

WIND POWER EPC

Anders Lindberg, Head of EPC

Meet the Management, 2 February 2017



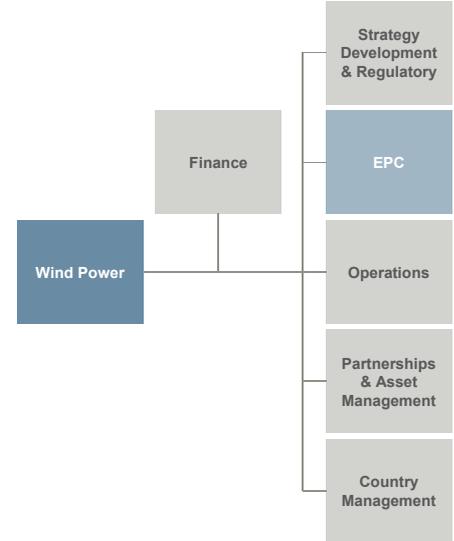


Anders Lindberg
Senior Vice President, Head of EPC

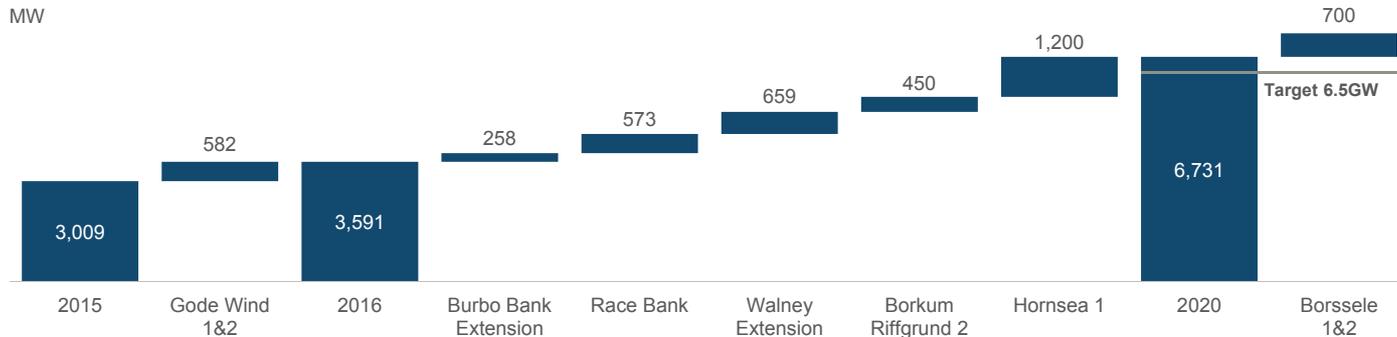
Born: 1965

Education: EMBA in Business Administration (SSE) & MSc. in Electrical Engineering (KTH)

- 2015 - Senior Vice President,**
Head of EPC, DONG Energy Wind Power
- 2014 - Board member,**
IEC Holden
- 2011 - 14 President Rolling Stock Central & Northern Europe and Asia,**
Bombardier Transportation
- 2007 - 11 President Rail Control Solutions,**
Bombardier Transportation
- 2004 - 07 President Propulsion & Controls,**
Bombardier Transportation



Robust & highly visible offshore wind build-out plan towards 2020



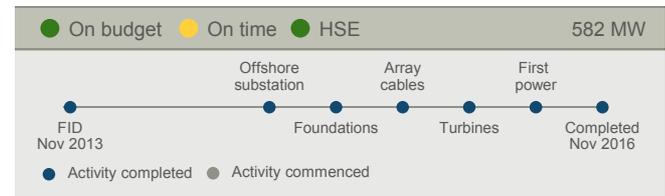
Country	Germany		UK	UK	UK	Germany	UK		Netherlands
Expected completion	2016		2017	2018	2018	2019	2020		2020/21
On time/budget	● / ●		● / ●	● / ●	● / ●	● / ●	● / ●		● / ●
Turbine	Siemens 6.0 MW		MVOW 8.0 MW	Siemens 6.3 MW	Siemens 7.0 MW MVOW 8.25 MW	MVOW 8.3 MW	Siemens 7.0 MW		Not decided

