Individual success through exchange of experience

- Performing as the collective European platform for operators, manufacturers and suppliers of hydropower plants.
- Being the first address for interested parties in technical, ecological and strategic issues concerning hydropower.
- Functioning as information platform for the hydropower community in Europe.

Networking throughout Europe

- 74 Operators
- 64 GW installed capacity
- 33 Manufacturers
- 19 Countries
VGB PowerTech | Hydro

The hydropower sector in Europe is going through a challenging phase, whilst at the same time hydropower provides plenty of opportunities for a safe and stable energy supply.

VGB PowerTech | Hydro provides a forum for hydropower operators, as well as equipment manufacturers and service providers for hydroelectric facilities to exchange information and to share ideas relating to techno-economic and environmental best practices on operation and maintenance. Another focus is set on strategic energy issues.

Our slogan for our common work is: 
**Success through Exchange of Experience**
Vision

“Hydropower with its base-load-like generation profile and its variety of ancillary services will be a main pillar in transforming the global energy supply structure towards a sustainable energy future, which is based on reliable, indigenous, non-polluting and competitive carbon-free generation.”

Mission

“VGB PowerTech | Hydro is the first address in technical, environmental and strategic issues for hydropower operators and hydropower equipment manufacturers / suppliers and functions as the collective European information platform for the hydropower community.”
Objectives

- Performing as the collective European information platform for the hydropower community
  - editing and providing of facts regarding positions and references
  - inserting positions into European and national regulatory frameworks

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

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

- **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 and future developments
  - direct exchange of experiences with experts
Comprehensive experience transfer and exchange

- Currently more than 100 professionals participating in VGB hydropower committees dealing with
  - energy strategies
  - energy policy aspects
  - techno-economic issues
  - environmental issues
  - operational topics

- Enhanced co-operation with eurelectric and direct contact to 7 other regional, national and international associations
The European hydropower information platform

… is the first address in techno-economic and environmental issues and functions as the collective European platform and key representative for the hydropower community.

**National Associations**
- BDEW - OEE
- UFE - VSE
- etc.

**Companies**
- Operators
- Manufacturers

**Regional Associations**
- IKSR - icpdr
- AGAW - etc.

**EU Hydro Policy Network Brussels**
Brussels liaison officers from companies

**Political lobbying**
- Techno-economic and environmental facts and coordination of statements

**Techno-economic and environmental facts and coordination of statements**

**EUROPEAN COMMISSION**

**Political lobbying of the officers**
Challenges of companies

- loss of know-how
- human resources
- cost pressure
- strategy requirements
- technical challenges
- environmental aspects
- economical development

Finding joint solutions for your future within VGB PowerTech | Hydro

- exchange of experience
- technical lobbying
- know-how retention
- VGB standards best practice
- representation of interests
- securing the future
- risk minimisation
- public relations
- network of experts
- position papers
- Optimisation of life cycle profit
- joint R&D projects
Steering of the strategic activities of VGB PowerTech | Hydro

Technical, operational and environmental issues and steering of subgroups

SF Hydro

TC Hydro

Power Plants

NC Hydro

20 Committees
1 SF … Strategic Forum
1 NC … Network Committee
1 TC … Technical Committee
3 TG … Technical Groups
3 PG … Project Groups
11 TG … Technical Groups on demand

Strengthening public perception of hydro power by elaboration of technical and environmental topics as well as political challenges in close cooperation with eurelectric.

Supervised by
TC Hydro Power Plants

Exchange of information

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

TG Operation and Maintenance of HPP
TG Components of HPP
TG Ecological Aspects of HPP
PG EC-Conformity for Hydro Power Plants
PG Pumped Storage Power Plants
PG IT Security for Hydro Power Plants

TG Plant Management Systems
TG Performance Indicators
TG Reference Designation and Plant Documentation
TG Interface Power Plant – Grid
TG Electrical Equipment
TG Instrumentation and Control
TG Fire Protection
TG Civil Structural Maintenance/Condition Monitoring
TG Civil Concepts / Specific Civil Solutions
TG Health and Safety at Work
TG Industrial Medicine / Health Management

Individual success through exchange of experience
The Strategic Forum is a platform for networking and sharing experiences regarding industry challenges of operators and manufacturers in addition to the existing line organisation of working committees. The participants are mainly high-level executives in their companies and have a wide-ranging overview of

- the energy market situation in their own countries and Europe-wide,
- the technical and environmental challenges and
- the strategies towards national policies and European regulations.

