



**EWEA**  
THE EUROPEAN WIND ENERGY ASSOCIATION



# Evolution of the offshore wind energy industry

## Offshore 2011 pre-event seminar - Amsterdam

**Jacopo Moccia**

*Head of Policy Analysis  
European Wind Energy Association*

28 November 2011

# Presentation outline



- The first offshore wind farm
- The biggest offshore wind farm (to date)
- Installed capacity
- Market shares
- Future growth
- Trends

# First offshore wind farm

Vindeby (DK), online in 1991

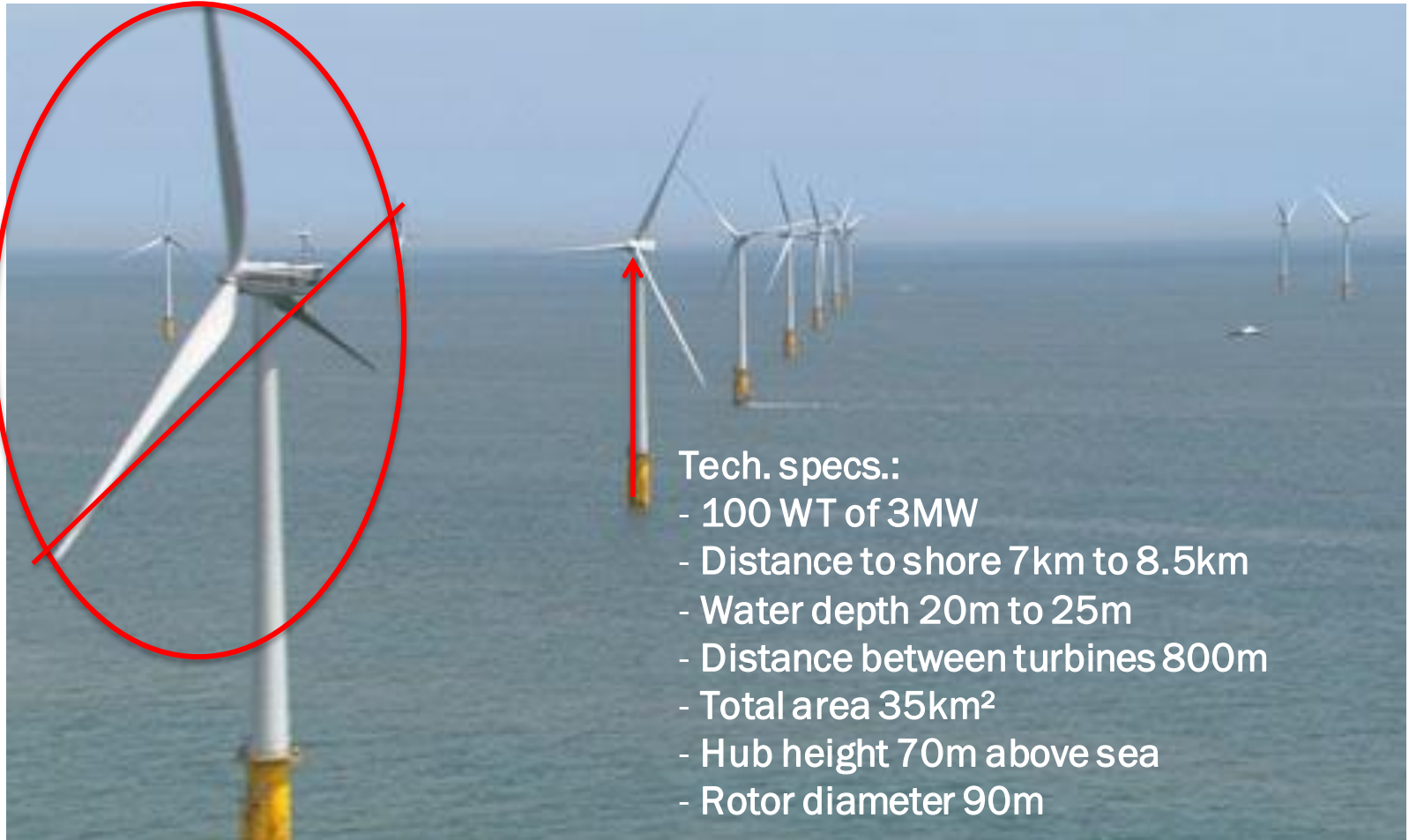
Tech. specs.:

- 11 WT of 450 kW (0.45 MW)
- Distance to shore 1.5 km to 3 km
- Water depth 2m to 6m
- Distance between turbines 500m
- Total area 3km<sup>2</sup>
- Hub height 35m above sea level
- Rotor diameter 35m



