

# Offshore Wind

Medical assesment

The Orsted logo, featuring a stylized white 'O' with a power symbol inside, followed by the word 'rsted' in a white sans-serif font.

June 2019

## Disclosure belangen Erik Corver

(potentiële) belangenverstrengeling	Geen
Voor bijeenkomst mogelijk relevante relaties met bedrijven	Geen Bedrijfsnamen
<ul style="list-style-type: none"><li>• Sponsoring of onderzoeksgeld</li><li>• Honorarium of andere (financiële) vergoeding</li><li>• Aandeelhouder</li><li>• Andere relatie, namelijk ...</li></ul>	<ul style="list-style-type: none"><li>• Geen</li><li>• Geen</li><li>• NVT</li><li>• Geen</li></ul>

# Working as a Tech at Ørsted

## Tasks and Physical challenges

- Challenging tasks
  - Travel to windfarm by vessel - exposure to sea sickness.
  - Climbing ladders
    - During transfer
    - In turbine tower (weight restriction on 136 kg. incl. PPE)
- Handling goods
  - Manual handling of bags and goods in not always best possible positions
- Working in spaces with limited possibility of movement dependant on turbine type
- Special tasks - Major component exchange

Note.

Working as a tech is not to be compared with the work on an oil and gas installation. Techs are going to the turbine in a team and are "on there own" on the turbine during the day.



Typical working day:

- Starting day onshore with a Toolbox talk
- Transit to park with CTV
- Service or fault finding on Turbine
- Transit back to shore
- Debriefing at the end of day.

## A day in a technicians life

- <https://www.youtube.com/watch?v=gYYPYA4VZJE&feature=youtu.be>

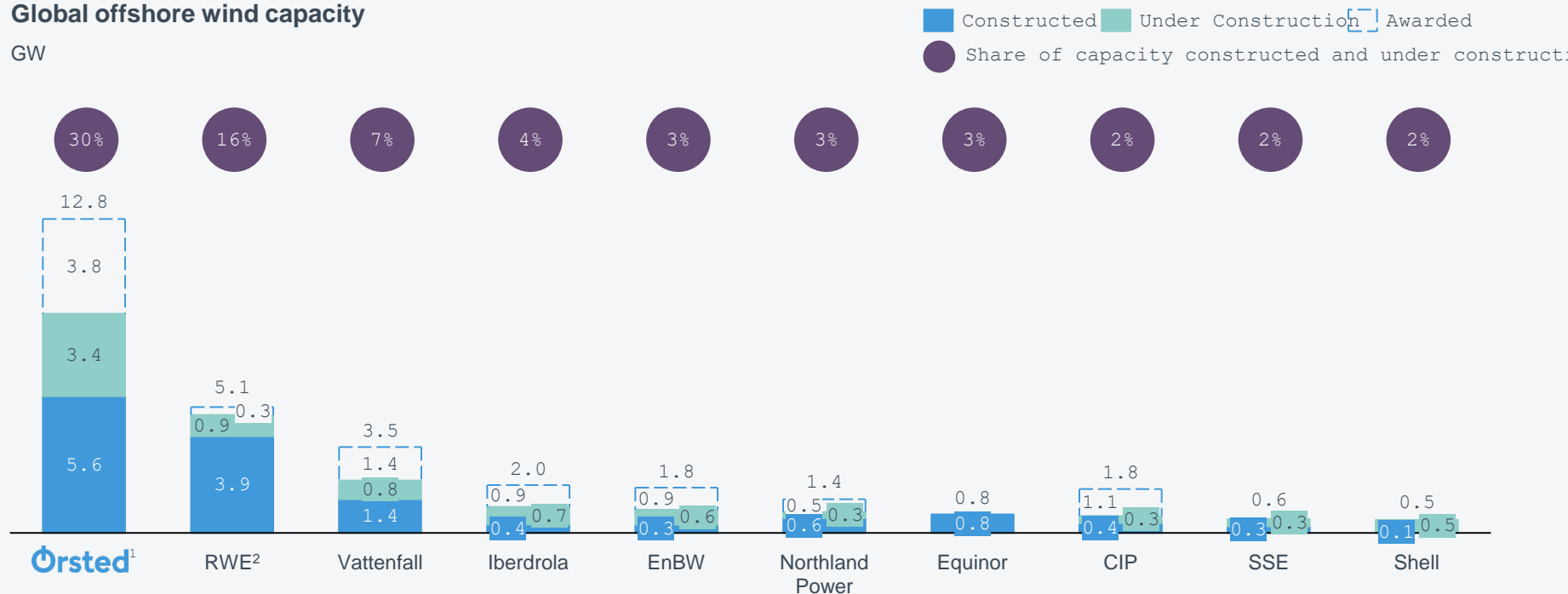
**The Ørsted Way**  
Let's create a  
world that runs  
entirely on green  
energy



