



# Fraunhofer

ISI

FRAUNHOFER INSTITUTE FOR SYSTEMS AND INNOVATION RESEARCH ISI



ANNUAL REPORT  
**2016**

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## STRATEGIC VIEW TO THE INNOVATION PROCESS OF THE FUTURE

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The year 2016 was a successful and exciting year for the Fraunhofer Institute for Systems and Innovation Research ISI. Between January and December, a highly motivated team of around 210 members of staff worked on about 400 interesting projects and generated a turnover of 22.5 million euros. Our project results provide our clients from politics, industry and society with scientifically sound options of action for research and innovation policy decisions.

In addition, Fraunhofer ISI was present at numerous high profile events as an important actor in the innovation process, including the Research Summit 2016 in April, and the “Woche der Umwelt” (Environment Week) in June. Furthermore, the two sessions of the lecture series “Fokus: Zukunft. Unser Leben 2050” (Focus: Future. Our life 2050), which we organized together with the Karlsruhe Institute of Technology, and Siemens AG, were very successful.

A particular focus of our research this year which we also present in this annual report is our preliminary research to develop the innovation systems approach further. The aim here is to regularly revise established concepts of innovation systems research and to develop them further. This is absolutely essential in order to become aware of new forms of innovation and innovation actors as well as to gain new analysis perspectives and realistic insights into the innovation process. Against this background, the interdisciplinary team at our institute has further developed the innovation systems approach in several sub-projects and has also investigated how innovation systems can be actively shaped and new forms of innovation identified.

You will also find in this annual report selected examples of projects which show the diverse activities of our six Competence Centers (CC). Here, you will find information on the climate protec-

tion plan 2050, the organization of the EU heat transition, the mechanical and plant engineering of the future, innovative technologies for industrial resource efficiency, Europe’s positioning in new key technologies and the capacity for innovation of suppliers.

In the extensive appendix you will also find information on our projects, our membership in groups and alliances as well as the teaching activities, dissertations and lectures of our scientists. The list of our visiting scientists shows our involvement in the international research network.

We wish you instructive and enjoyable reading and look forward to receiving your feedback.

*Professor Marion A. Weissenberger-Eibl  
Director of the Institute*

*Dr. Harald Hiessl  
Deputy Director of the Institute*



## PRELIMINARY RESEARCH FOR THE FURTHER DEVELOPMENT OF THE INNOVATION SYSTEMS APPROACH

**In order to become aware of new forms of innovation, innovation actors and their impacts, established concepts of innovation systems research have to be reviewed regularly and developed further. Only by doing so are new analysis perspectives and realistic insights into the innovation process possible from which effective innovation policy measures can be derived. As part of its preliminary research, Fraunhofer ISI therefore further develops the innovation systems approach in several sub-projects and also investigates how innovation systems can be actively shaped and new forms of innovation can be identified.**

The characteristics of the innovation system are crucial for innovations to emerge. But what should an ideal innovation system look like? Which actors are needed in which constellation to create good conditions for innovations? The sub-project "Understanding innovations and actors in innovation systems" of Fraunhofer ISI looks at these issues. Several topic areas are analyzed which deal with actors, institutions and forms regarding the emergence of innovations. Examples are topics such as user innovation, frugal innovation, societal and collaborative innovation, new intermediary actors and non-research-intensive industries.

### **Development of a three-dimensional innovation systems framework**

While some of these phenomena can be integrated into the traditional innovation systems concept, the analysis of other topics suggests a thorough revision of the innovation systems framework. For this purpose a three-dimensional innovation systems frame was developed as part of the project. The first dimension is defined by the innovation range and demand, encompassed by innovation input as the second dimension. The third dimension establishes the framework conditions for innovations. First project results show that it is not necessarily possible in the innovation process to clearly assign actors and functions: For example societal actors and local user communities can no longer be reduced to the role of consumers as they contribute to the emergence and organization of innovations by sharing creative ideas and improvements as well as new financing models such as crowd funding. Particularly in the area of frugal innovations, which are essentially tailored to the core of customers' needs, such development processes in the interplay between providers and users play a key role. As can be demonstrated in an exemplary way by the success stories from developing countries, the capacity to come up with market-oriented innovations which are adapted to individual needs is becoming increasingly more important to the economic success of companies and whole nations.







