

2nd international Conference

Offshore Wind Power SUBSTATIONS 2013



Project experience and advanced designs for offshore substations and converters

26 – 28 August 2013 | Swissôtel Bremen, Germany



Chairman:



Prof. Dr. Thomas Betz,
Vice Dean of Faculty
Electrical Engineering,
Darmstadt UAS,
Germany

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companies:

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- Centrica Plc
- CG Holding Belgium
- Darmstadt University of
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- Det Norske Veritas (DNV)
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- GL Noble Denton
- Overdick GmbH & Co. KG
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- RWE Npower Plc.
- Semco Maritime A/S
- TenneT Offshore GmbH
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- Benefit from **project experience and lessons learned** on 8 offshore platforms
- Evaluate existing concepts for **self-installing substations** and debate their practical value
- Gain insight into challenges for **electrical equipment in offshore environments**
- Evaluate strategies for **cost-efficient transport and installation** of substations
- Explore **O&M concepts and CMS** for manned and unmanned offshore platforms

Meet these experts amongst others:



Martin Russo,
Head of Offshore Platforms,
Dong Energy Wind Power A/S,
Denmark



Andreas Rosponi,
Managing Director,
Overdick GmbH & Co. KG,
Germany



David Fallon,
Deputy Package Manager,
Centrica Energy Plc., UK



Dan Gardner,
Offshore Platform Lead Engineer,
RWE Npower Plc., UK



Poul Damgaard,
Senior Project Manager,
Energinet.DK, Denmark



Christoph vor dem Brocke,
Competence Center Offshore
Platforms,
TenneT Offshore GmbH, Germany

Interactive Workshop Day | Wednesday, 28 August 2013

- A** | Advances in offshore substation design
- B** | O&M concepts for offshore platforms
- C** | Jacket/topside structures vs. self-installing concepts
- D** | Substation requirements and functional designs

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26 – 28 August 2013 | Swissôtel Bremen, Germany

"Great Exchange!"

Mario Haim, Head of R&D, **Schneider Electric Sachsenwerk GmbH**

"The conference gives a perfect possibility to everyone who wants to get in contact with companies which focus all the same topics you're interested in. Don't miss that chance!"

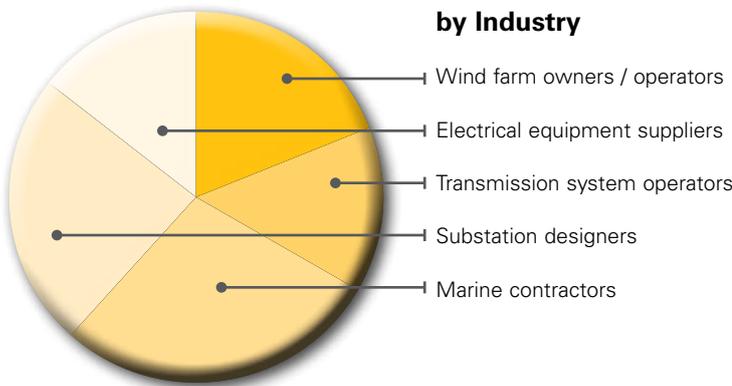
Michaela Schmitz, Lead Component Buyer Substations, **RWE Innogy GmbH**

"Nice practical topics with good discussions and response to speakers."

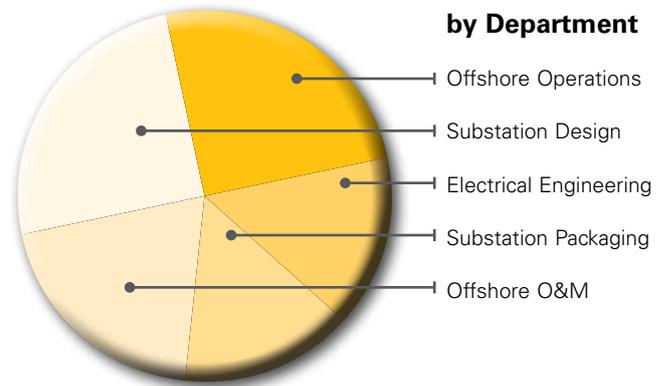
Remko Put, Project Manager, **Fabricom Oil & Gas B. V.**

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**Conference Day One | Monday, 26 August 2013**

08:45 Registration & welcome coffee

09:15 Chairman's opening
 Prof. Dr. Thomas Betz,
 Vice Dean of Faculty Electrical Engineering,
Darmstadt University of Applied Sciences, Germany

**09:30 Speed Networking**

Meet your industry peers in this series of quick-paced one-to-one meetings – make sure to bring a stack of business cards!