# Largest offshore wind farm (to date)

Thanet (UK), online in 2010

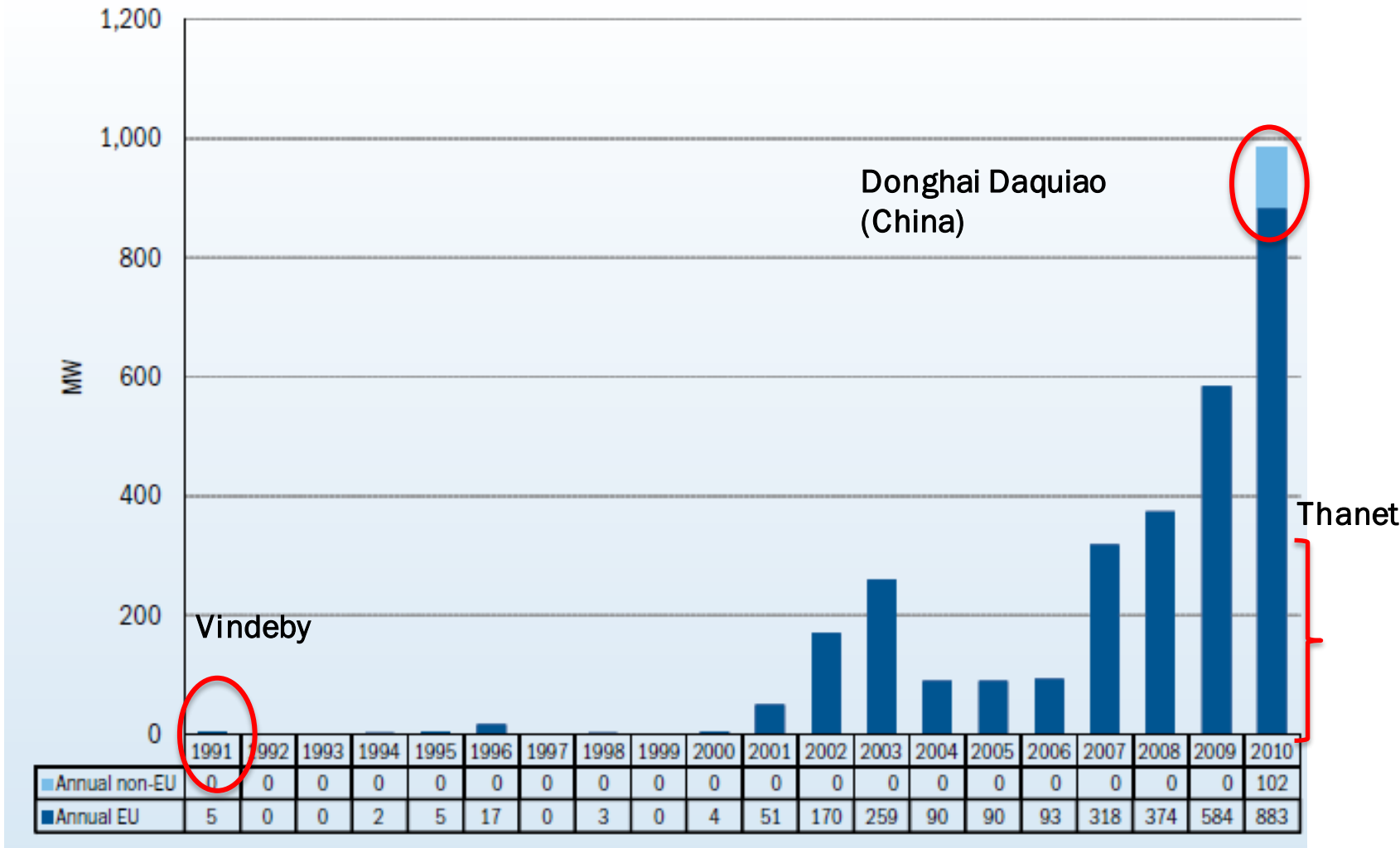


Tech. specs.:

- 100 WT of 3MW
- Distance to shore 7km to 8.5km
- Water depth 20m to 25m
- Distance between turbines 800m
- Total area 35km<sup>2</sup>
- Hub height 70m above sea
- Rotor diameter 90m