The sub-project “New approaches of governance in innovation systems” also deals with the framework conditions for innovations, but puts the focus more on actively influencing and shaping them. One reason is that for a few years now innovation policies have increasingly oriented themselves towards social needs and included big societal challenges such as demographic or climate change. Due to this increasing “mission orientation” of innovation policies, a certain integration of societal needs into the innovation concept is needed. Taking the governance approach into consideration, the project investigates how innovations and their dissemination can be steered in a certain direction. This design requirement can come from industry, society or politics and may result from current technological (for example new forms of mobility) or ecological developments (for example climate change). This changes the normative political objectives (for example increasing importance of sustainability) and creates new requirements for innovations.

**How can innovations and innovation systems be actively influenced?**

In order to find out in practical terms how innovations and innovation systems can be influenced in a certain direction, the concept of the reflexive innovation system is developed in the project. Reflexivity is the ability of an innovation system to be aware of its current state, to formulate objectives for the system and/or goals for innovations and to develop and therefore implement suitable strategies. This requires four characteristics: The ability for self-reflection, integration, anticipation and the ability to experiment.

Several quality criteria are the result with which existing innovation systems can be examined regarding their options for influence and design.

If politics steer innovation systems in a particular direction – for example by the changes related to the energy transition from fossil to renewable energy carriers – it is an important task for innovation research to analyze the impact of political measures on the innovation system. This is exactly the purpose of the sub-project “Developing an approach to measure the impact of policy instruments on the diffusion of innovations using the example of energy efficiency in industry”. The project’s aim is to develop a system of quantitative and qualitative indicators for measuring the connection between innovation and energy policy as well as innovation dynamics and market diffusion. In a second step, the measurement approach is empirically tested using the examples of “energy management systems” (organizational innovation) and “energy efficient electric engines” (technical innovation). The basis is the approach to the technological innovation system whose development itself is subject of the preliminary research project “Further development and dynamization of the concept of sectoral and technological innovation systems”.