International standards for offshore substations

10:30 **The DNV standard for offshore wind platforms – experience and the latest update**

- Experience to date with the DNV-OS-J201 for AC and HVDC platforms and the different interpretations of the standard
- The improvements and new items in the DNV-OS-J201 June 2013 standard
- International offshore standards – hope for a harmonisation?

Claus Christensen,
 Regional Manager Wind Energy Certification,
Det Norske Veritas, UK

11:00 **Practical experience with the application of offshore platform standards**

- Experience of using DNV-OS-J201 for Gwynt y Môr
- Application of oil & gas codes and specification approach for the Galloper North platform
- Current trends in offshore standards from RWE's point of view

Dan Gardner,
 Offshore Platform Lead Engineer,
RWE Npower Plc., UK

11:30 Refreshment break & networking

Practical experience with substations from design to installation

12:00 **DONG Energy experience with Borkum Riffgrund 1 offshore substation**

- Tailored designs for substructure and topside
- Jackets and crane vessel used for installation – advantages of fixed structures
- From project experience to improvements of tools and processes

Martin Russo,
 Head of Offshore Platforms,
Dong Energy Wind Power A/S, Denmark

12:30 **Substation design and installation for Lincs wind farm – case study**

- Design and installation of the substation jacket and topside
- Connection to the existing National Grid substation at Walpole
- First operation experience and outlook on next projects

David Fallon,
 Deputy Package Manager,
Centrica Energy Plc., UK

13:00 Networking luncheon

14:30 **BorWin Alpha – design and installation of an HVDC converter platform**

- A design to meet the special requirements for HVDC equipment
- Challenges for transport and installation of the offshore converter
- Moving on to DolWin Alpha and DolWin Beta

Technical senior level speaker to be confirmed,
ABB AG, Germany

Self-installing designs vs. fixed structures

15:00 **The MOAB platform concept and its application for offshore wind**

- Adapting an oil&gas proven solution in the electro-technical environment, technology and contracting
- Using the self-erecting floating platform for Global Tech I
- Experience today and outlook on upcoming projects

Andreas Rosponi,
 Managing Director,
Overdick GmbH & Co. KG, Germany

15:30 Refreshment break & networking

16:00 **Developing the design concept for the MEG 1 Substation**

- Experience with earlier substation projects and lessons learned
- Functional improvements in the MEG 1 substation design
- Design decisions regarding the substructure

Jörg Thumann,
 Project Leader MEG 1 Substation,
Windreich AG, Germany

16:30 **Anholt Substation – A gravity based jacket/topside structure**

- Data for topside and foundation of the 400 MW AC platform
- Details of the GBS and experience from construction and installation
- Comparing of cost for jacket and gravity-based foundation

Poul Damgaard,
 Senior Project Manager,
Energinet.DK, Denmark

17:00 **Self-installing substations – Panel discussion**
 Discuss the advantages of conventional jacket/topside structures vs. self-installing platforms, with respect to design, transport and installation.

Speakers of the day, and
 Peter Petersen,
 Chief Structural Engineer Offshore Platforms,
Dong Energy Wind Power A/S, Denmark

There will be room for questions from the audience.

17:30 Closing remarks of the chairman

**Casual evening reception**

Get together with the other experts for a networking event with dinner and drinks



Conference Day Two | Tuesday, 27 August 2013

07:50 Registration & welcome coffee

08:20 Chairman's opening
Prof. Dr. Thomas Betz,
Vice Dean of Faculty Electrical Engineering,
Darmstadt University of Applied Sciences, Germany

Advances in cabling for substations

08:30 High Voltage cabling on Offshore Substations

- Risk analysis, lagging standardisation
- Technical solutions, innovations in testing
- Operational and legal solutions

Laurens Pots,
BU Manager Energy,
BV Twentsche Kabelfabriek (TKF), Netherlands

HV technology in offshore environments

09:00 Optimisation of substations and their transformers for the offshore environment

- Transformer cooling methods and insulation properties
- Enhancement of HV/MV topology to comply with third party requirements
- Best practices based on our O&M experience

Jean Charles Beauverger,
Electrical Lead Engineer,
CG Holdings, Belgium

09:30 Reducing redundancy systems – weighing cost vs. risk

- Examples of lean concepts for transformer stations
- Advantages of 3-winding transformers and their risk factor
- Efficient risk management and cost estimation for different scenarios

Sven Höpfner,
Senior Systems Design Engineer & Project Manager
Offshore HV Substations,
Alstom Grid GmbH, Germany

10:00 Round Tables – Main challenges for offshore foundations

We will identify the key challenges for design, production and installation of offshore substructures in a live survey (bring your mobile device).

The topics will then be discussed on 6 round tables – along with coffee and snacks.

