Individual success through exchange of experience

- Performs as the collective European platform for operators and suppliers of wind power plants.
- Be the first address for interested parties in technical, environmental and strategic issues concerning wind.
- Functions as the information platform for the wind community in Europe.

Networking throughout Europe

52 Operators  21 Suppliers  31 Consultants
38 GW installed capacity  17 Countries
VGB PowerTech | Wind

Reduction of installation and operational costs and increase of operational safety of wind power plants require coordinated and joint analysis of operational experience.

Leading wind power plant operators bundled their interests under the umbrella of VGB PowerTech. In addition to the exchange of information and experience, the companies are mainly interested in cooperation to push forward standardisation (best practice) and to represent operator interest in the different user groups.

Strategic requirements on the utilisation of wind power from the viewpoint of operators are discussed and corresponding measures are launched by the different committees of VGB PowerTech.

Our slogan for our common work is: 

*Success through Exchange of Experience*
### Challenges of companies

- H&S management
- Reduction of costs
- Strategic requirements
- Technical challenges
- Process optimization
- Environmental aspects
- Human resources

### Finding joint solutions for your future within VGB PowerTech | Wind

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Vision

“The utilisation of wind power is playing an important role in order to meet the targets of the European Union within the Climate and Energy Framework by 2030. Wind power will be the main pillar in transforming the global energy supply structure towards a sustainable energy future.”

Mission

“VGB PowerTech | Wind is the first address for all operators of wind power plants regarding technical, environmental as well as strategic issues and it acts as hub for the wind energy sector in Europe.”
Objectives

- **Supporting our members in operation, maintenance and plant optimisation as well as in technical, environmentally relevant and strategic challenges**
  - improving of the availability, reliability and plant safety for wind power plants
  - supporting a cost-effective durability and environmental management of wind power plants
  - developing new concepts to improve operation and maintenance
  - establishing safety standards
  - extending the exchange of experience in engineering and operation

- **Technical lobbying**
  - representation of the operator’s interests
  - strengthening the operator's position towards the suppliers
Objectives

- **Coordinated performing as the collective European voice of the wind power sector**
  - editing and providing of facts regarding positions and references
  - inserting positions into European and national regulatory frameworks

- **Generating technical and operational standards**
  - compiling practice-oriented VGB-Standards considering experience of operators
  - co-creating international technical standards
Objectives

- **Initiating and coordinating national and international research projects**
  - establishing and exchanging know-how
  - saving expenses by joint research projects
  - having access to international grants

- **Organising events**
  - presentation of the state of technology
  - exchange of operational experience
Comprehensive operational experience transfer and exchange

- 1 Strategic Forum of high level representatives for strategy as well as technical, operational, environmental issues and energy policy aspects
- 1 Technical Committee and 4 further Technical Groups dealing with technical, operational and environmental topics
- Currently more than 130 professionals participating in VGB wind energy committees
- Enhanced co-operation with eurelectric
Steering of the activities of VGB PowerTech | Wind

Technical, operational and environmental issues and steering of subgroups

SF Wind

TC Wind Energy

21 Committees
1 SF … Strategic Forum
1 TC … Technical Committee
4 TG … Technical Groups
15 TG … Technical Groups on demand

Supervised by TC Wind Energy

On demand a pool of experts in different TGs is available.

USER Group Siemens
USER Group Vestas
USER Group Enercon
TG HSE for Wind Parks (reporting to TC H&S)

TG Maintenance Management
TG Performance Indicators
TG Industrial Safety
TG Reference Designation and Plant Documentation
TG Health and Safety at Work

TG Electrical Equipment
TG Instrumentation and Control
TG Interface Power Plant - Grid
TG Civil Concepts / Specific Civil Solutions
TG Civil Structural Maintenance / Condition Monitoring

TG Fire Protection
TG Operational Management
TG Industrial Medicine / Health Management
TG Supervision of Construction and Assembly
TG Noise Control

Exchange of information

Status: 01.05.2017
Strategic Forum “Wind”

Strategic requirements on the utilization of wind power from the viewpoint of operators are discussed on management level and corresponding measures are launched by the SF “Wind”. The companies are focusing their interests in cooperation to push forward standardization (VGB-Standards) and to represent operator interests in the different User Groups.

Tasks

- Increasement of Health & Safety management
- Representation and “one voice” of the operator’s interests
- Strengthening the operator’s position towards the suppliers
- Drawing on experience already paid for within conventional technologies
- Establishing and learning from best practice
- Establishing industry wide standards (VGB-Standards)

Technical lobbying from the operator’s point of view is one of the most important tasks of the SF “Wind” member companies.
Technical Committee “Wind Energy”

The TC “Wind Energy” deals with all technical, operational and environmental issues with respect to the use of wind energy. The committee members are mainly part of the technical management in their companies and have a wide range overview about the technical and environmental requirements.