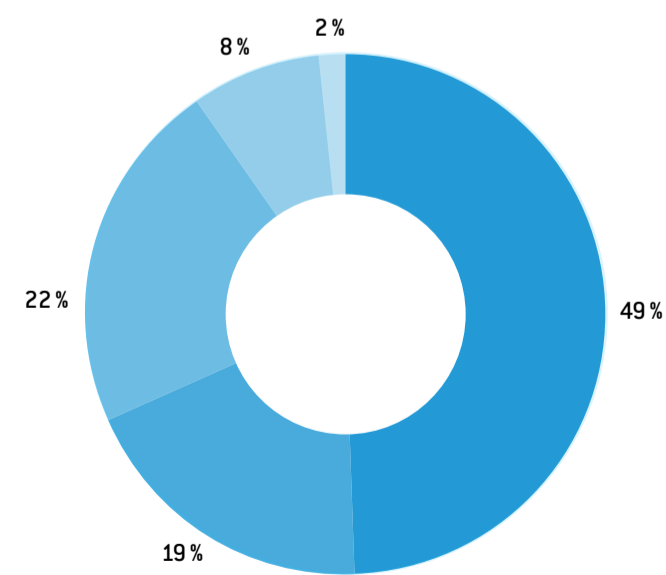


# FACTS AND FIGURES

## OPERATING BUDGET 2016

**22.5** million euros  
Total

**3.5** million euros  
Basic funding

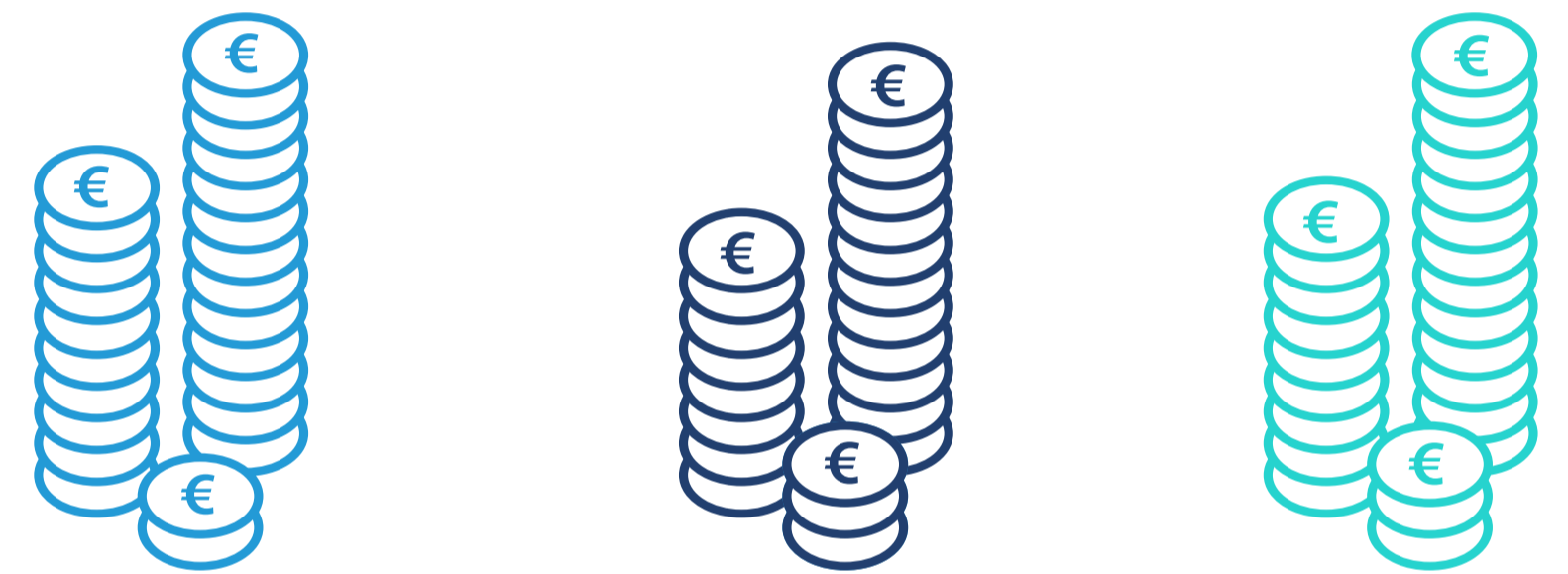


**19.0** million euros

### Earnings

▶ Total	19.0
▶ Public sector national	9.4
▶ Industry	3.6
▶ EU	4.2
▶ Other R&D	1.5
▶ Other earnings	0.3

## DEVELOPMENT OF TURNOVER in million euros



▶ 2016

▶ 2015

▶ 2014

## NUMBER OF STAFF

2016



Total

**212**



Scientists

**150**



Non-scientists

**62**

▶ 2016

▶ 2015

▶ 2014



# ORGANIZATION

## HEAD OF INSTITUTE



### Director

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## CONTROLLING AND FINANCE



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## SCIENTIFIC SUPPORT OF THE CLIMATE PROTECTION PLAN 2050

Germany has already set itself ambitious targets for medium- and long-term climate protection with its Energy Concept of September 2010: By the year 2020, greenhouse gas emissions are to be reduced by 40 percent and by 2050 by 80 to 95 percent compared to the year 1990. After a gap was discovered of around six to seven percent for the reduction target in the year 2020, the federal cabinet decided the "Action Program Climate Protection 2020" in December 2014. This program includes concrete measures to close the climate gap and key points to set up a "Climate Protection Plan 2050". This climate protection plan should contain intermediate targets necessary to reach the long-term climate protection target and develop concrete measures in a broad-based dialog process.

In order to set up the "climate protection plan 2050", the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) initiated a broad-based participation procedure with two groups: In the "stakeholder dialog", representatives from federal states, municipalities and interest groups developed proposals for strategic climate protection measures which should have an impact between 2020 and 2030. The second group consisted of selected citizens. In several dialog events between June 2015 and March 2016, both groups developed proposals for measures along five key fields of action for climate protection: energy industry, transport, buildings, industry as well as agriculture and land use.