# Installed capacity

## Global annual installed capacity

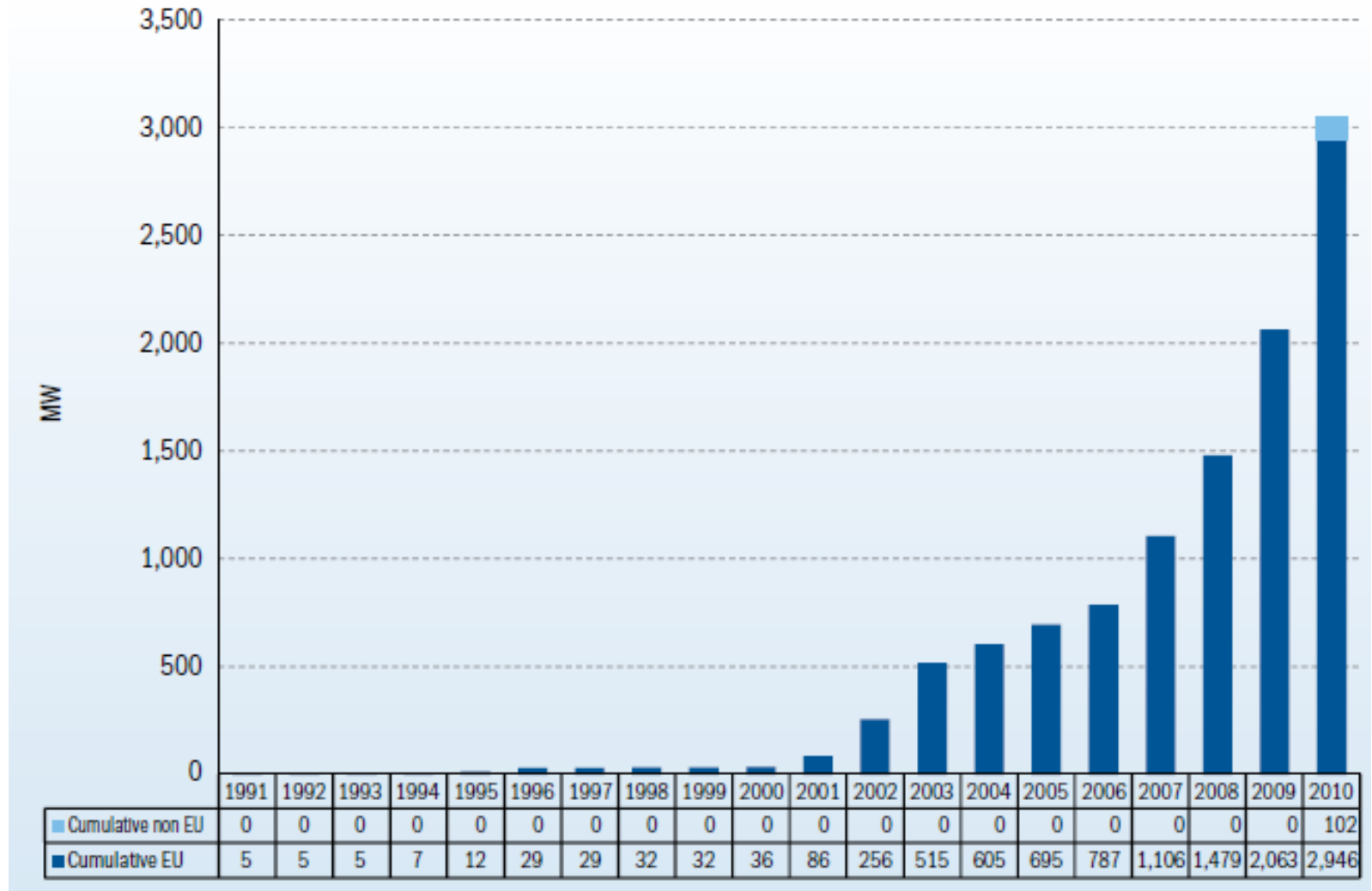


# Installed capacity



**EWEA**  
THE EUROPEAN WIND ENERGY ASSOCIATION

## Global cumulative installed capacity

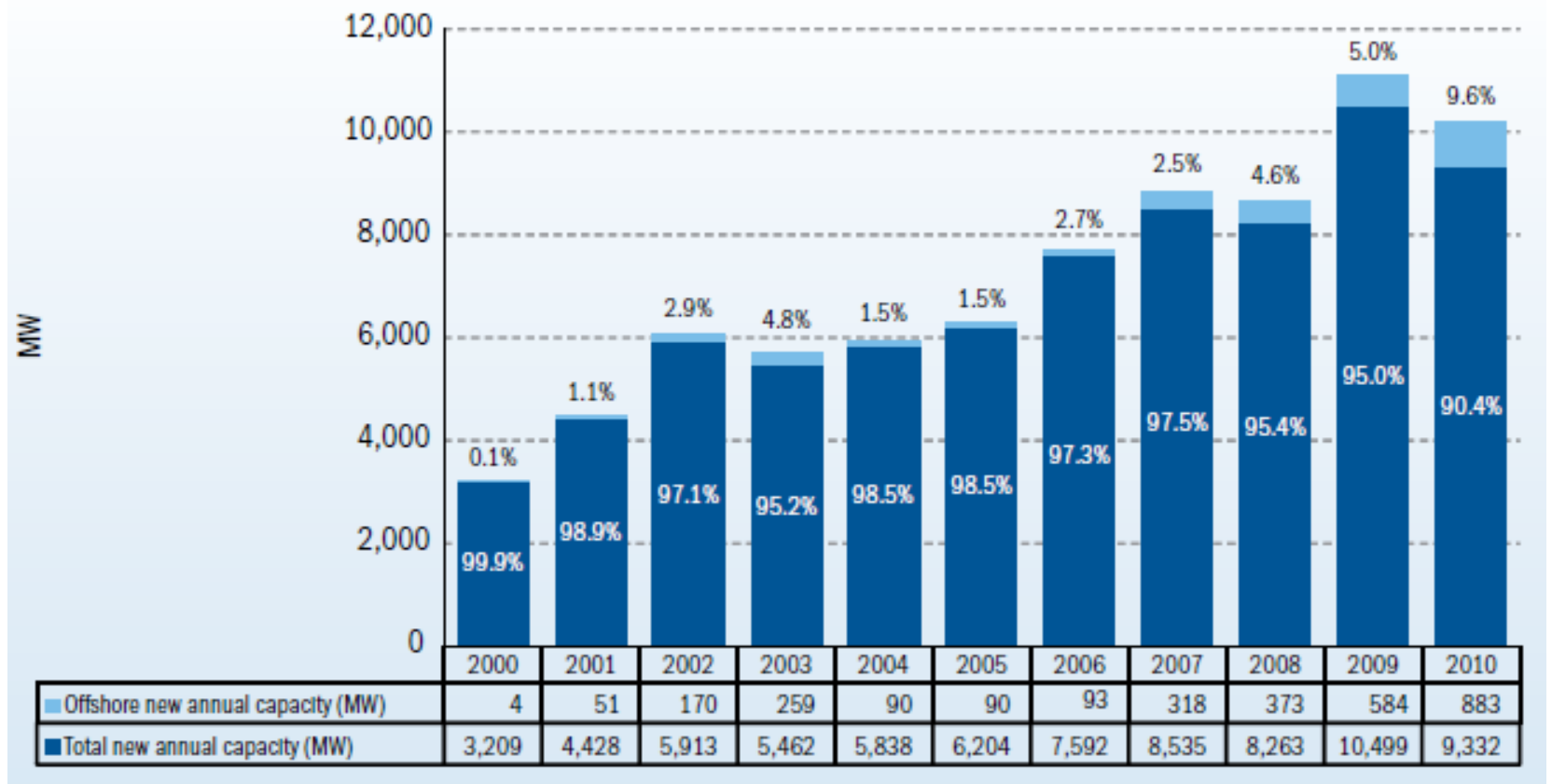




# Installed capacity



## Share of new offshore