

# Institute profile

The aim of the Institute is the development of ecologically and economically reasonable technical solutions for the energy and environmental sector, industry and service sector.

The Institute focusses on projects on reuse, recycling and the cycle management of materials.



- Applied research and development for closed cycle management and environmental protection
- Development, accompaniment and implementation of practical experiments
- LCA for companies (according to GHG Protocol) as well as of plants, products and processes
- Life cycle assessment studies and efficiency analysis
- Consultation, analyses, project management
- Conception and implementation of further eduction measures
- Organisation of seminars and conferences
- Expert reports for waste management and biogas plants

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an der Hochschule Bremen GmbH**  
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## **Institut für Energie und Kreislaufwirtschaft an der Hochschule Bremen GmbH**

(Institute for Energy, Recycling and Environmental Protection at Bremen University of Applied Sciences)

### **Objective**

Public Private Partnership in the field of science: The Institute for Energy, Recycling and Environmental Protection is supported by two partners from industry, (Nehlsen AG, Diersch & Schröder GmbH & Co. KG) and the City University of Applied Sciences of Bremen. The Institute, founded in 2000, develops ecologically and economically useful solution concepts for concrete questions in recycling technology and environmental protection. It serves as a transfer point between science and industry.

### **Applied Research and Development**

The chief task of the Institute is the development of processes and concepts to enable the recycling and cycle management of substances, the efficient use of raw materials as well as the purification of waters, sludge, solid waste and exhaust air. The Institute creates expert reports, carries out LCA studies (including carbon footprint of companies as well as plants, products and processes) and acts as a consultant to companies, associations and public corporations.

The Institute carries out measures for further education and organizes conferences in the field of recycling and environmental protection. Many of the projects were, and are, carried out in cooperation with companies, universities and colleges throughout the Federal Republic of Germany. Contacts exist to partners in both European and non-European countries through international projects.

### **Linking of Research and Teaching**

Science and industry are dependent on each other, in order for creative ideas to be turned into practical solutions. The Institute serves as a bridge between science and industry so that, on the one hand, more knowledge can be gained and made available to others and, on the other hand, the needs and requirements of those who work in the field can be taken into account in research and training. By integrating students into application-applied research and development projects through their internships and theses, we ensure that they are involved in research at an early stage and thereby support a practice-oriented training.

### **National and international project management**

Since its foundation the institute has carried out various national and international projects in Africa, Asia, Oceania and Europe in the areas „Recycling and waste management“, with various partners from science and industry from Vietnam, Cambodia, Thailand, Laos, Papua New Guinea, India, Mauritius, Angola, Sierra Leone, Albania, Greece, Estonia, England and Germany.

## Projects (selection)

- „NURTURE – Recycling concepts for natural fibre composites“  
<https://www.iekrfw.de/nurture/>
- “Heat transition in rural areas – integrated planning approaches for the Northwest Metropolitan Region”  
<https://www.iekrfw.de/metropolregion-waermewende/>
- “VerAGruen“ – Utilisation of the growth of wet grassland for the production of renewable energy and coal for CO<sub>2</sub> storage  
<https://www.iekrfw.de/veragruen/>
- „RE\_SORT“ – Pyrolysis of thick-walled fiber composites as a key innovation in the recycling process of wind turbine rotor blades  
<https://www.ifam.fraunhofer.de/de/magazin/projekt-re-sort-recycling-windkraftanlagen.html>
- “Mehrweg-Roadmap” – Development of measures and a strategy plan for establishing a uniform reusable solution for Bremen events, company canteens and weekly markets, etc.  
<https://www.iekrfw.de/mehrweg-roadmap/>
- “sH<sub>2</sub>unter@ports” – Implementation of an H<sub>2</sub> shunting locomotive to reduce climate-relevant emissions in the port area  
<https://sh2unter.com/index.php/en/homepage-2/>
- “SmartRecycling-UP – AI and robotics for a sustainable circular economy”  
<https://www.smartrecycling-projekt.de>
- “zoCat – future-oriented catering” - development and testing of an indicator-based online decision-making system for the selection of sustainable dishes for large events  
<https://www.iekrfw.de/zocat/>
- „RecycleWind 2.0 – self-learning and resilient recycling network for wind turbines“  
<https://www.iekrfw.de/en/recyclewind-en>
- „KuWert – Vessel-based treatment of plastics for the implementation of value chains in less developed countries and to avoid plastic input into the environment, particularly marine ecosystems“  
<http://www.iekrfw.de/en/kuwert-en/>
- „CODWAP – Collaborative curriculum Development on Waste management in Africa and Pacific region“  
<https://www.iekrfw.de/en/codwap-en/>
- further projects can be found at <https://www.iekrfw.de/en/projects/>