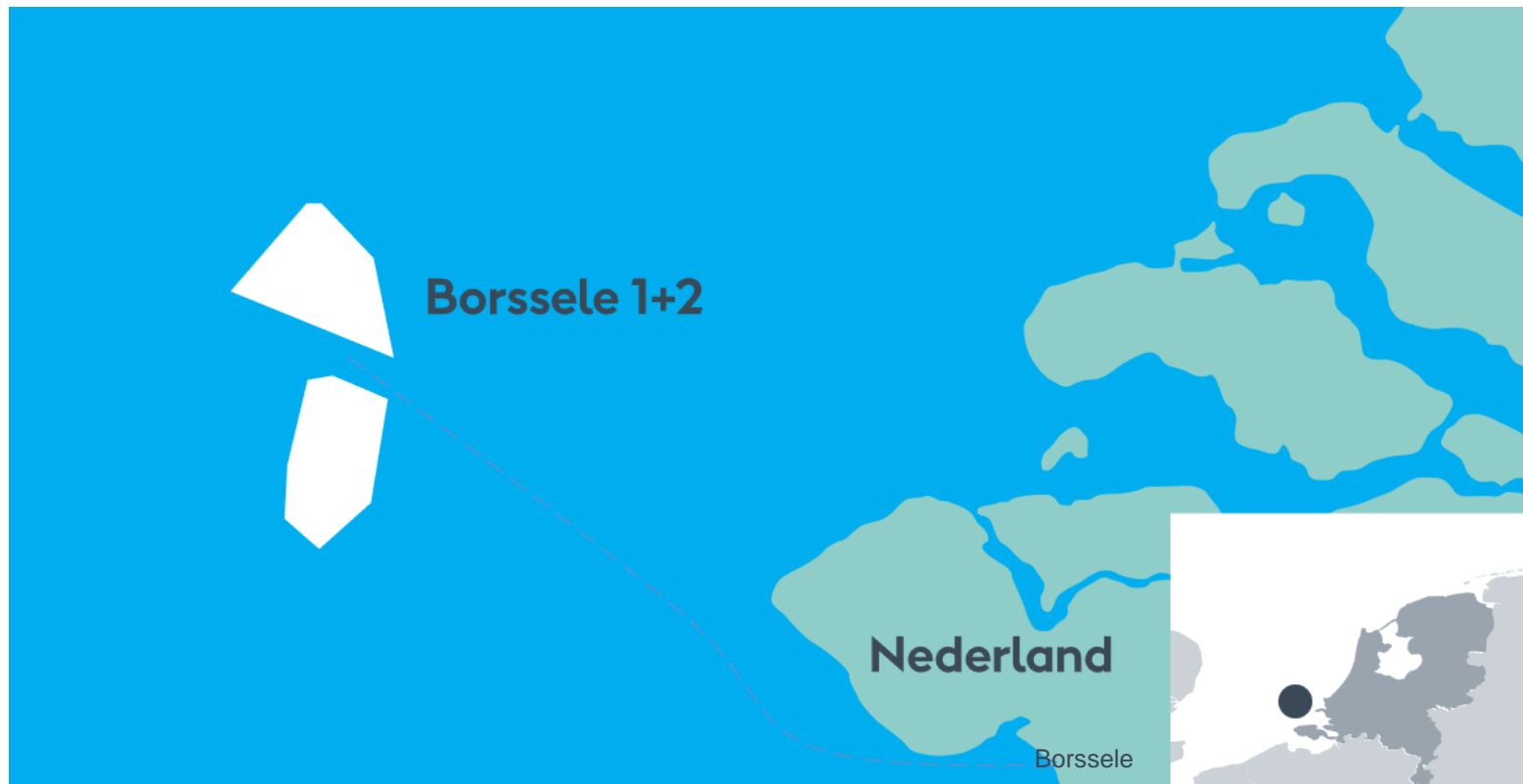
# Ørsted remains uniquely positioned in renewables, with a target of 30GW by 2030