capacity and share of new onshore capacity

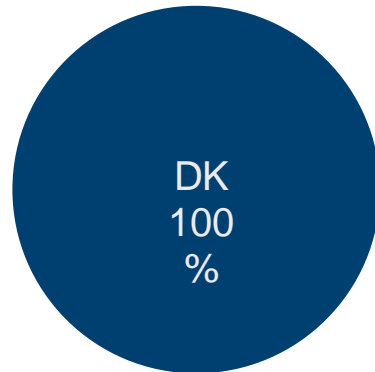


# Market shares

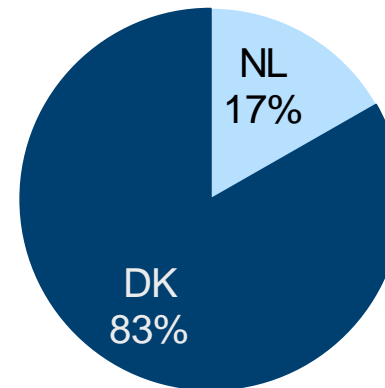


**EWEA**  
THE EUROPEAN WIND ENERGY ASSOCIATION

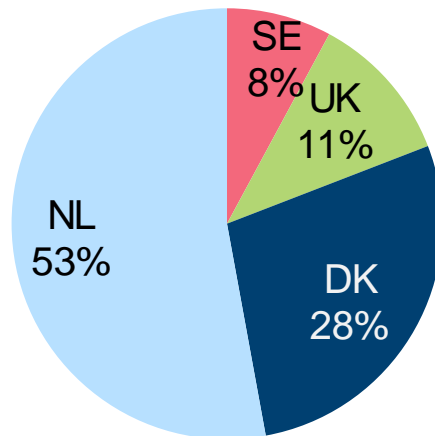
1991  
total 4.95 MW



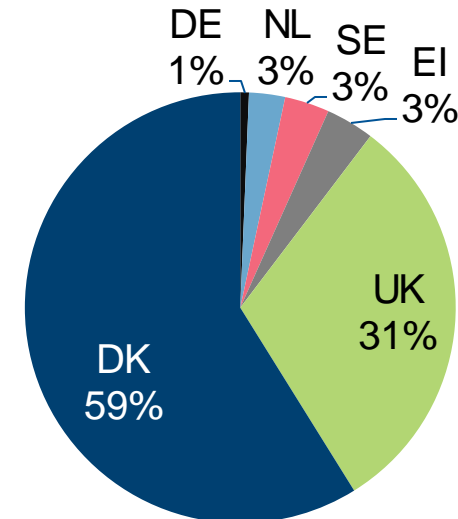
1995  