**Tasks**

- Coordination of the interests of the European hydropower sector on management level by synchronising requests, requirements and challenges.
- Pursuit of lobbying and strategic goals in coordination with eurelectric and organisation of the communication with authorities, commissions etc.
- Assessments and statements regarding the effects of regulations, statutes, standards and mandatory recommendations.
- Ensuring exchange of findings and experiences concerning general strategic and investment aspects.
Technical Committee “Hydro Power Plants”

The TC Hydro Power Plants coordinates the development of practical-oriented results on behalf of the Strategic Forum Hydro.

Tasks / Benefits for members

- Coordination of operator interests towards authorities and standardisation bodies
  *Reasoned counterstatements to excessive demands*

- Statements regarding regulatory frameworks on technical equipment for and operation of hydro power plants
  *Fast response by evaluating and influencing dossiers*
  *Assistance with the applications*

- Definition and documentation of the state of the art
  *Support for legal applications*

- Preservation and dissemination of knowledge
  *Dissemination of manufacturer-independent know-how*
  *Focus on operation and maintenance*
Technical Group “Operation and Maintenance of Hydro Power Plants”

Exchange of information and experience regarding operation, maintenance and asset management of hydropower plants

Tasks / **Benefits for members**

- Development of a guideline for risk-based maintenance and comparison of different maintenance strategies of European operators

  A minimal maintenance strategy enables the operators to adequately manage the risks of operating hydro power plants despite economic constraints.

  Examples of risk reduction are discussed.
Technical Group “Components of Hydro Power Plants”

Exchange of information and experiences regarding quality, availability, and damage prevention for components

**Tasks / Benefits for members**

- Definition of measures to improve the quality of components in hydropower plants
  
  *Long-term cost reduction due to a Total Cost Reduction approach*
  
  *Preparation of technical specifications for tendering and contracting (practical-orientated requirements)*
  
  *Best practice information on component configurations*
Technical Group “Ecological Aspects of Hydro Power Plants”

Exchange of information and experiences regarding environmental issues of European hydropower operators

Tasks / Benefits for members

- Review and technical elaboration of relevant ecological issues
  
  *Protection of the operator interests*
  *Basis for clarifying discussions with authorities*
  *Basis for technical and political discussions on legislative procedures*

- Creating and maintaining an overview matrix for all environmental aspects of hydropower plants
  
  *Targeted access to results of research projects, publications and evaluation reports*

- Formulation and representation of the operators’ interests in ecological issues in other associations and organisations (DWA, BDEW, AGAW etc.) as well as through contributions to events and through publications
  
  *Influencing regulations with technical expertise*
Project Group “Conformity for Hydro Power Plants”

Preparation of a VGB standard

Tasks / Benefits for members

- Revision of the VGB standard “Interaction of conformity assessment and occupational safety in hydropower plants“

The standard demonstrates a pragmatic approach for operators and project managers to legally operate hydropower plants despite missing CE labelling by the manufacturer.
Project Group “Pumped Storage Power Plants”

Exchange of information and experiences regarding operation, maintenance and asset management of storage and pumped storage power plants

Tasks / Benefit for the members

- VGB White Paper: Comparison of significant key performance indicators of storage technologies
  
  Correct display of the comparison and all benefits as a basis for promotional purposes

- Preparation of a technical survey of the asset managements of storage and pumped storage power plants
  
  Demonstration of all technical services relevant for European grid stability
  Basis for a EU lobbying document
  Perception as established large scale solution

- Evaluating the added value of a participation in the group Performance Indicators and benefit from the VGB database KISSY (Power Plant Information System)
  
  Establishing of uniform Performance Indicators for hydropower
  Evaluation of availability and damage events
Project Group “IT Security for Hydro Power Plants”