## Global offshore wind capacity

GW



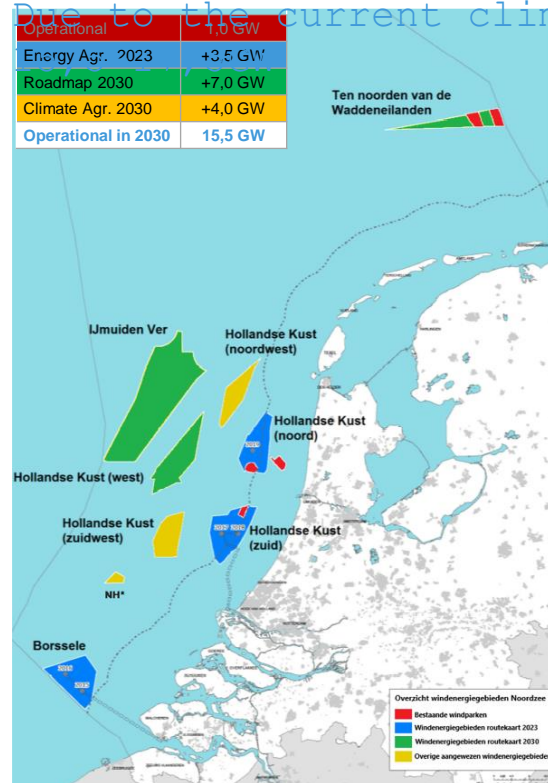
Green electrons landing in Borssele as from 2020:  
752MW, > 3TWh








# In 2030 the Dutch North Sea will host a minimum of 11,5GW operational Offshore Wind

Due to the current climate agreement discussions it is likely to become



	Location	Capacity	Tender	CCD	Grid	Comments
Energy Agreement 2023	Borssele 1+2	752 MW		2020	TenneT AC Borssele	94x SG 8.0-167 DD
	Borssele 3+4	732 MW	 <small>Van Oord</small>	2021	TenneT AC Borssele	77x V164-9.5
	Holland Coast South 1+2	760 MW		2022	TenneT AC Rotterdam	76x SG 10-193 DD
Energy	Holland Coast South 3+4	~0,7GW	<i>Outcome in Q2</i>	2022/2023	TenneT AC Rotterdam	
	Holland Coast North	~0,7GW	Q1 2020	2023/2024	TenneT AC IJmuiden	
Roadmap 2030	Holland Coast West	~1,4 GW	Q2 2021	2024/2025	TenneT AC IJmuiden	
	North of the Wadden	~0,7 GW	Q4 2022	2026	TenneT AC Eemshaven	
	IJmuiden Ver 1	~2 GW	Q4 2023	2027/2028	TenneT 2xDC Rotterdam	Potential of 8GW; close to UK border (East Anglia)
	IJmuiden Ver 2	~2 GW	Q4 2025	2029/2030	TenneT 2xDC Zeeland	
Climate Agreement Additions		+4-7GW	Some stakeholders lobby for 2GW of offshore wind per year (instead of 1 GW) to achieve 2030 climate targets. Combining Demand and Supply is prerequisite for additional sites			



## Medical Assessment Offshore Wind

### Statement

*The medical examination of employees in the offshore wind industry must be based on a thorough analysis of the mental and physical workload. Such an assessment requires the physician to gain insight of the work activities through his own observations.*

*Medical Assessment Offshore Wind (NOGEPA) should be tailored to the working conditions of the Offshore Wind Industry.*

## Stressing factors Wind Technician

- Physically:
  - Climbing vertically from ladder from CTV to platform
  - The Nacelle lift is sometimes out of order or may no longer be used
- Heat /Cold:
  - High temperature in the Nacelle
  - Poor ventilation in workplace
  - Seawater over you during transfer.
- Mental:
  - No routine
  - Training Sea survival
  - Rescue of colleagues in case of illness and incident.

## Work practice technicians during EPC period



## Work practice technicians during EPC



## Work Practice technicians during EPC period

118 bolts M72 foundation 25 kg pr bolt. Tool 10 kg. Use crane boom 1kg to lift.