Several institutes gave this dialog process and the development of the climate protection plan organizational and scientific support. Commissioned by the BMUB, Fraunhofer ISI together with the Öko-Institut (Institute for Applied Ecology) and IREES, supported the

project scientifically. This support included developing the scientific basis for setting the sectoral intermediate targets and emission paths leading to the 2050 target, accompanying the dialog events as experts, as well as evaluating the measures proposed as part of the dialog process.

The key result of the dialog process was the "Catalog of Measures 3.1", which was officially presented to the BMUB in March 2016. It contains roughly 100 strategic climate protection measures in the five fields of action. Fraunhofer ISI, together with its partners, evaluated all measures regarding their contribution to climate change mitigation, the costs to be expected and the economic benefit as well as possible synergies and conflicts with other policy areas. The most important five proposals for measures which came out of the citizen dialog were an international network for renewable energies, labeling products according to their ecological footprint, decentralizing energy production and distribution, tax incentives for climate-friendly transport as well as a catalog of measures for an agricultural transition.

The "Catalog of Measures 3.1" was an important basis for the actual "Climate Protection Plan 2050", which the BMUB developed following the dialog process in agreement with all the federal ministries involved. Even if the political decision-making process did not take up all the proposals from the participation procedure, a broad based dialog process, as set up for the first time by the BMUB for the "Climate Protection Plan 2050" and supported by Fraunhofer ISI, makes an important contribution to ensuring social acceptance of the long-term transformation of the energy system.

[Other projects of the Competence Center](#)

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### BUSINESS UNITS

▶ Renewable energies

▶ Energy policy

▶ Climate policy

▶ Electricity markets and infrastructures



## SCENARIO CALCULATIONS PROVIDE SUPPORT FOR THE DEVELOPMENT OF THE EU HEATING AND COOLING STRATEGY

The largest share of energy consumption in the European Union is accounted for by the provision of heat and cold, about 50 percent, even the share for mobility is significantly lower with 35 percent. At the same time, the use of renewable energies is increasing only slowly in most member states; particularly heat production is still dominated by the use of fossil fuels, such as gas, oil and coal.

The European Union has set itself ambitious energy and climate targets for the year 2030: reducing greenhouse gas emissions by a minimum of 40 percent compared to 1990, increasing the share of renewable energies to at least 27 percent, and raising energy efficiency by a minimum of 27 percent. If the EU wants to reach these targets, faster diffusion of renewable energies is necessary.

In order to fully support the use of renewable energy for heat production, the EU Commission proposed its highly regarded heating and cooling strategy in February 2016, which for the first time considered the heating and cooling sector as a whole.

Fraunhofer ISI strongly supported the EU Commission in the preparation of this strategy with the commissioned study "Mapping EU heat supply". The comprehensive energy balance for the heating and cooling sector of all EU countries, which was completed in the first part of the project, was used to develop the strategy on a sound data basis. Here, for example, it became apparent that, measured by the primary consumption for heat and cold production, just 18 percent are covered by renewable energies while natural gas accounts for a share of approximately 45 percent and is thus the most important energy source.

Furthermore, the project team coordinated by Fraunhofer ISI compiled the current status of the most important technologies for heat and cold production in all EU countries: 58 percent of coal-