Tasks / Benefits for members

- Coordination of operator interests towards manufacturers, authorities, and standardization bodies
  *Representation and “one voice” of the operator’s interests*

- Initiation and update of VGB-Standards
  *Optimisation of the life cycle profit*

- Sharing and joint analysis of operational experience
  *Reduction of the operational costs*

- Initiation, coordination and evaluation of research projects
  *Cost savings and build-up of know-how*

- Organisation of events and workshops
  *Direct exchange of experience with external experts*
Technical Group “User Groups”

The User Groups are dealing with specific technical issues of different wind power plant types - from the foundation to the rotor blade. The main aim of the committee members is to exchange operational experience and to work on best practices. Improvement proposals jointly prepared are subsequently discussed with manufacturers.

Tasks / Benefits for members

- Coordination of operator interests towards the manufacturers
  *Representation and “one voice” of the operator’s interests*

- Sharing and joint analysis of operational experience
  *Reduction of operational costs*

- Development of databases containing key technical parameters of wind power plants
  *Direct exchange of information between the committee members*

- Organisation of subject specific workshops
  *Newest information on state of technology*
Technical Group “Health & Safety for Offshore Wind Power Plants”

The TG “Health & Safety for Offshore Wind Power Plants” (reporting to TC Safety and Health at work) is dealing with issues to occupational safety and health in wind power plants. The main aim is to evaluate and communicate accidents and incidents and to build up preventative measures and procedures.

Tasks / Benefits for members

- Sharing and analysis of H&S topics
  *Supporting individual H&S success*

- Harmonisation of the requirements, certification and content of the training for offshore workers
  *Reduction of operational costs*

- Co-operation with other organisations
  *Collect, share and spread of information and avoid duplication of work*

- Collection and distribution of safety alerts
  *Exchange of information and experience and sharing of lessons learned*

- Organisation of events and workshops
  *Exchange of information and experience on expert level*
Digitalization-Barometer-Tool for Wind Power Operators

A tool to assess your progress in digitalization: Assessing your current status and your target status in three years in comparison to the average of the wind power sector.

A) Digital orientation of the company
- Organization
- Communication management
- Digitization strategy
- ....

B) Operation of Wind Power Plants
- Acquisition of process data
- Use of optimization approaches
- Implementation of forecast data
- ....

C) Maintenance of Wind Power Plants
- Analyzation of SCADA data
- Analyzation of CMS data
- Development of predictive maintenance strategies
- ....

D) Documentation
- Digital documents
- Reporting of operating results
- Reporting of maintenance tasks
- ....

E) Electricity Market
- Forecasting systems
- Automatic trading systems
- ....

Legend
- Current status of your company
- Average of the wind power sector

Our members get the **full evaluation report** with the averages in the main fields and in each sub-action field.
VGB PowerTech e.V. | SLIDE 15

**Wind Power Performance Data Exchange - WiPPeX**

- VGB PowerTech | Wind and its members have created a new database that supports operators to jointly optimize the operation of their wind power plants.
- The database provides different turbine platforms of various manufacturers (e.g. Enercon, Siemens, Vestas, Nordex, GE).
- Only companies providing operational wind power plant data can download raw and unfiltered data of the individually booked database platforms in order to create their own benchmark.
- The time series SCADA-based data are continuously supplied every 10 minutes.
- High data anonymity and compliance to confidentiality are ensured.
- VGB and its members are currently extending the database to create a failure statistic of the main wind power plant components.

**Your benefit:** Users have direct access to the processed operational anonymized data in order to create their own benchmark.
Benefits within our Supplementary Package Wind

Access to studies, presentations, articles, wind news, templates and overviews.

Within the scope of VGB PowerTech Wind’s extended information campaign for our members the goal is to pool knowledge, information, overviews and to furnish our members with relevant news.

- **VGB templates and overviews**
  (e.g. overview of international research projects, overview of international standards)

- **VGB wind energy news**

- **VGB Power Journal articles**

- **Published studies**

- **Published presentations**

**Ordinary members** of VGB will have access to the closed user group “Supplementary Package Wind”.
18 wind energy related VGB-Standards containing regularly updated best practice are available.

- **DE/EN** Provision of technical documentation (Technical Plant Data, Documents) for installation in the energy supply
- **DE/EN** Reference Designation System for Power Plants (RDS-PP®), Part 32: Wind Power Plants
- **DE/EN** Definitions and indicators
- **DE/EN** Fire protection in wind power plants
- **DE/EN** Corrosion protection of offshore wind farm structures (partly published)
- **DE/EN** Life cycle management of the foundation and tower of onshore wind turbines (in process)
- **DE/EN** Disposal of rotor blades (in process)
- **DE/EN** Oil monitoring in wind power plants (in process)

Ordinary members of VGB have access to VGB-Standards in electronic format (eBook) free of charge. The 18 wind energy related VGB-Standards have a value of more than 7,400 Euro. Special conditions are offered to affiliated and sponsoring VGB members. [https://www.vgb.org/shop/](https://www.vgb.org/shop/)
VGB-Standard RDS-PP®

With the VGB-Standard RDS-PP® “Application Guideline for Wind Power Plants”, a practical guide for the complete designation of this type of power plant has been developed. The uniform designation systematics of RDS-PP® is being applied over the entire lifetime of wind power plants and supports operators, manufacturers and service providers upon design and planning, construction, operation and maintenance of wind power plants.