11:00 Certification requirements for arrangement and design of electrical equipment

- Existing rules and standards for low voltage equipment (transformer and HVDC platforms)
- Arrangement and operation of high voltage components and systems in an offshore environment
- Pragmatic application of (onshore) standards for the certification of offshore substations

Andreas Mäscher,
Project Manager, Senior Engineer E&I,
GL Noble Denton, Germany

11:30 Monitoring requirements for AC and DC offshore platforms

- Monitoring of the different auxiliary systems compared
- Difference of partial discharge measurement of HVAC and HVDC systems
- Difficulties of evaluation of DC-partial discharges

Prof. Dr. Thomas Betz,
Vice Dean of Faculty,
Darmstadt University of Applied Sciences, Germany

12:00 Networking luncheon

O&M concepts for offshore platforms

13:30 O&M experience with Baltic 1 offshore substation – case study

- The original O&M concept and necessary adjustments
- Maintenance efforts for auxiliary systems
- Condition monitoring and planned maintenance concepts

Dr. Michael Splett,
Manager Engineering O&M Offshore,
EnBW Erneuerbare Energien GmbH, Germany

14:00 Considering O&M during the design phase for substations

- O&M experience and lessons learned with existing projects
- Examples of maintenance friendly platform designs
- "Maintenance free" designs vs. planned maintenance

Christoph von dem Brocke,
Competence Center Offshore Platforms,
TenneT Offshore GmbH, Germany

14:30 Refreshment break & networking

15:00 Experience with operation and maintenance from the oil & gas industry

- Maintenance-free/friendly offshore platform designs
- O&M strategies throughout the substation lifecycle
- How can the oil & gas experience be applied to offshore wind?

Christian Juel Adamsen,
Team Leader Oil&Gas Maintenance,
Ramboll Group, Denmark

15:30 Advantages of manned vs. unmanned offshore platforms

- Advantages of a separate accommodation platform – experience from DanTysk
- Mitigating fire risk for manned / unmanned offshore platforms
- From what size and distance to shore are manned platforms the better option?

Petja Stoever,
Package Manager Offshore Accommodation,
Vattenfall Europe Windkraft GmbH, Germany

16:00 Trend tracking – Future substations

Is there a marked trend towards one type of design? Which is the most efficient way to optimise the CoE? Help us track the industry opinion in this survey session, and join the subsequent discussion.

Please bring your mobile device for our live-poll!

16:30 Closing remarks of the chairman

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**Interactive Workshop Day | Wednesday, 28 August 2013**

09:00 Registration & welcome coffee

11:00 Refreshment break & networking

Workshop A | 09:30 – 12:30**Advances in offshore substation design**

While there has been a quick paced evolution of offshore platforms in the last years, there is still plenty of room for improvements. Participants are welcome to discuss

- Current **trends and developments** in substation design
- **Project experience** and lessons learned
- Main challenges for **HVAC vs. HVDC** platforms

The workshop will follow up on the discussions on the conference days and allow **designers, manufacturers** and **marine contractors** to share their experience.

Etienne Lemaire,
Engineering Manager,
CG Holdings, Belgium

Workshop B | 09:30 – 12:30**O&M concepts for offshore platforms**

The workshop will discuss best ways to **optimise O&M strategies** for offshore platforms. Special attention will be given to

- **O&M experience** and cost-efficient strategies
- **Manned vs. unmanned** offshore platforms
- Advances in **SCADA systems and CMS**

The aim of this interactive session is to define both the challenges and the potential for maintenance and operation with special attention to offshore logistics.

Petja Stoever,
Package Manager Offshore Accommodation,
Vattenfall Europe Windkraft GmbH, Germany

12:30 Networking luncheon

15:00 Refreshment break & networking

Workshop C | 13:30 – 16:30**Jacket/topside structures vs. self-installing concepts**

With the growing size of substations and the resulting challenges for transport and installation, self-installing designs are rapidly gaining importance. The workshop will focus on

- Experience with **transport and installation**
- **Logistic challenges** and risk factors
- Future concepts to **improve the CoE**

Project developers, substation designers and **marine contractors** are welcome to join the discussion and evaluate project experience and future solutions.

For further information please visit our event website
www.offshore-windpower-substations.com/MM

Workshop D | 13:30 – 16:30**Substation requirements and functional designs**

Designs for substations and converter platforms have to consider a variety of different aspects, ranging from **transportability to H&S standards**. The workshop offers a holistic view design requirements, such as

- Potential for **standardisation and cost improvement**
- **H&S requirements** and **accessibility**
- Designs optimised for **transport and O&M**

The aim is to discuss and develop efficient concepts to harmonise these requirements and advance functional platform designs.

For further information please visit our event website
www.offshore-windpower-substations.com/MM

16:30 End of Workshop Day

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