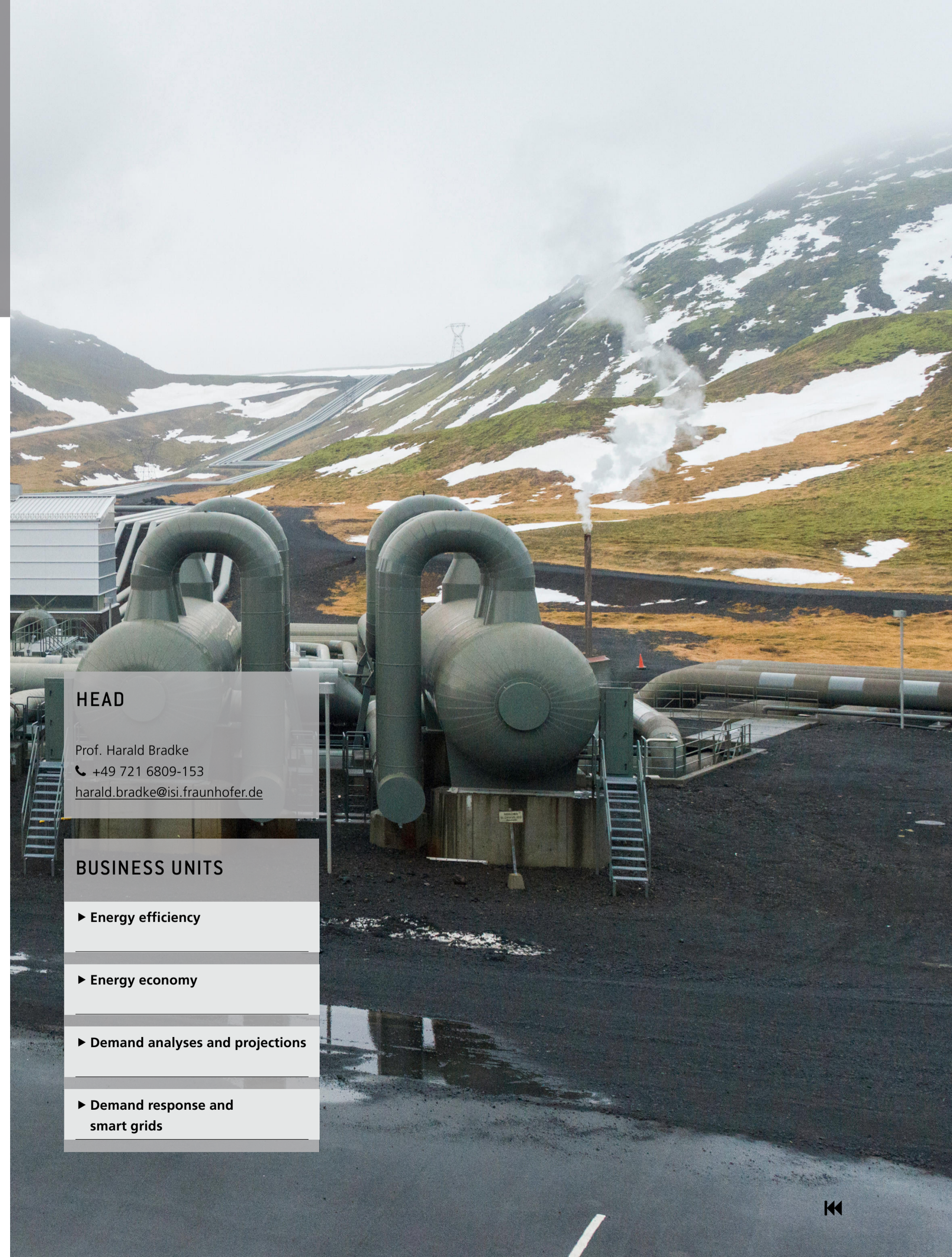
fired heaters, 45 percent of oil boilers and 22 percent of natural gas boilers are older than 23 years and have therefore exceeded their technical service life. Old systems also feature prominently in industry. More than half the steam turbines used for combined heat-and-power generation are more than 23 years old. On the one hand, these old plants entail great losses of efficiency; on the other hand, this is an opportunity to change from oil-fired heat production to renewable energies in the not too distant future as the old systems are due to be exchanged for age reasons.

The second part of the study will be published in spring 2017 and contains scenarios on the development of heat and cold supply of the EU until the year 2030 for the sectors buildings, industry and district heating. The scenarios are based on simulations using the energy system models FORECAST (developed by Fraunhofer ISI) Invert/EE-Lab and Green-X (both TU Wien). A particular focus was on possible funding instruments to increase the share of renewable energies. These scenarios have been included in current legislative initiatives of the EU Commission – this time in the EU Winter Package and the proposal to revise the Renewable Energies Directive.

In the past two years, the 500 page long study and an extensive annex has created the most comprehensive set of figures on the status quo of the energy consumption for heat and cold production in the EU and its development until 2030. In current projects in the EU research program Horizon 2020, Fraunhofer ISI builds on this foundation and continues research on possible paths to an EU-wide heat transition. The most important projects include Heat Roadmap Europe, progRESsHEAT and HotMaps.

All reports and data annexes of the project "Mapping EU heat supply" can be found on our [website](#).

