



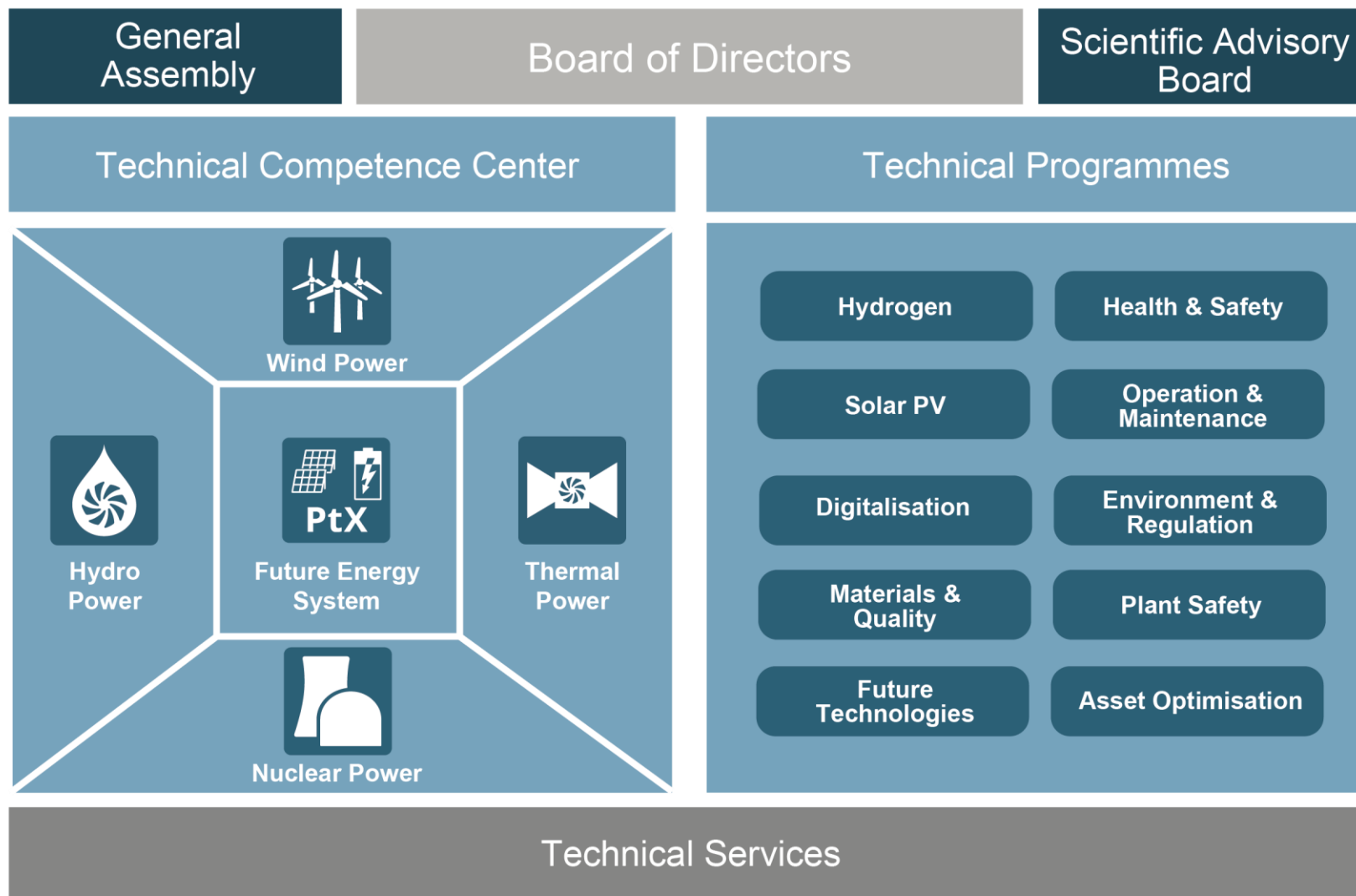
vgbe energy | Future Technologies

General Presentation

Individual success through exchange of experience within **vgbe energy | Future Energy System**



The Association



vgbe energy e.V. is the technical association of energy plant operators. Our members are companies that operate power, heat and cooling, energy storage and sector coupling plants worldwide. Since its foundation in 1920, vgbe energy has become the technical center of competence for the operators of power and energy plants.

Currently, vgbe energy has 411 members, comprising operators, manufacturers, and institutions connected with energy engineering. The members come from 29 countries and represent an installed power generation capacity of 342,000 MW.