total 11.95 MW



2000  
total 35.5 MW



2005  
total 695 MW



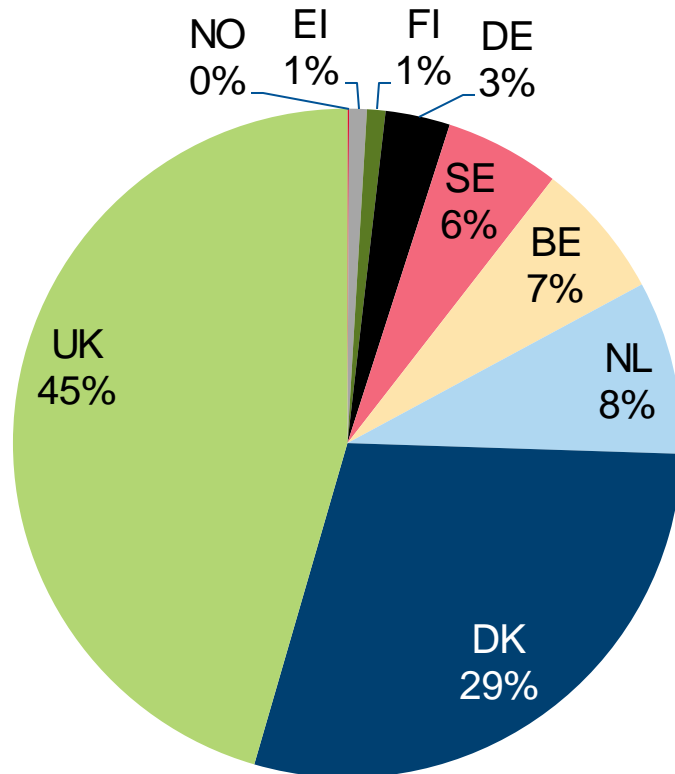


# Market shares

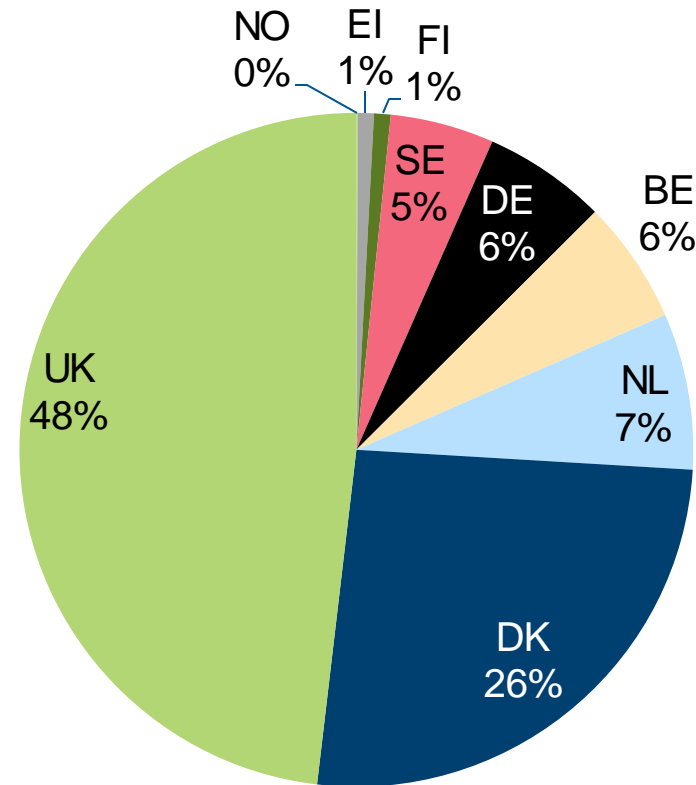


**EWEA**  
THE EUROPEAN WIND ENERGY ASSOCIATION

2010  
total 2,946 MW



2011 (30 June)  
total 3,295 MW

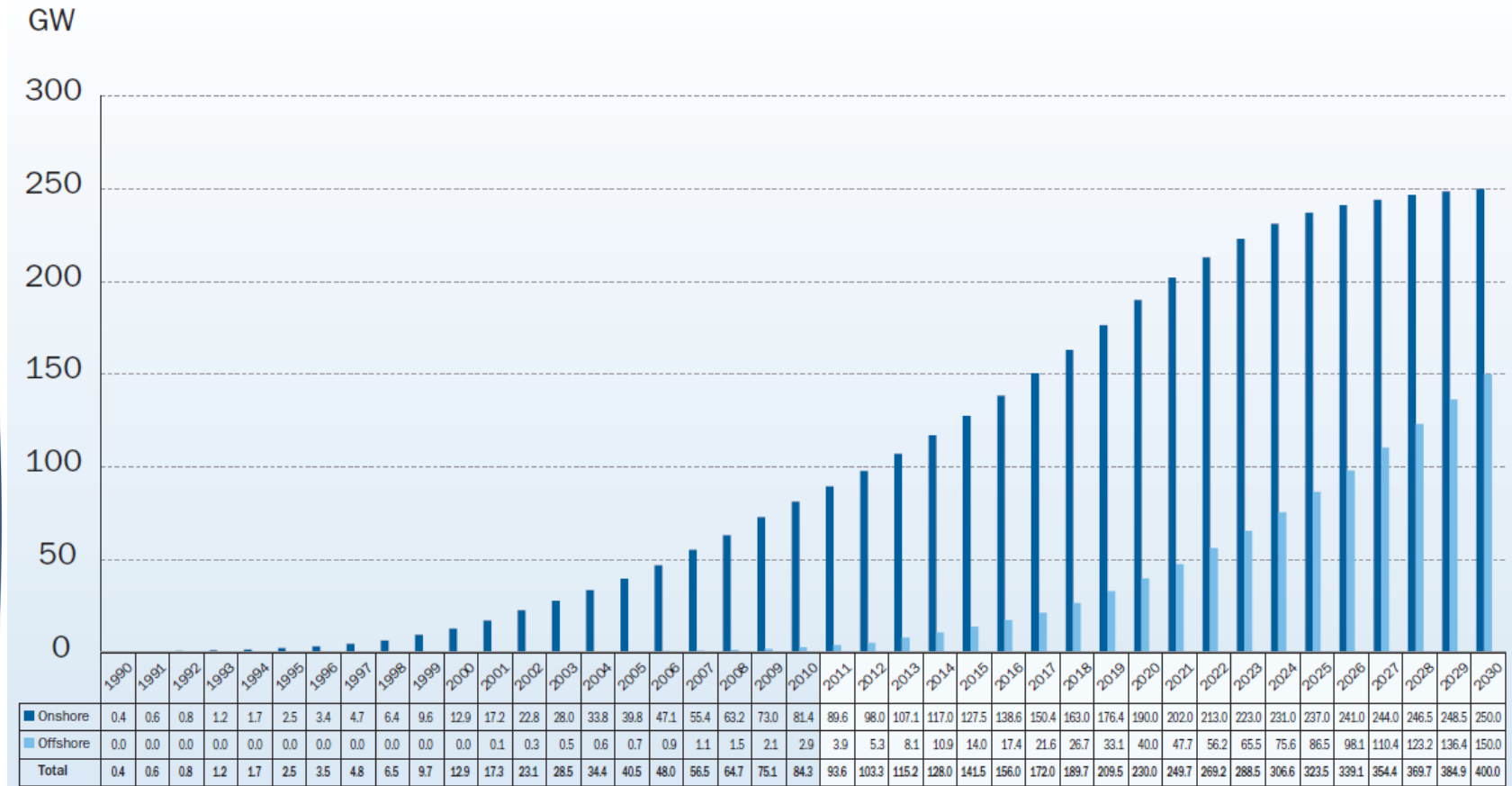