[Other projects of the Competence Center](#)



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### BUSINESS UNITS

- Energy efficiency
- Energy economy
- Demand analyses and projections
- Demand response and smart grids



## TREND RADAR AND FUTURE IMAGES FOR THE MECHANICAL ENGINEERING INDUSTRY

In a longer term cooperation between the Mechanical Engineering Industry Association (VDMA) and the Fraunhofer Gesellschaft, the Competence Center Foresight of Fraunhofer ISI is working together with VDMA Future Business on a trend radar for mechanical engineering as well as future scenarios of different topic areas. The trend radar for mechanical engineering indicates societal, political, economic and technological developments currently on 50 trend cards and outlines the possible impacts for the mechanical engineering industry up to the year 2030. The trend cards support strategic foresight activities of the association members including the development of company-specific future scenarios.

“Machine Learning” and the artificial generation of knowledge though experience was the first topic, whose future development was looked at more closely. An artificial system learns from many examples and large unknown amounts of data which it can generalize and evaluate by itself. Machine Learning is an established subfield of artificial intelligence and its industrial use is already widely discussed in the US. However, up to now, only leading IT specialists have taken note of this technology in Germany and Europe.

Fast and extensive diffusion of the technology in the German mechanical engineering industry would entail huge changes. But when, to what extent and in what way will Machine Learning be introduced to the industry and particularly to customers and solution providers? And how can companies adapt to this development and profit from it?

In a scenario process, the following four future scenarios were developed in collaboration with experts in order to take account of the uncertainty regarding future developments and the need for information of mechanical engineering companies:

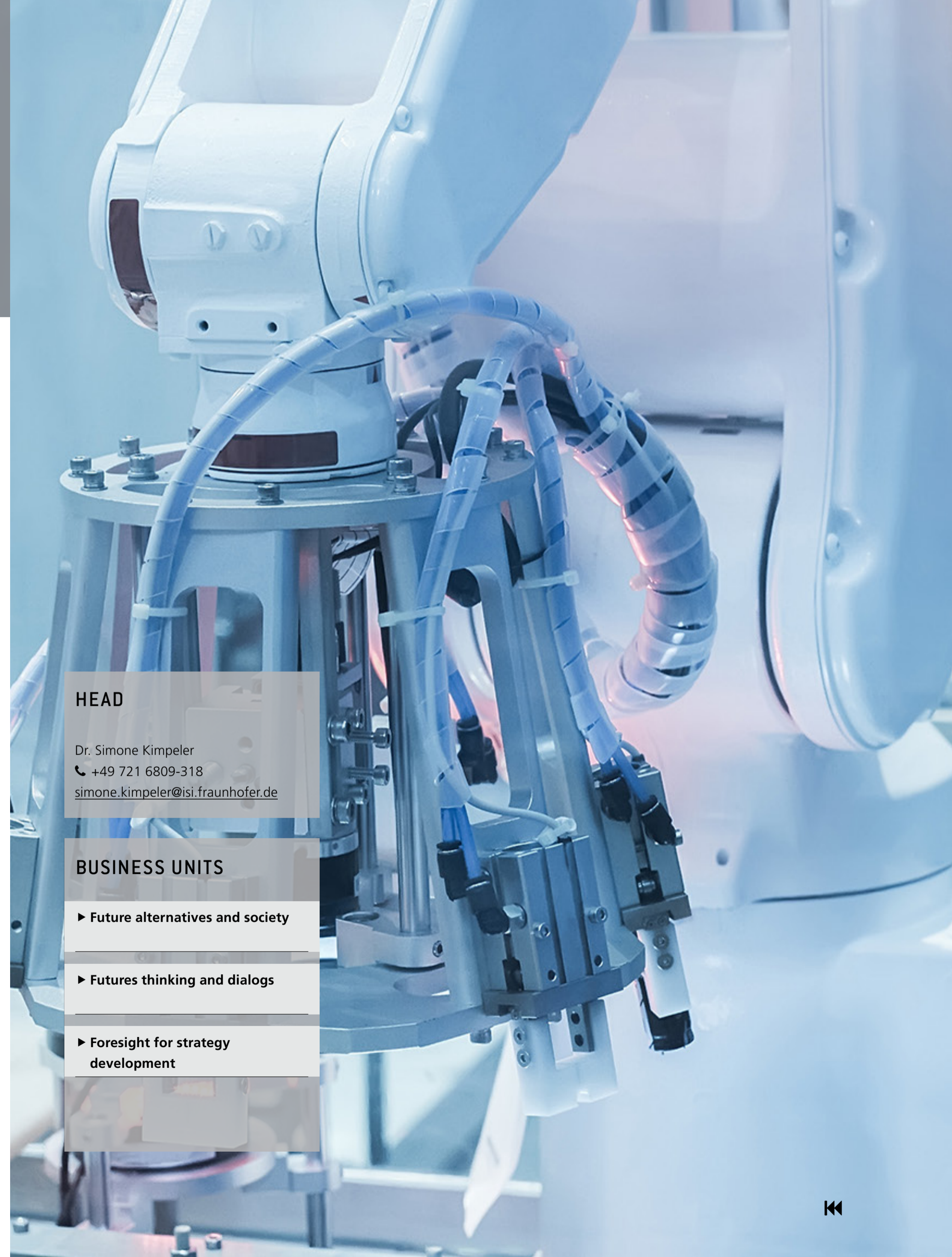
- ▶ “Avant garde wins”: Diverse co-operations lead to a triumph of Machine Learning in the mechanical engineering industry
- ▶ “Size matters”: Large companies use their vast data access as a competitive advantage for Machine Learning
- ▶ “Start SME networks”: Small and medium-sized enterprises advance the paradigm change
- ▶ “Digital steppe hinders”: Missing learning data, problems regarding data security and ethical concerns dominate in Europe

