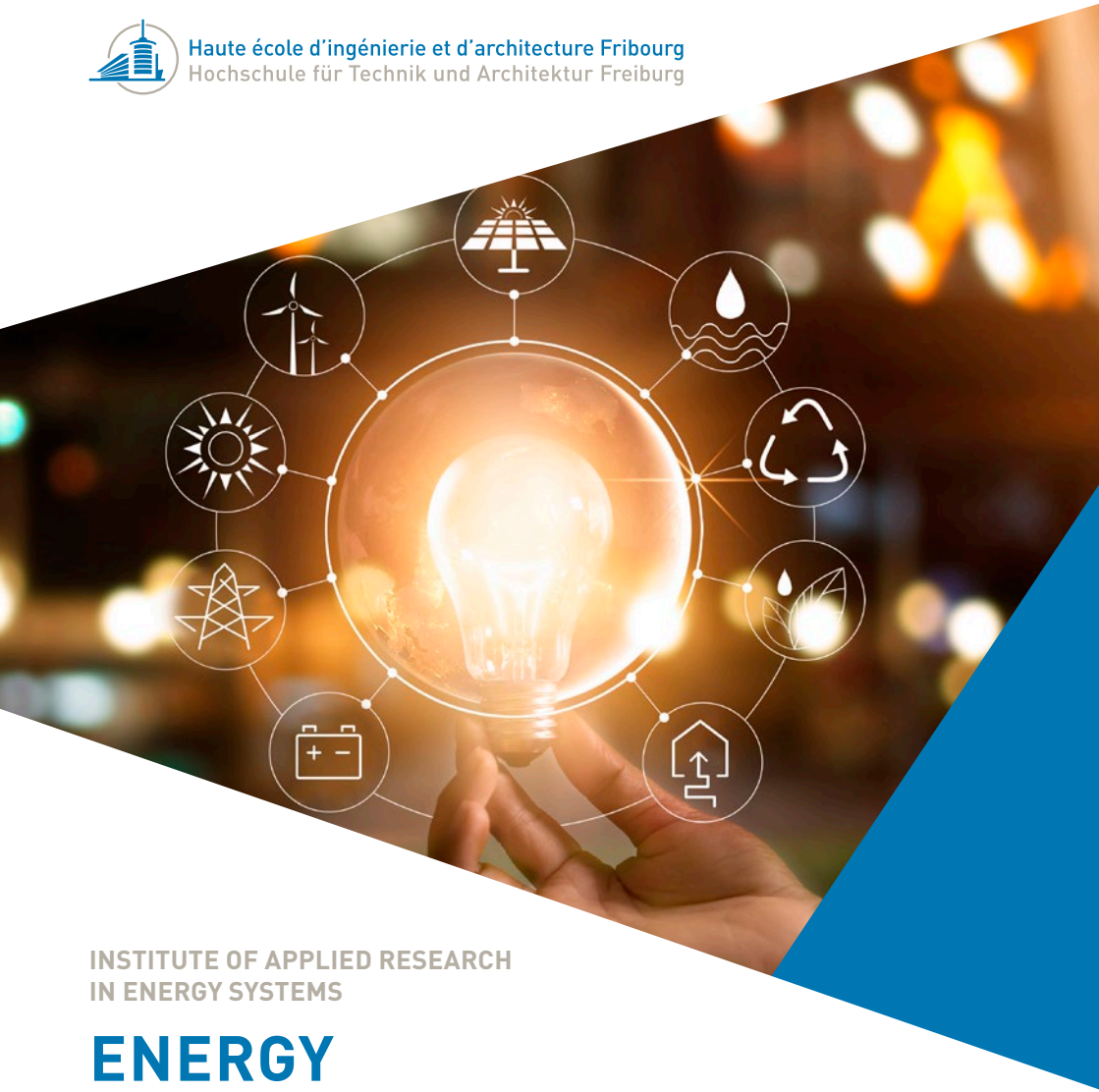
Haute école d'ingénierie et d'architecture Fribourg
Hochschule für Technik und Architektur Freiburg



INSTITUTE OF APPLIED RESEARCH
IN ENERGY SYSTEMS

ENERGY

Towards sustainable and efficient energy systems

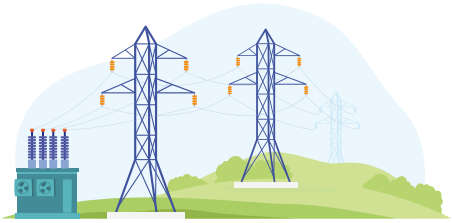
ENERGY
Institute of Applied Research
in Energy Systems

Hes·so

Towards sustainable and efficient energy systems

A profound transformation is underway in the energy supply sector and in systems of energy production and distribution. A range of factors including climate change, resource depletion, the phase-out of nuclear power, the growth of renewable energy and the decentralization of production are having a powerful influence on technological development. Digitalization offers numerous opportunities in this context.

Strategic Research Areas



Electrical and Thermal Networks

Energy Management and Optimization

The ENERGY institute is specialized in the design, modelling, simulation and testing of components and systems for electrical and thermal networks. Our work also addresses the challenges involved in energy integration and the management and optimization of individual and coupled networks.

Fields of activity:

- Electrical networks, their systems and components
- Thermal networks, their systems and components
- Micro-networks and the coupling of electrical and thermal networks

Buildings and Neighborhoods

Performance and Environmental Impact

In this research area, the institute addresses topics such as urban heat islands, life cycle analysis in the built environment (circular economy, choice of materials), the physics of buildings and technical installations, the performance gap and building-user interaction.

Fields of activity:

- Climate change mitigation and adaptation strategies, and the environmental approach to construction
- Energy systems: modelling, simulation, optimization, development, integration and monitoring
- Monitoring and optimization of energy efficiency at the building and neighborhood scales

Collaboration

Acting as a link between pure research and its applications, the ENERGY institute is an ideal partner for companies as well as public institutions. Our project partners receive valuable support in their efforts to innovate and create new products and services.

The ENERGY institute develops joint projects with actors from the following economic sectors:

- Thermal and electrical energy production and distribution
- Construction
- Technical facilities and equipment for the energy and construction sectors

The ENERGY institute also participates in national research networks, in particular through its involvement in the Smart Living Lab.

Team

More than 20 staff members and professors

Meet the team:

go.heia-fr.ch/en/energy-team

Projects

Numerous research projects have been carried out successfully.

Learn more about our research projects:

go.heia-fr.ch/en/energy-projects

Infrastructure

- Building performance monitoring
- Electrical machine laboratory
- High-voltage laboratory
- Electrical network laboratory
- Thermal and energy lab

See the complete equipment list on our website:

go.heia-fr.ch/en/energy-infra

Contact and Information

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