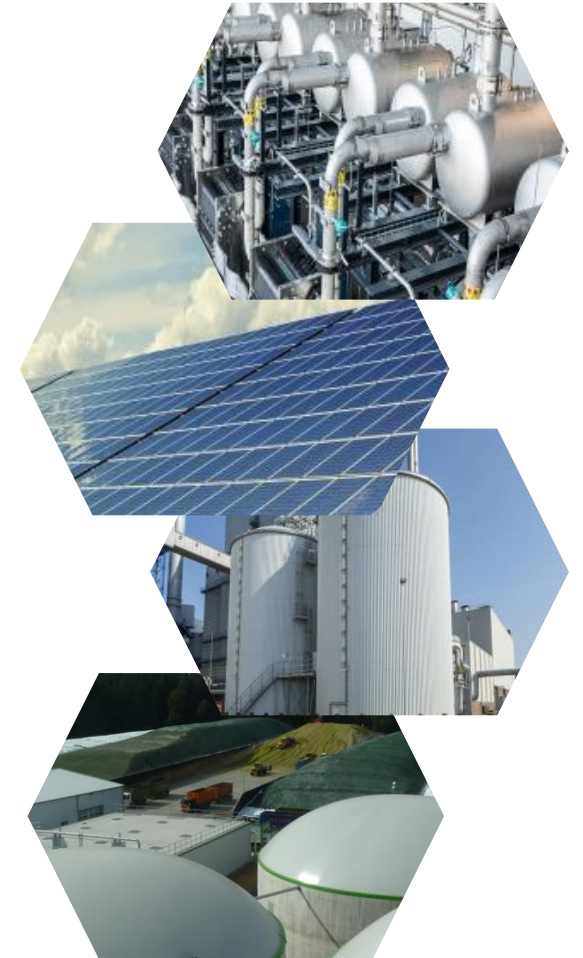
Competences in Future Energy System

vgbe energy | Future Energy System

The worldwide Energy Transition underway means the shift from existing energy systems, dominated by finite energy sources, toward a system mainly relying on renewable energy sources.

vgbe energy | Future Energy System FES was created to face the challenges brought about by this transition for the energy community and our members. It aims to be the first address for interested parties (operators, manufacturers and suppliers) in techno-economic and ecological issues as well as for research activities related to power plant operation and maintenance.

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



be energised
be inspired
be connected
be informed

*Focus on operation, maintenance and plant optimization in
techno-economic and ecological issues as well as on research activities*

vgbe's work

- **Generating technical and operational standards**
 - compiling practice-oriented vgbe-Standards considering the experience of operators
 - co-creating international technical standards
 - having access to international grants
- **Initiating and coordinating national and international research projects**
 - establishing and exchanging know-how
 - saving expenses by joint research projects
- **Supporting in implementation of EU-regulation**
 - providing facts & figures to our members
 - interpreting EU-regulation for practical use
- **Organizing conferences and workshops**
 - presenting the state of technology and future developments
 - networking and directly exchanging experiences with experts

Technical Competence Center Future Energy System

Steering Forum Future Energy System

vgbe Committees

TC Future Technologies (TC FT)

TC Hydrogen (TC H2)

TC Photovoltaics (TC PV)

TC Biomethane (TC BM)

Current Subjects

- Operational experience analysis
- Plant operation and maintenance
- Availability, reliability and safety
- Cost-efficient lifetime management
- Environmental management
- Digitalisation measures
- IT/OT and cyber security
- Health & Safety

- | | |
|--|--------------|
| ▪ Storage technologies | <i>TC FT</i> |
| ▪ Flexibility in energy systems | |
| ▪ H ₂ market ramp up | <i>TC H2</i> |
| ▪ Green hydrogen production | |
| ▪ Fault and failure analysis | <i>TC PV</i> |
| ▪ O&M (AI-monitoring, night inspection...) | |
| ▪ Biogas upgrading | <i>TC BM</i> |
| ▪ Process control | |

Activities

- | | |
|---|--|
| ▪ Exchange of experiences and information | ▪ Publications |
| ▪ Position papers | ▪ Conferences |
| | ▪ Participation in other organisations |

- | | |
|------------------------|------------------------------|
| ▪ vgbe-Standards | ▪ Databases |
| ▪ Research projects | ▪ Platform |
| ▪ Technical Programmes | ▪ Subject-specific workshops |

TC ... Technical Committee

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Comprehensive experience transfer and exchange