It has been found that the opportunities for German mechanical engineering companies to use Machine Learning range from the design and engineering process to administration, production up to operation management and reengineering. In all areas, the extensive integration of additional, innovative sensors in the components, systems and production lines as well as in the factory buildings will be a crucial element for success.

The existing competences in Germany for developing Machine Learning algorithms in research facilities offer a good starting point and in the long run should be brought closer together with German mechanical engineering expertise. In addition, access to operating data is a prerequisite for Machine Learning and accordingly improved possibilities to exchange data between companies would make spreading the technology easier.

Following Machine Learning, Fraunhofer ISI and the Mechanical Engineering Industry Association are developing further topics, for example, future materials scenarios. Their results will be presented at the Future Business Summit of the VDMA on 5 May 2017. Further information (in German) can be found on the [website of VDMA](#).

[▶ Other projects of the Competence Center](#)



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### BUSINESS UNITS

▶ Future alternatives and society

▶ Futures thinking and dialogs

▶ Foresight for strategy development



## INNOVATIVE TECHNOLOGIES FOR INCREASED INDUSTRIAL RESOURCE EFFICIENCY

In its Sustainable Development Strategy, the German government aims for the continuous increase of raw material productivity for Germany until the year 2030. As shown in the German Resource Efficiency Program (ProgRess II), the economical use of resources is not only to protect the resources which are available in the future but also to ensure the supply of industrial raw materials. This is particularly important for the German government's 2020 High-Tech Strategy, which intends to maintain or even increase the competitiveness of Germany as a production location on a high level through a comprehensive, future-oriented innovation policy.

As part of the program "Research for Sustainable Development" (FONA), the Federal Ministry of Education and Research has so far initiated a total of four support measures whose key objective is to increase resource efficiency. Fraunhofer ISI is responsible for the accompanying research and has been part of these measures since the beginning.

The most recent measure "r+Impuls – Innovative technologies for resource efficiency – Impulses for industrial resource efficiency" started in 2016 and for the first time the focus is on more mature technologies. This measure is intended to accelerate industrial application and foster wider market entry. Fraunhofer ISI coordinates the accompanying research of "r+Impuls" under the name "r4 TeTra (technology transfer project)".

The research agenda includes issues which were already relevant in the previous measures. Among these are particularly activities which connect actors with each other as well as with their environment in order to enhance the innovation strength of the funded joint projects. Also issues which cut across sectors and technologies are dealt with – particularly the question as to what contribution the funded research projects make towards reaching the objectives of "r+Impuls".