Note: The export capacity of Hornsea 1 is 1,200 MW determined by the boundary of the facility (offshore substations), while the aggregated installed generator capacity is 1,218 MW

Gode Wind 1&2: Grid repair completed and park fully operational



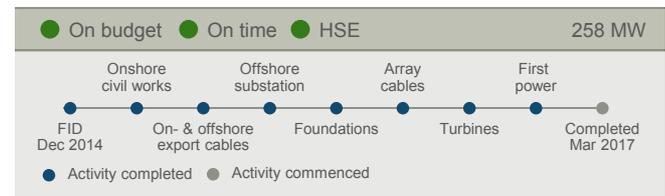
- Gode Wind 1&2 completed slightly behind time schedule and within budget, despite grid delay and outages
- Outstanding safety performance with only 1 LTI (LTIF: 0.4) during construction
- Completed November 2016 after challenging turbine commissioning as a result of unstable grid
 - Delayed grid connection from TenneT and numerous grid outages
 - Grid repair campaign November 2016 to January 2017 by grid owner TenneT
- Grid returned 8 January and re-energisation of turbines progressed according to plan
- Wind park back in operation by end January and park fully handed over to Operations



Burbo Bank Extension: Construction activities finalised



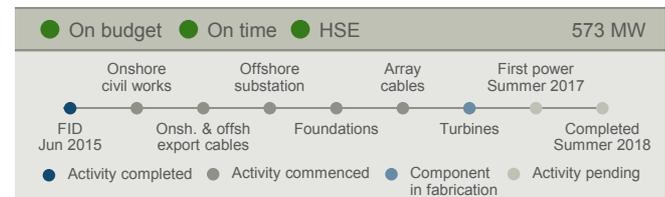
- Burbo Bank Extension on track to complete on time and within budget
- Outstanding safety performance with only 1 LTI (LTIF: 0.5) during the two year construction period
- Construction activities completed and commissioning advanced
 - First power achieved 20 November 2016
 - Last turbine installed 14 December 2016
 - 22 turbines are operational and produce power ultimo January
- Transfer to Operations has commenced
- First offshore and large scale deployment of 8 MW MHI Vestas (MVOW)
- CfD to commence 1 April 2017



Race Bank: Fully on track



- Race Bank is fully on track both on time and budget
- Good safety performance with 1 LTI (LTIF: 0.7)
- First offshore substation installed and energised; second to be installed in March
- Both export cables have been successfully installed in sensitive salt marsh area
 - First export cable fully installed, energised from onshore to offshore substation and buried
 - Second export cable remaining installation ongoing and will be ready for termination in second offshore substation
- All monopile foundations installed and transition piece installation progressing
- Turbine installation to begin during Q2 2017



Remaining construction program fully on track

Walney Extension

659 MW

Country UK

On time / On budget ● / ●

Expected completion 2018

Budget

- All major contracts signed

Schedule

- On track with overall program timeline

Safety

- LTI: 0

Activities 2017

- Offshore works to fully ramp up
 - Export cable H1
 - Foundation and array cables H1
 - Turbine installation to begin H2
- First power expected during H2

Borkum Riffgrund 2

450 MW

Country Germany

On time / On budget ● / ●

Expected completion 2019

Budget

- All major contracts signed

Schedule

- On track with overall program timeline
- Final approval of amended building consent received January

Safety

- LTI: 0

Activities 2017

- Manufacturing of components to be ready to start offshore installation in 2018
- Installation of jacket for our offshore substation in Q3
- TenneT to install DoWin3 converter station

Hornsea 1

1,200 MW

Country UK

On time / On budget ● / ●

Expected completion 2020

Budget

- All major contracts signed

Schedule

- On track with overall program timeline

Safety

- LTI: 0

Activities 2017

- Commence installation of onshore substation electrical Q2
- Commence installation of onshore export cable Q2
- Manufacturing of components

Borssele 1&2

700 MW

Country Netherlands

On time / On budget ● / ●

Expected completion 2020/21

Budget

- Turbine tender currently ongoing

Schedule

- On track with overall program timeline

Safety

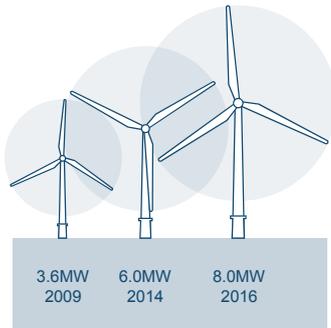
- LTI: 0

Activities 2017

- Closing of major contracts

LCoE being reduced through scale, innovation, industrialisation and digitalisation in both EPC and Operations