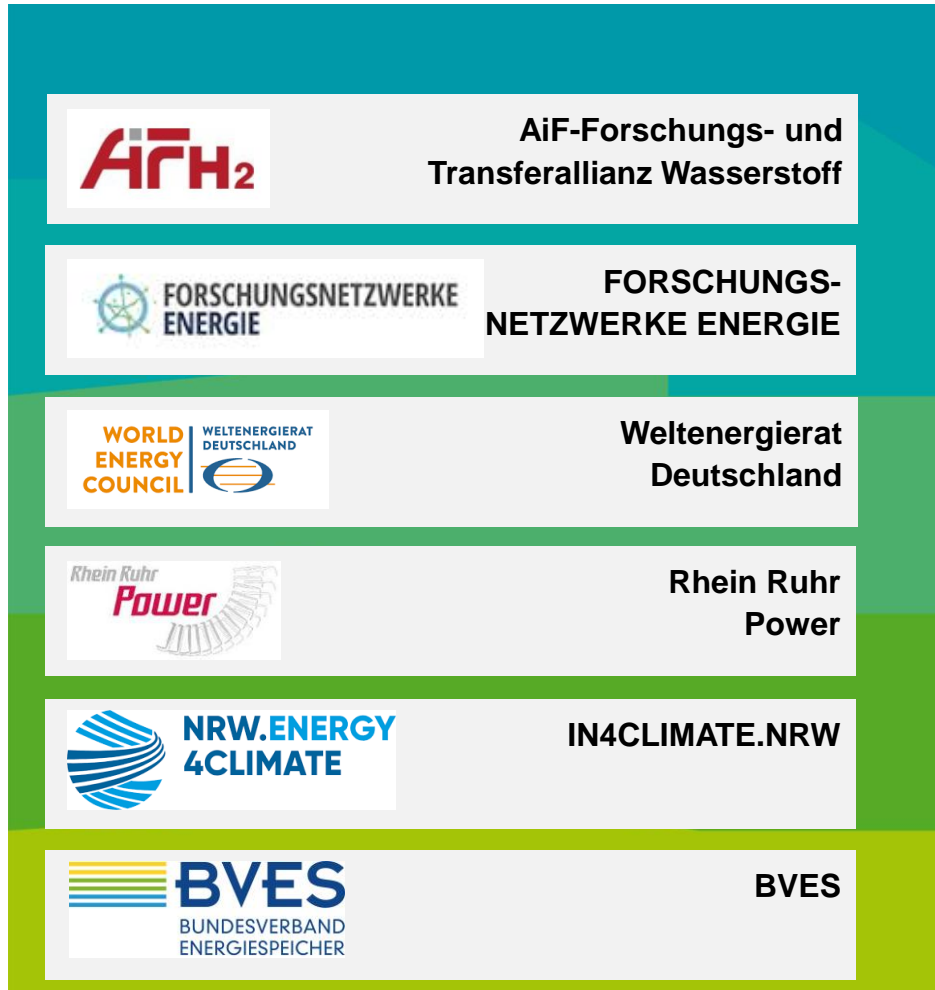
- operational issues
- techno-economic issues
- environmental issues
- energy strategies
- energy policy aspects

Networking throughout Europe

More than 80 professionals participating in vgbe energy | FES committees.

- Future Technologies
- Hydrogen
- Photovoltaics
- Biomethane

vgbe energy pushes the practical exchange of experience.



- The **AiF** and its members have been working successfully on technologies for more economical production, storage, distribution and use of hydrogen for many years in the interest of increasing the innovative strength and competitiveness of medium-sized companies in particular.
- In the **hydrogen research network**, experts from industry, universities and research institutes exchange views on generation, storage, distribution and cross-sector use of hydrogen.
- The **World Energy Council – Germany** represents all energy sources and technologies through its members and is the independent voice for international energy issues in Germany.
- In its projects, **RRP** deals with very different topics such as increasing flexibility in dispatchable generation, solar thermal and hybrid concepts, but also with economic issues in connection with new systems.
- As a nationwide unique platform on which industry, science and politics work together, **IN4climate.NRW** offers a space to develop innovative strategies for a climate-neutral industry.
- **BVES** as dialogue partner for policymakers actively contributes its solution proposals to the legislative processes. It represents the interests of its members in politics, business, and society at regional, national, EU, and international levels.

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In the TC “Future Technologies”, around 40 European member companies deal with fundamental questions about the future energy system. vgbe energy brought together diverse experts, from the fields of renewable energies to conventional generation, to discuss topics such as flexibility, storage technologies, Power-to-X, hybrid systems, etc. It is precisely the different perspectives within the membership of this non-homogeneous body that lead to creative approaches to developing common and viable solutions for the challenges of transformation in the energy sector.



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 vgbe-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

Current works

- Flexibility in energy system: dispatchable generation, operational flexibility, energy efficiency, storage integration
- Hybrid concepts: combination of conventional and renewable generation, carbon capture, utilization and storage
- Energy storage: battery storage, heat storage, power-to-heat-to-power
- Technology scouting: future developments, state of the art, new technologies
- Initiate and manage Bachelor / Master theses on relevant topics to gather knowledge

Technical Committee “Future Technologies”

Benefit from our expertise – Get in touch with us

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Your contact

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