



Offshore Wind Awareness Raising Event Whitby 23rd July 2010

**Developing the Right Skills to Meet the O&M
Requirements of the Offshore Wind Industry**

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Session Contents

SLIDE 2



Eight topics in this ***O&M Skills and Education*** session:

1. SBC Brief
2. Wind Turbine O&M
3. Skill Requirements
4. Local Skill Provision
5. Educational Requirements
6. Educational Provision
7. Dogger Bank O&M Support Base
8. Centre of SCADA Excellence

next

1. Scarborough Borough Council Brief

SLIDE 3

SBC commissioned a short report:

the strengths of Whitby and Scarborough in relation to the O&M requirements of the Off-Shore Wind industry:

1. Skills

2. Educational Provision

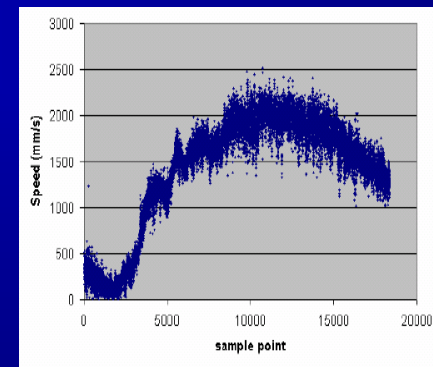
Deliver Hull University courses in RE

3. Engineering Capacity

4. Harbour Facilities

Research on turbulent inertia in wind and tidal power systems and SCADA

next



1. Scarborough Borough Council Brief

SLIDE 4

1. Dogger Bank concession awarded to Forewind (SSE, RWE npower, Statkraft and Statoil)
2. Dogger Bank largest potential at 9 GW
3. Dogger Bank's shortest sailing time is to Whitby in 2.5 hrs at 25kts (day versus offshore working)
4. O&M Skills and Education provision
5. O&M Engineering and Harbour Facilities

reNews May 2010

Forewind erecting meteorological masts at Dogger Bank in May 2011.



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2. Wind Turbine O&M

SLIDE 5

Large Structural Components:

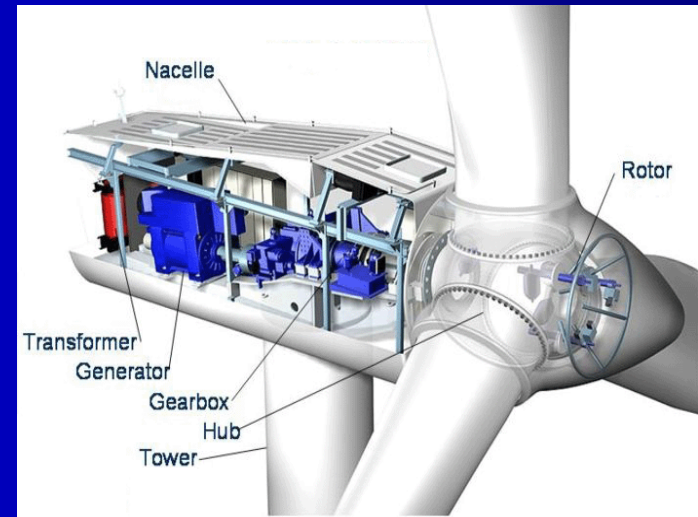
- Foundation
- Tower
- Nacelle
- Hub
- Blades

Major Machinery:

- Gear box
- High and Low speed Shafts
- Generator
- Switchboard
- Electrical Control

Ancillary Components:

- Pitch Control mechanism
- Yaw control mechanism
- Braking Systems
- Cooling Systems
- Dehumidifier
- Instrumentation and control (SCADA).



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2. Wind Turbine O&M

SLIDE 6

Four elements to offshore wind O&M

1. Operational Control

SCADA (supervisory control and data acquisition). Software, communications and data analysis systems to be written and maintained. Ongoing real time operation



2. Structural Maintenance

Painting, bolt torque checks, foundation checks, maintenance and servicing

3. Mechanical Maintenance

All mechanical components to be maintained and serviced. Breakdown and repair work. Eickhoff gearbox



4. Electrical Maintenance

All electrical systems and cabling to be checked, maintained and serviced. Breakdown and repair work. GE generator



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3. Skill Requirements

SLIDE 7

Generic Skill Requirements for:

1. Offshore Mechanical Maintainers
2. Offshore Electrical Maintainers
3. SCADA Technicians
4. Offshore Supervisors
5. Health & Safety Managers
6. Maintenance Managers
7. Onshore Operations Control



Boat Masters and Crew

1. First Aid Course (4 days)
2. Basic Fire Fighting Certificate
3. Basic Sea Survival Certificate
4. Basic Health & Safety Certificate
5. Radio telephone operators certificate
6. ENG1 Medical certificate.