Scale



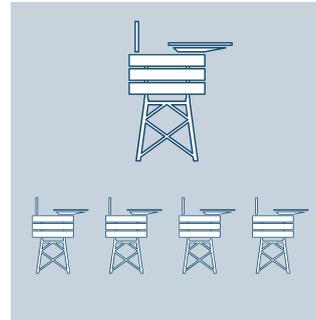
Increased size of windfarms and turbines

Innovation



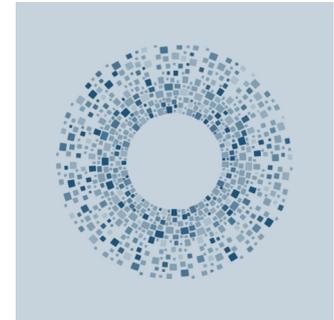
Driving innovative solutions

Industrialisation



Standardisation and procurement for multiple projects

Digitalisation



Fully capturing new technological opportunities

Wind Power fully on track with 2020 build-out plan



All projects fully on time...



... and within budget



Continue the cost reduction journey

WIND POWER OPERATIONS

Jens Jakobsson, Head of Operations

Meet the Management, 2 February 2017



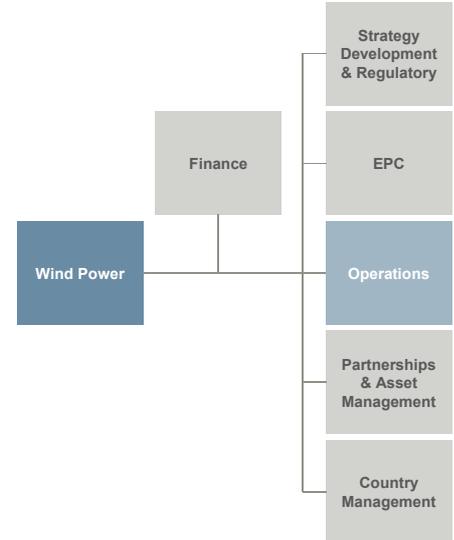


Jens Jakobsson
Senior Vice President, Head of Operations

Born: 1966

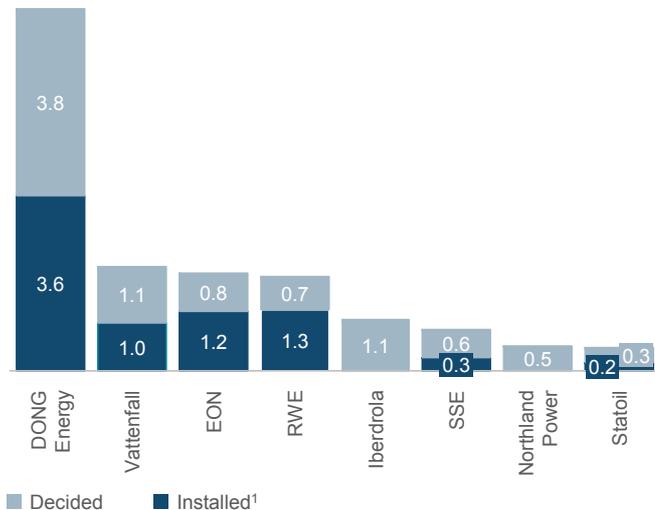
Education: BSc.EE (DTU), Finance for Executives (INSEAD) & Executive Management Programmes (INSEAD & IMD)

- 2015 - Senior Vice President,**
Wind Power Operations
- 2014 - 15 Senior Vice President,**
Wind Power Engineering
- 2010 - 14 Vice President,**
Power and Gas Distribution
- 2006 - 10 Vice President,**
Power Distribution
- 1994 - 06 NESAs A/S,**
Various Management Positions