# Future growth



**EWEA**  
THE EUROPEAN WIND ENERGY ASSOCIATION

## EU cumulative installations onshore/offshore to 2030

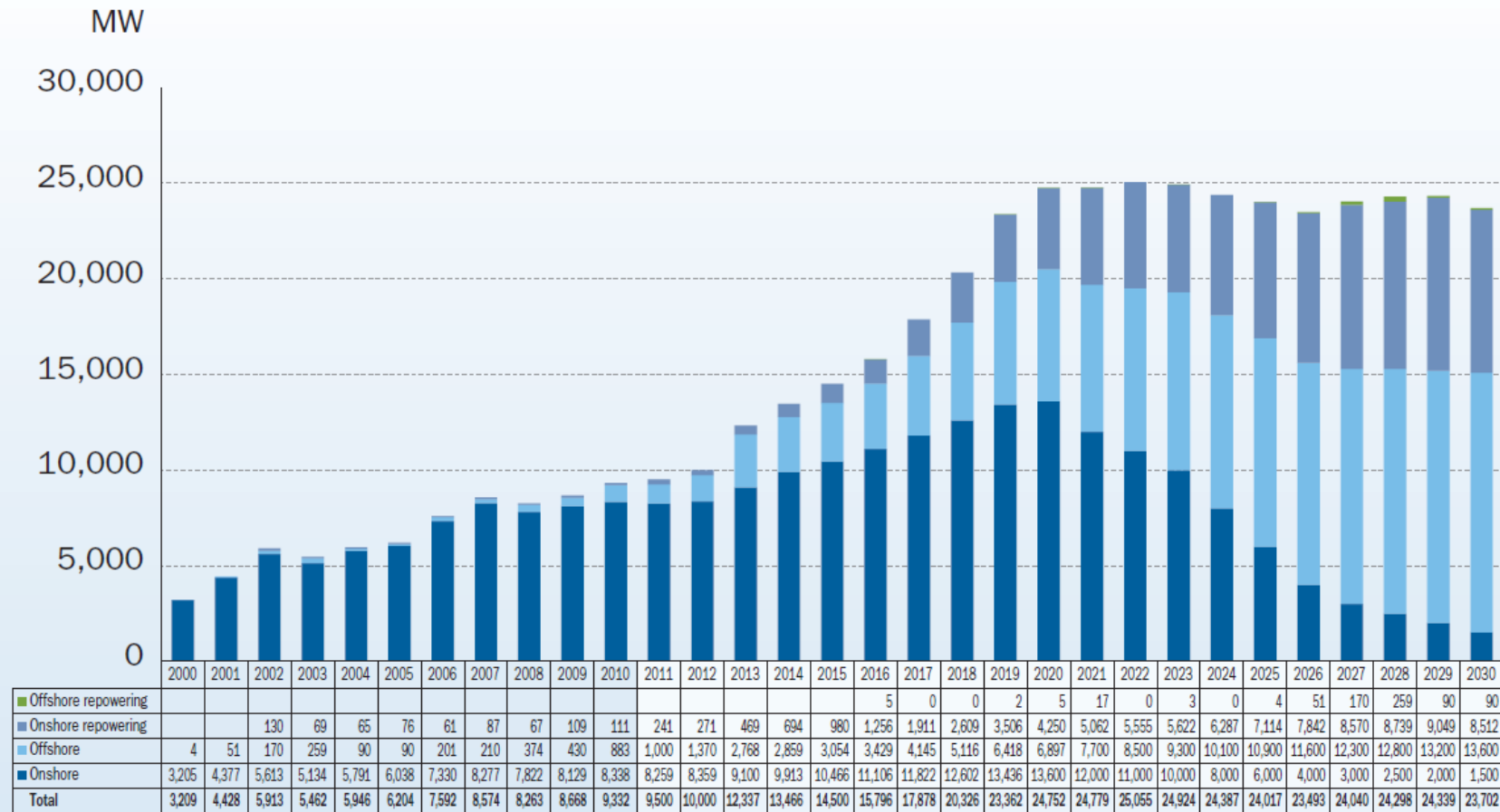


# Future growth



**EWEA**  
THE EUROPEAN WIND ENERGY ASSOCIATION

## EU annual installations onshore/offshore to 2030

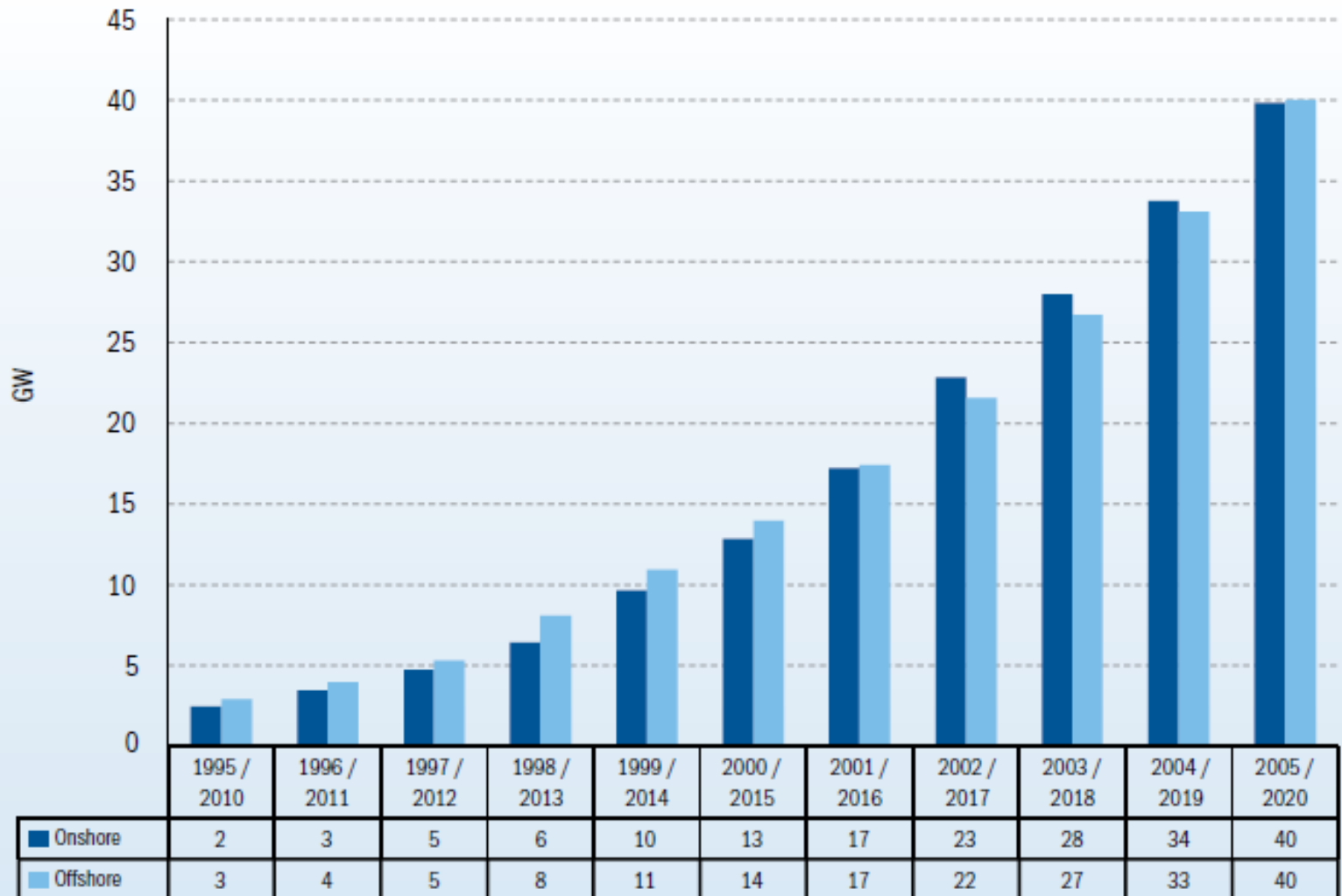


