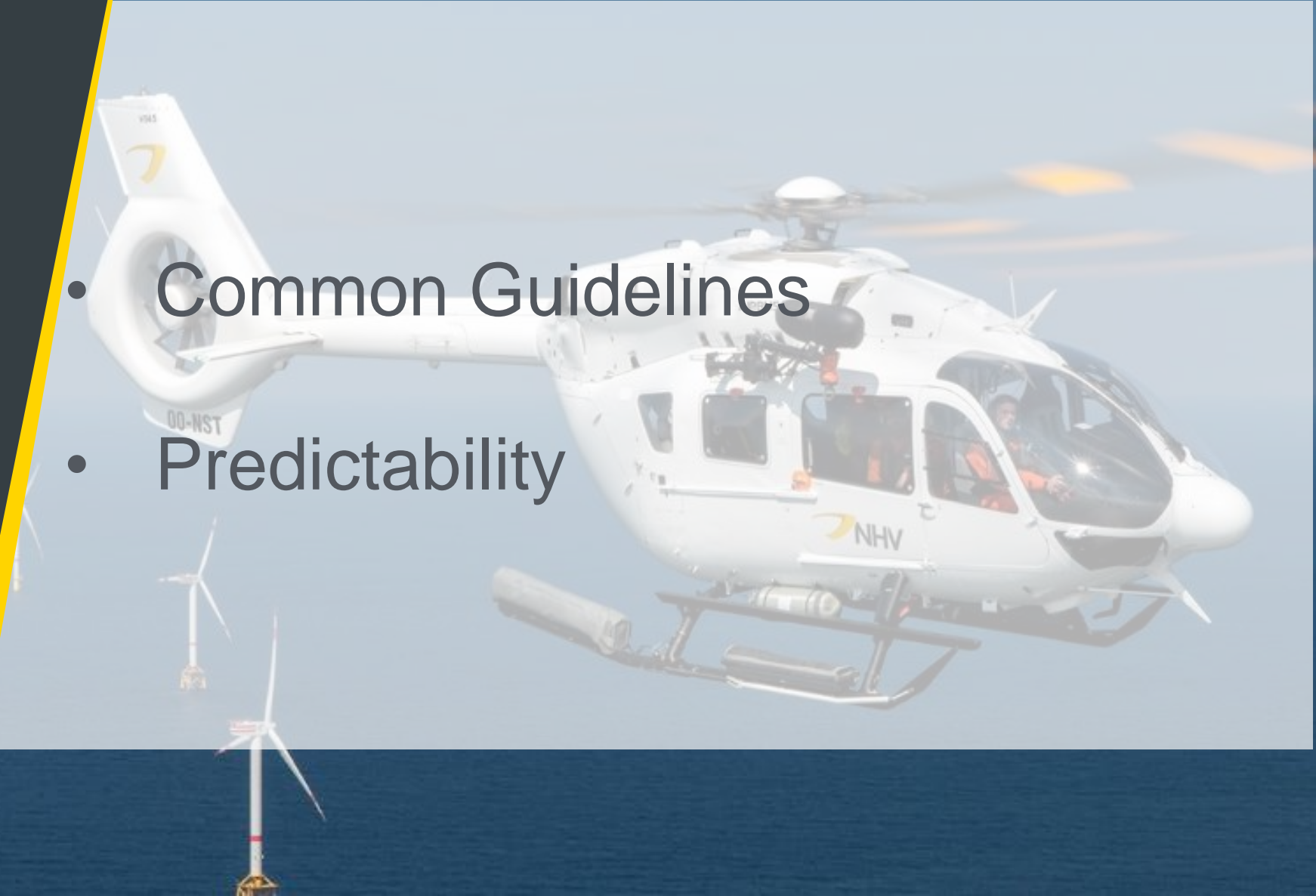
CONCLUSION





## CONCLUSION

- Common Guidelines
- Predictability





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