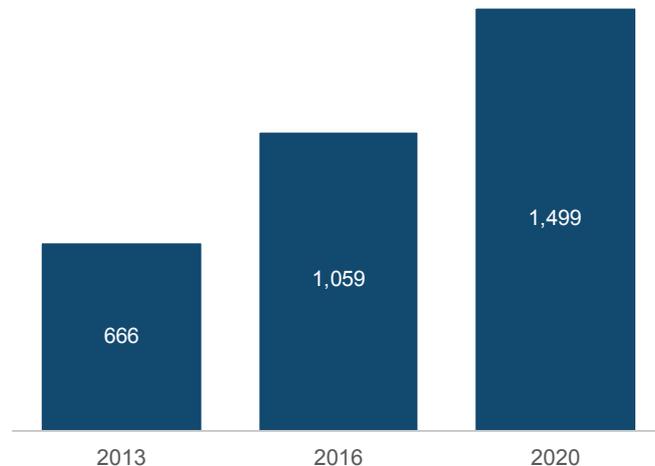


Largest operator of offshore windfarms in the industry

Installed and decided capacity (GW)



Number of turbines in operation

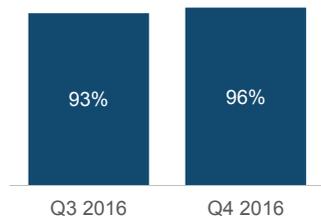


Source: DONG Energy, Bloomberg New Energy Finance (BNEF)

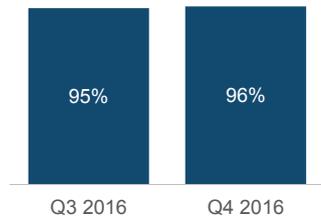
1. If a project is executed on behalf of a lead developer managing the construction, then 100% of capacity is allocated to the lead developer. If construction is executed by an integrated joint venture, capacity is allocated in proportion to the JV share

Availability performance of clusters in H2 2016 as expected – specific challenges in German cluster

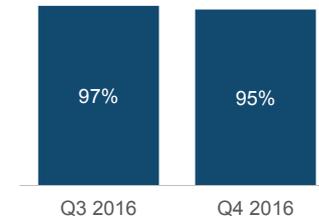
UK West



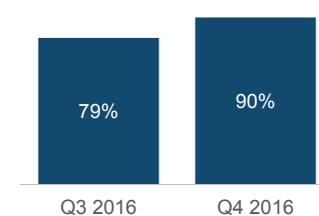
UK East



Denmark

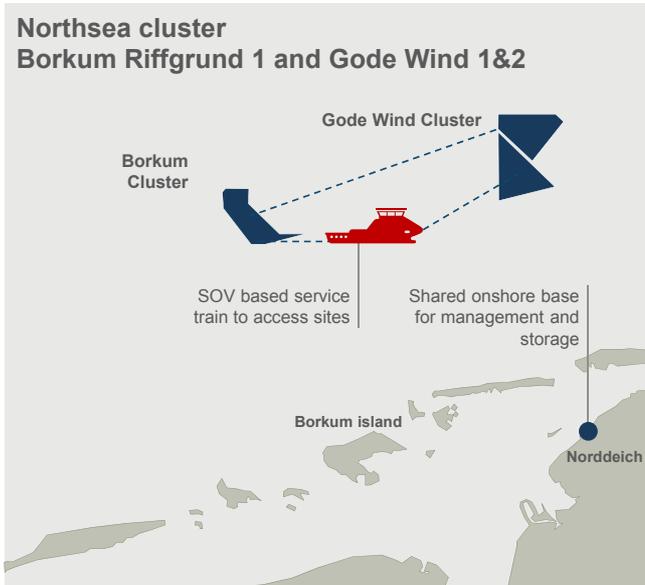


Germany



Note: Nearshore & demo wind farms excluded. Commercial time based availability shown.