# Future growth

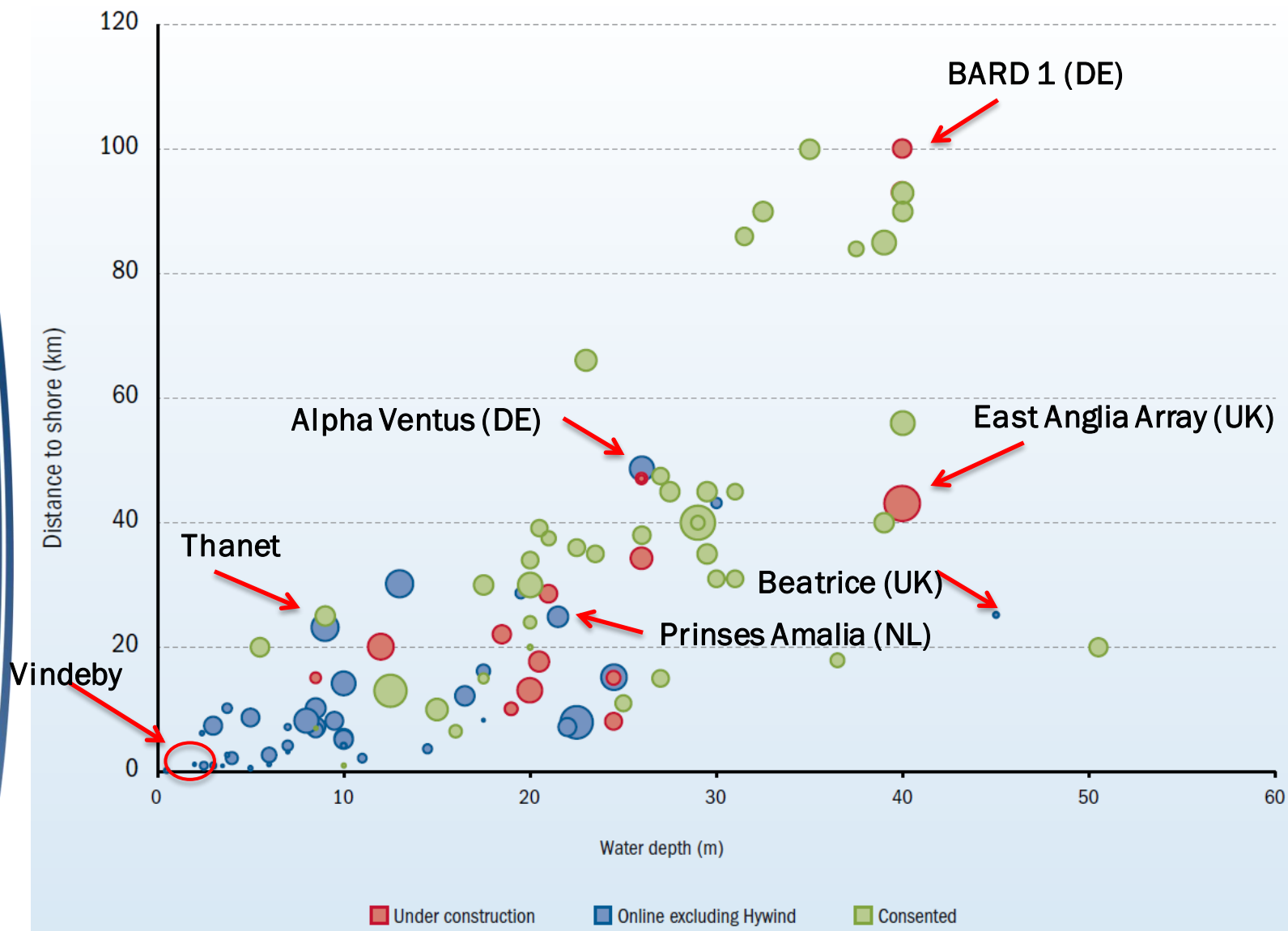


**EWEA**  
THE EUROPEAN WIND ENERGY ASSOCIATION

## Historical onshore growth compared to EWEA offshore projection

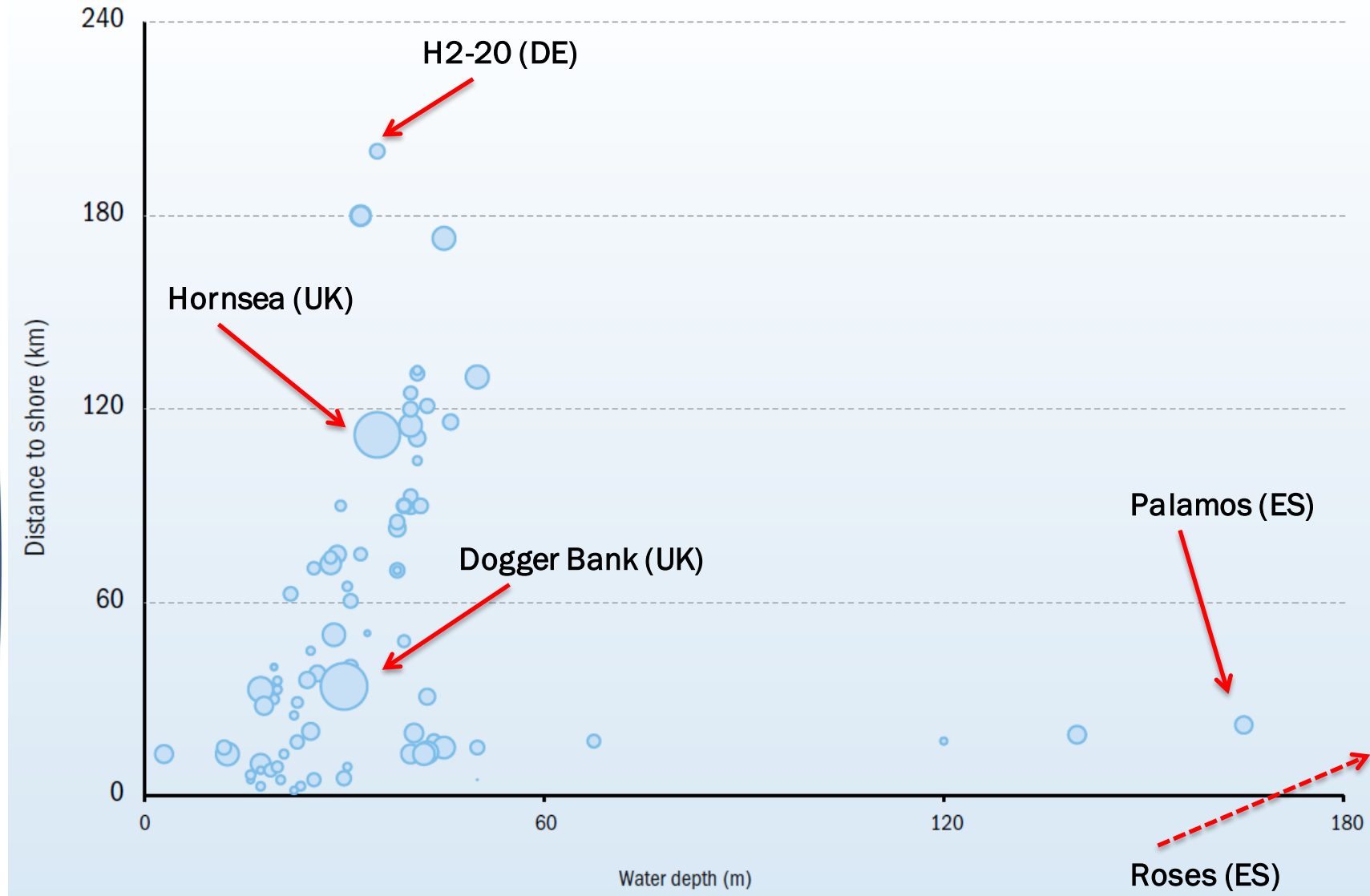


## Distance and water depth of wind farms



# Trends

## Distance and water depth of wind farms





**EWEA**  
THE EUROPEAN WIND ENERGY ASSOCIATION

Thank you for your attention

Bedankt voor uw aandacht

[www.ewea.org](http://www.ewea.org)

EWEA  
80 RUE D'ARLON  
B-1040 BRUSSELS

T: +32 2 213 1811  
F: +32 2 213 1890  
E: [ewea@ewea.org](mailto:ewea@ewea.org)