Exchange of information and experiences regarding IT security and process-related IT

Tasks / Benefits for members

- Exchange of experiences on sources of error and disruptive events in process-related IT
  
  *Experience exchange and professional training of the member’s IT staff with the aim of achieving the safest possible and highly available control technology*

- Targeted experience exchange on the implementation of new legislation and regulations
  
  *Exchange of experiences on the specific objective of certification according to ISO 27001 and the regulations of BSI (security catalogue, KRITIS, …)*

- Coordination with TG Instrumentation and Control
  
  *Information exchange on function and effect of instrumentation and control*
Network Committee “Hydro”

The Network Committee is a platform for sponsoring members with an extended membership status as well as for operators to promote hydropower in Europe.

Tasks / Benefit for the members

- Developing communication strategies to deliver defined messages to the EU institutions and other relevant policy makers
  *Improving the position of hydropower by joining activities together with eurelectric*

- Finding common positions regarding hydropower relevant market frameworks
  *Commenting the framework based upon technical and environmental facts and practicable applicability*

- Supporting the elaboration of hydropower relevant technical and environmental fact sheets
  *Elaborating detailed information by common investigations*

- Assisting in organising events and workshops to promote hydropower in Europe
  *Coordinating and representing the overarching interests and recommendations on international events and workshops*
Benefits within our Supplementary Package Hydro

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

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

- 1 presentation – collection of statements, facts and figures, questions and answers
- 17 published presentations
- 97 published public studies
- 47 VGB PowerJournal articles
- 17 VGB hydropower news in 2017
- 41 VGB hydropower news in 2018

- 3 VGB templates and overviews
  - List of 297 R&D hydropower projects
  - List of 394 international standards
  - List of companies having practical experience with our 35 VGB standards

- Presentations of VGB Expert Event
  - Digitalization in Hydropower 2018

Ordinary members and sponsoring members with extended status of VGB have access to the closed user group “Supplementary Package Hydro”.
Cooperation with eurelectric

Strengthening the hydro community with joint activities.

As an international technical association VGB is working with several national associations and in close co-operation with eurelectric on European level. Within the framework of a memorandum of understanding VGB’s professional competence is integrated into the political/strategic work of eurelectric.

- Promoting the role of hydropower
  - Technical support by VGB
  - Lobbying support by eurelectric
  - Joint public activities
  - Joint presentations at events

Our members benefit from the exchange of information and from the harmonisation of technical, environmental and political positions including the support of international and national partner associations.
VGB Standards

More than 35 VGB standards are available containing regularly updated best practice.

- DE/EN/FR  Hydro Power – Definition and Indicators
- EN/EN  Operational safety in electro-technology
- DE/EN  Conformity assessment and health and safety in hydro power plants
- DE/EN  Assessment of fatigue loaded components in hydro power plants
- DE/EN  Reference Designation System for Power Plants (RDS-PP®), Application Guideline Part 31: Hydro Power Plants
- DE/EN  IT security for generating plants
- DE/EN  Quality assurance in the manufacture of generators
- ….

Ordinary members of VGB have free access to VGB standards in electronic format (ebook). Special conditions are offered to affiliated and sponsoring VGB members.

https://www.vgb.org/shop/
VGB Standard RDS-PP®

With the VGB standard RDS-PP® “Application Guideline for Hydro 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 hydro power plants and supports operators, manufacturers and service providers upon design and planning, construction, operation and maintenance of hydro power plants.

RDS-PP® is an international standardized designation system and consequently enjoys worldwide recognition.

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

- 2018 Joint publication with eurelectric of the “Facts of hydropower in Europe”
- 2018 Joint publication with eurelectric of the revised “Hydropower Fact Sheets”
- 2018 Joint comments with BDEW on the DIN 19752 "Wasserkraftanlagen - Planung, Vorhabenrealisierung und Betrieb (Hydropower plants - planning, execution and operation)"
- 2016 Comments on final report “Forum Fish Protection” of German Umweltbundesamt
- 2016 Brochure: “Hydropower - Part of the renewable family”
- 2015 Levelized Costs of Electricity

As an international technical association for generation and storage of power and heat VGB PowerTech | Hydro is working with several national associations and in close co-operation with eurelectric on European level.
White Papers, Position Papers, Studies, Brochures

Coordinated and joint positions create more influence.