License of RDS-PP®

- The use and application of RDS-PP® are already licensed for ordinary members of VGB.

VGB offers support

- Quick Scan of your RDS-PP® codes
- RDS-PP® application audit in your company
- RDS-PP® training for your staff
White Papers, Position Papers, Studies, Brochures

- **2020** Use of RDS-PP® as a harmonized designation system for wind power plants - Position paper from the owner’s point of view
- **2016** VGB White Paper “Strategies and Activities of the VGB Committees in the Field of Wind Energy”
- **2015** Levelised Costs of Electricity
- **2013** VGB Position Paper “Improving the relationship between manufacturers and owners of wind turbines - Position paper from the owner’s point of view”
- **2007** Role of Electricity (eurelectric)

As an international technical association for generation and storage of power and heat
VGB PowerTech | Wind is working in close co-operation with EURELECTRIC on European level.
Research Projects

- **Completed, e.g.**
  - Development of an Asset Connection Box
  - Condition Monitoring – Best practice Part (I)
  - Evaluation of ice detection systems for wind turbines (Part I)
  - Increased fatigue service life and inspection intervals of welded offshore foundations

- **Ongoing, e.g.**
  - Ice Detection Systems for Wind Turbines, Part II: Field test and benchmark
  - Wind Turbine SCADA-based Condition Monitoring

**Benefit** from an international collaboration to improve access to public funds and from cost savings, build-up and sharing of know-how.
Events and Workshops

Contact with experts on subject-specific events and workshops.

- 2019 Conference „Digitalization in the Wind Industry“
- 2019 Conference “Operation of Wind Power Plants in Cold Climate”
- 2018 IT-Security in the Wind Industry (internal VGB workshop)
- 2016 Future-proof designation und documentation of energy supply systems
- 2011 Health, Safety, Environment at Offshore Wind Parks

- 2015 - 2017 Oil Workshop for Wind Power Plants
- 2010 - 2019 Annual Conference “Offshore Wind Power Plants - Occupational Health and Safety”
- 2005 - 2019 Annual Conference “Maintenance of Wind Power Plants”

Direct exchange of experience with experts and subject-specific events as well as newest information on state of technology. Reduced registration fee for VGB members.
VGB PowerTech Journal

Since 2002 more than 100 reports dealing with wind energy have been published in VGB PowerTech Journal.

- 2016 Waldner et al - Windkraft in Österreich Erfolgsfaktoren und Hemmnisse für einen weiteren Ausbau
- 2015 Le Fevre de ten Hove - Field experience with advanced condition monitoring of wind turbines
- 2015 Fischer et al - Condition monitoring of wind turbines State of the art user experience and recommendations
- 2014 Richnow et al - Designation of wind power plants with RDS-PP
- 2014 Reimers et al - Holistic condition monitoring approach for wind turbines From blade tips to generator bearings
- 2014 Rassow - Performance Indicators of wind turbines - the KISSY system of VGB
- 2014 Korzeniewski - Condition analysis and operating lifetime extension concepts for wind turbines
- 2013 Wachtel - Weiterentwicklung in der Technologie und der Netzintegration von Windenergieanlagen
- 2013 Gellermann - Extension of the scope of Condition Monitoring Systems for multi-MW and offshore wind turbines
- 2013 Bertolotti - Increasing the competitiveness of wind energy
- 2012 Schulze - Customer-oriented service as a value contributor for wind turbine operators
- 2012 Rieck - Technology for the largest offshore wind turbine in the world
- 2009 Gruber - Optimising Wind Farm Maintenance
- 2009 Giehl et al - Best Practice - Ein Schlüssel für Umweltschutz, Effizienzsteigerung und sicheren Betrieb
- 2009 Bill et al - Reconditioning and Durable Wear Protection for Gear Boxes and Bearings in Wind Turbines

All VGB articles are available on DVD or CD. [https://www.vgb.org/shop/]
Visit our VGB PowerTech | Wind website

The following information is available at our website:  
https://www.vgb.org/en/_wind/

- **VGB Wind Energy in Detail**
  - VGB Wind Energy | Committee Structure
  - VGB Wind Energy | Infosheet (list of our offers and your benefits)
  - VGB Wind Energy | General Presentation (strategies, main topics, current activities)
  - VGB Wind Energy | Media Catalogue (list of our VGB-Standards and wind energy articles)

- **VGB Publications**
  - VGB/BAW-Standard: “Corrosion protection of offshore wind farm structures”
    (in EN and DE, free of charge)
  - VGB-Standard: “Wind Power - Definitions and Indicators”
    (in EN, DE and FR, free of charge)
Looking forward to answering any additional questions you might have.

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