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3. Skill Requirements

SLIDE 8

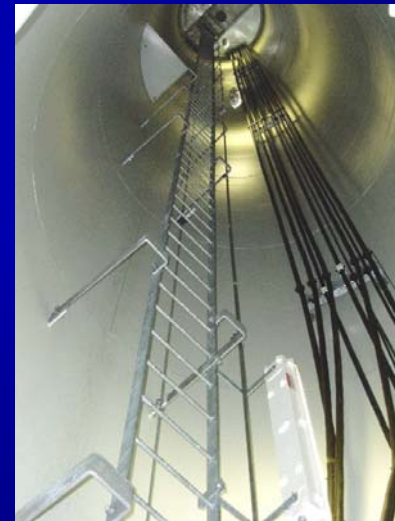
Training and Skills for offshore O&M:

1. Sea Survival
2. Helicopter Evacuation Training, if used.
3. A valid ENG1 or Offshore Medical Certificate
4. Basic First Aid
5. VHF/UHF radio operation and procedures.
6. Health, Safety and Environmental awareness



Training and skills specific to role:

1. Working at heights.
2. Confined spaces.
3. Manual Handling
4. Electrical Safety
5. WTG Safety
6. Rigging & slinging
7. Hub rescue/WTG evacuation
8. Fire Fighting
9. Boat/ helicopter transfers
10. Safety Passport



4. Local Skill Provision

SLIDE 9

1. Yorkshire Coast College
is a vocational college.

2. Whitby and District Fishing Industry Training School
Not for profit company limited by guarantee institution with a successful record for developing the highest seafaring skills.

3. Marine Safety College in South Shields
in partnership with Council offers a range of marine and safety training courses

4. Private Sector Training Providers
e.g. YH Training Services, Tyro, Derwent Training Association



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5. Educational Requirements

SLIDE 10



Offshore Mechanical Maintainers

City and Guilds +

Turbine Specific Training

Offshore Electrical Maintainers

City and Guilds +

Turbine Specific Training

Maintenance Supervisors

City and Guilds

to HND

Turbine Specific Training

Health & Safety Manager

Experience

Turbine Specific Training

O&M Project Management

Degree level

Turbine Specific Training

Onshore Operations Control

Degree Level

Turbine Specific Training

next

6. Local Educational Provision

SLIDE 11

Three sixth form colleges within the Borough:

Scarborough Sixth Form College

Yorkshire Coast College (Vocational)

merged with Grimsby FE & HE Institute

www.yorkshirecoastcollege.ac.uk

Whitby Community College

www.whitbycc.co.uk/about.html

One University within the Borough:

Hull University (Scarborough Campus)

A wide range of programmes and levels

www.hull.ac.uk

<http://www2.hull.ac.uk/scarborough/>

Skilled and Educated workforce

V good skill and educational provision for future

Triangulated through NYC-EDP



next

7. Dogger Bank O&M Vessel Base

SLIDE 12

Endeavour Wharf at Whitby Harbour provides:

210 m commercial quay

Up to 3000 tonnes DWT

LOA – 85 m

Beam 14 m

Draft to 6.5 m

2m CD at wharf

5000 m² open quay storage

25T crane

IT Power/MoJo Maritime estimated 500 O&M personnel for the smaller Norfolk field

Overview of Harbour Potential

Day working is possible from Whitby: vessel supply and servicing

Offshore Accommodation vessel supply and servicing

Existing highly skilled workforce and training available



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8. SCADA Centre of Excellence

SLIDE 13

SCADA O&M

Offshore wind turbines are largely manufactured in Denmark (Vestas) etc.

O&M usually included for five years in sale contract

SCADA has many turbines remotely (internationally) operated

Overview of Harbour Potential

Centre of Excellence for Dogger Bank turbine control from new build at e.g. Endeavour Wharf

Research link with the University of Hull

Office view would then be



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Thank you for your attention