- 2015 Objection to the draft of the VDI-Richtlinie 4620 „Hydroelectric installations - Technology and design”
- 2013 Comparison of the status of fishpass frameworks in Europe
- 2013 Comparison of the fees for hydropower facilities in European countries
- 2007 Role of Electricity (Eurelectric)
- 2006 Position Paper to the Water Framework Directive

As an international technical association for generation and storage of power and heat VGB PowerTech I Hydro is working with several national associations and in close co-operation with eurelectric on European level.
Research Projects

International collaboration in joint R&D activities and improved access to public funds.

- 2019 – 2021 Horizon2020 - Development of a Research and Innovation Agenda (RIA) & Technology Roadmap (TR)
- 2015 – 2019 INADAR - Innovative and ecological approach for dam restoration

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

- 2019  Workshop „Digitalization in hydropower“, Graz/AT
- 2019  Workshop “Ecology and Large Hydropower – Fish population, ecological passability and habitat in practice and theory”, Augsburg/DE
- 2018  Workshop “Inspection, maintenance and refurbishment of hydropower plants”, at RENEXPO Salzburg/AT
- 2018  Workshop “Digitalization in hydropower”, Vienna/AT
- 2018  Hydropower breakfast event, Brussels/BE
- 2016  Workshop “Oil for hydropower plants”, Edertal-Hemfurth/DE

Contact with experts on subject-specific events and workshops.

Direct exchange of experiences 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 2000 more than 60 reports dealing with hydropower have been published in VGB PowerTech Journal.

- 2016 Stroppa - Um- und Neubauprojekte der Tiroler Wasserkraft AG für die Energiewende
- 2016 Proll - Laufschaufeln an Kaplanturbinen
- 2016 Pöhler et al - Zur wirtschaftlichen Situation der großen Wasserkraft in Bayern
- 2016 Matt - Die Kraftwerksanlage Obervermuntwerk II und deren Flexibilität
- 2015 Seidel - Regel- und Kurzzeitspeicherung bei Laufwasserkraftwerken
- 2015 Pfleger et al - Gesicherte Leistung der Wasserkraft in Deutschland und Österreich
- 2015 Harreiter - Neue Wasserkraft - Möglichkeiten in Europa und weltweit
- 2015 Engels et al - Kostenoptimaler Kraftwerksbetrieb mittels Wasserkraft-spezifischem Benchmarking
- 2014 Logie et al - Hydropower in the UK - Constantly growing
- 2014 Harreiter - Einsatz von Kompaktturbinen und Alternativkonzepten bei Flusskraftwerken
- 2013 Roger et al - Fischaufstieg - Bericht aus der Expertengruppe Wasserkraft
- 2013 Riesterer et al - Wasserkraftanlagen flexibel und dynamisch
- 2013 Leitl - Die Rolle der Wasserkraft im europäischen Stromversorgungssystem

All VGB articles are available on DVD or CD and are free of charge for ordinary members and sponsoring members with extended status.

https://www.vgb.org/shop/
Visit our VGB PowerTech | Hydro website

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

- **VGB Hydropower in Detail**
  - VGB Hydropower | Infosheet (list of our offers and your benefits)
  - VGB Hydropower | General Presentation (strategies – main topics – current activities)
  - VGB Hydropower | Media Catalogue (list of our VGB-Standards and hydropower articles)
  - VGB Hydropower | VGB Standards (free of charge: Definitions and Indicators in EN, DE and FR)
  - VGB Hydropower | Event Calendar 2018-2019 (overview of European hydropower events)

- **VGB Publications**
  - Hydropower Fact Sheets – Political recommendations and facts of hydropower in Europe
  - Hydropower Brochure – Be part of the renewables
Individual success through exchange of experience

Looking forward to answering any additional questions you might have.

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