126 bolts x M64 pr Tower 22 kg







## Stressing factors during EPC period

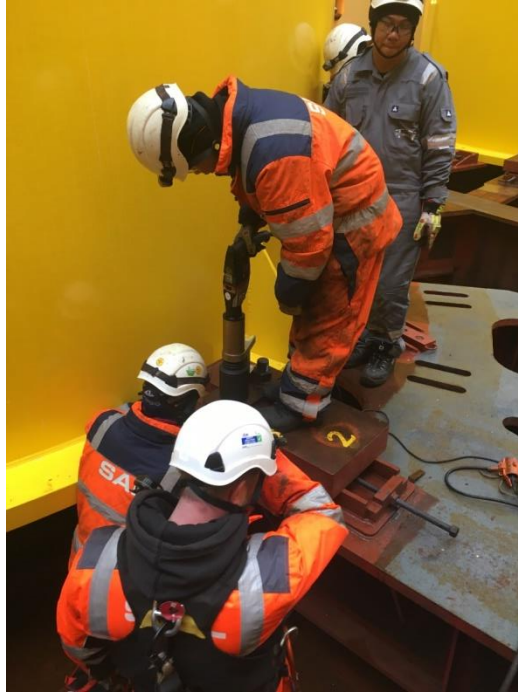




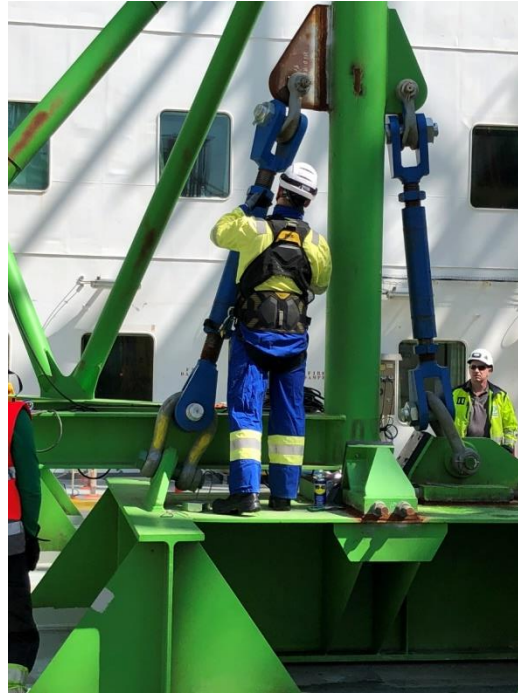
## Work practice technicians during EPC period



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## Work practice technicians during EPC period





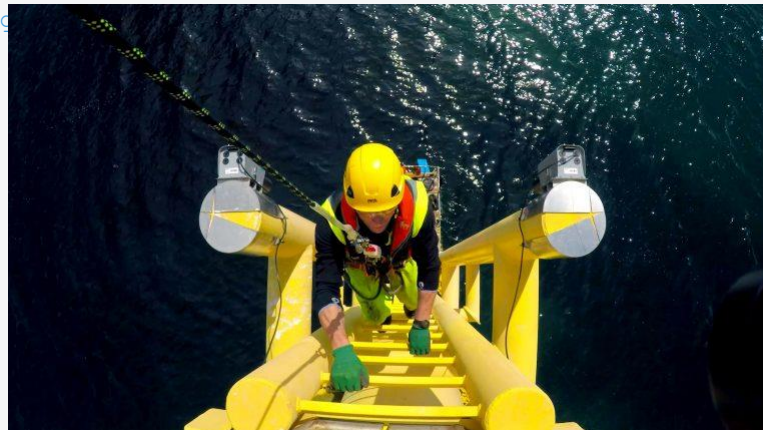
## Health Assessment

- Must be undertaken at pre employment
- After significant injury or sickness
- Every 2 years
- Individual case where it is recommended



## Health assessment

- Vision, step over transfer to the TP, boatlanding hearing
- Hearing, voice communication over a longer distance
- Physical fitness to climb (VO2max)
- Cardio vascular, any conditions that might cause cardiac
- Locomotor, safety of climbing the vertical ladders.
- Obesities, Ørsted limit is 137 kg
- Mental state, persons with mild depressions should be assessed.
- Drugs and alcohol, chronical alcohol, drugs should be suspended



# Due to growth of the Dutch Windfarms incidents will increase

## Role tasks of Coastguard Netherlands

SAR- heli

1. North Sea helicopters Vlaanderen, 4 persons + 1 casualty
2. Den Helder including ambulance nurse for medèvac.
3. Rotterdam SAR heli, no medical assistance

SAR in Wind Farm,

- Not possible in the windfarm with rotating windfarms.
- Hoisting at the outside from the windfarm from a life-boat
- Radio Medical Service, 24/7. Medevac necessary or not.
- KNRM in all Windfarms. Does not have access to the turbines.



## Video heli hoisting

*Thank you*