Scale effects – clusters allow for shared onshore infrastructure and application of Service Operation Vessel



Higher accessibility

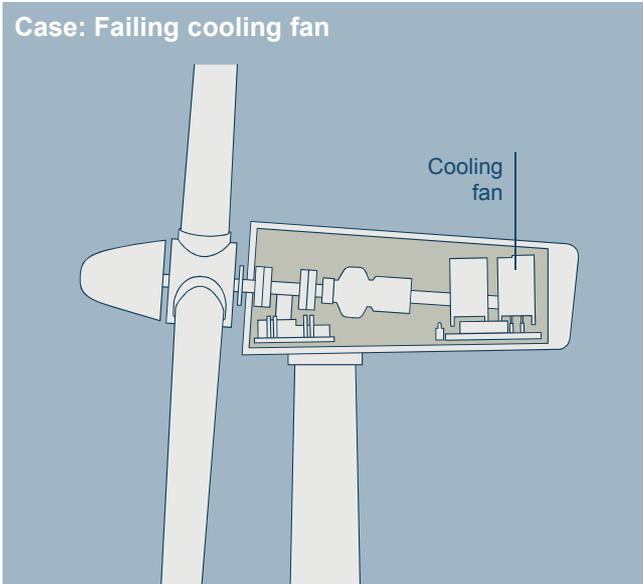


Minimizing non-productive time



Lean setup through shared infrastructure

More data – source for significant operational improvement in the near future



Before - No online monitoring:

- Turbine stops in case of high temperature
- Leads to availability loss

Now - Standard Analytics:

- Continuous temperature monitoring and predictive models
- Identifies issue before turbine stops, lowering lead time and limits availability loss

Near future - Advanced Analytics:

- Further development of existing predictive models
- Temperature ride-thru controls, more measurements and data
- Turbine operational until repair

Consistently improving park performance after take-over from OEMs



Long term perspective on optimisation of operating wind farm

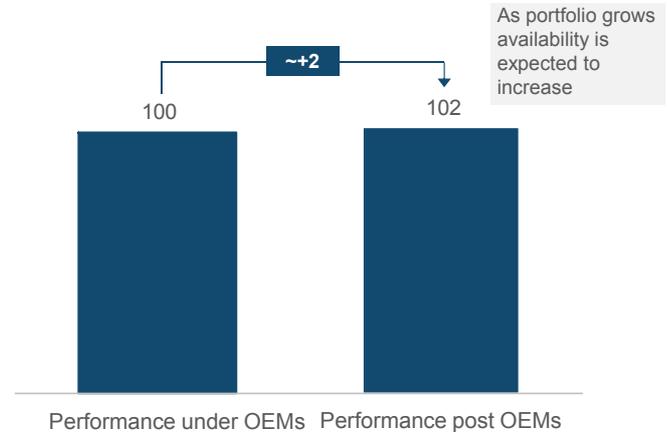


Strong incentive to increase availability as both owner and operator

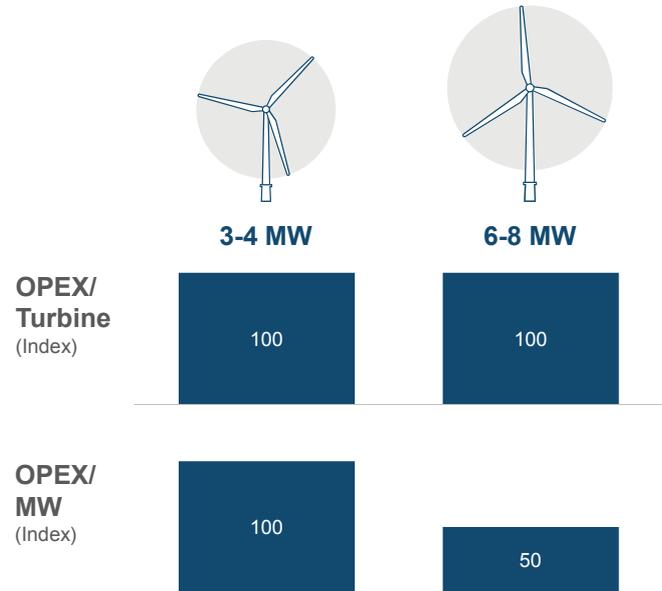


Large portfolio enable synergies and drive down costs

Average availability performance for operating assets
(Index)



In addition, larger turbines provide powerful scale effects



Wind Power is the largest offshore wind power operator in the world with a significant focus on cost reductions



Operating the industry's largest portfolio



Site performance meets expectations, with additional opportunities to improve



Scale is a main driver for cost reductions



Advanced analytics being developed to reduce maintenance costs and improve performance



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