Ecological effects such as the contribution to increase the raw material productivity, the dissemination potential of the used technologies as well as impacts on the economic development and employment in Germany are investigated. The assessment of the criticality of raw materials which have either been saved or substituted in the research projects is also examined for selected raw materials.

A special feature of "r+Impuls" is that it offers targeted support for new solutions for the transition from laboratory to the market. The accompanying and transfer project of Fraunhofer ISI therefore includes particular activities in connection with the higher level of maturity of the technologies supported in "r+Impuls" and their greater proximity to the market.

There are two key elements for this purpose: The first important element is the identification of challenges common to the different projects. The legal conditions for operating innovative process technology as well as business models for the sales of these installations have turned out to be relevant aspects.

The second important element also aims at supporting the funded enterprises in identifying application potentials of the technologies they have developed. The objective is to exploit the existing potentials as much as possible and to identify additional potentials which have not been taken into account so far.

Further information on the project can be found on the [website](#).

[Other projects of the Competence Center](#)



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### BUSINESS UNITS

- ▶ Water resources management
- ▶ Sustainability innovation and policy
- ▶ Systemic risks
- ▶ Mobility



### INTERNATIONAL POSITIONING OF EUROPE IN KEY TECHNOLOGIES AT RISK

In 2016, the Competence Center Emerging Technologies dealt with Europe's future competitiveness in the area of research and innovation. As part of a study for the department DG Research & Innovation of the European Commission, a number of aspects were considered which have to be looked at against the backdrop of the rise of China and the continuously high research output of the USA.

The research questions in the project "Study on EU Positioning: An Analysis of the International Positioning of the EU Using Revealed Comparative Advantages and the Control of Key Technologies" were: In which research and development areas will Europe be strong in the year 2020 and in which ones weaker?

On the one hand, the Key Enabling Technologies (KETs) identified by the European Commission were considered: advanced materials, advanced manufacturing technologies, photonics, industrial biotechnology, nanotechnology as well as micro- and nano-electronics. On the other hand, the Societal Challenges defined within the research program Horizon 2020 were looked at: health, nutrition, energy, transport, climate, security as well as forestry/agriculture and the bio-economy.

In order to adequately answer the research questions, the scientists carried out several analysis steps. First of all, they examined the current strengths and weaknesses of the European research and innovation portfolios in the international context. They then calculated Europe's position in the year 2020 on the basis of insights into possible future key technologies and an impact analysis of current European research support using a scenario approach.

As is customary for calculations of international comparative advantages, the scientists used mainly statistics on business expenditure for research and development (R&D) as well as publication and patent data for the scenario analysis. In addition to quantitative

methods, from which current trends can be derived, qualitative methods were also used: For example, in order to identify potentially disruptive developments (game changers), more than 30 international expert interviews were conducted.

The most important result of the study is that Europe's position in the area of research and innovation, which is currently strong, is at risk in the future. The main reasons are that Asian technology regions are catching up rapidly and that the US will keep its lead as regards digitalization. Currently, Europe still has advantages in aerospace, Industry 4.0, the Internet of Things and particularly in climate research, transport and energy. However, these advantages could diminish because other world regions, especially China, increasingly strategically support and expand these areas.

As the various research and innovation activities in Europe cannot be translated automatically into comparative advantages on a global scale, the authors of this study recommend that Europe specializes more. In order to identify the right core areas, their recommendations include increasing Europe's strategic intelligence, for example, by making use of scientific scenario processes, or by supporting pre-competition cooperation with other world regions.

The publication "Study on EU Positioning: An Analysis of the International Positioning of the EU Using Revealed Comparative Advantages and the Control of Key Technologies" can be downloaded [here](#).

[Other projects of the Competence Center](#)

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#### BUSINESS UNITS

► Bioeconomy and life sciences

► Innovations in the health system

► Information and communication technologies

► Industrial Technologies



## HOW CAN SUPPLIERS' INNOVATION CAPABILITY BE ASSESSED?

For the project “DBInnoSupply”, Fraunhofer ISI developed an approach which integrates the criterion “Innovation as an assessment and development indicator” of existing as well as potential supply companies into the existing supplier management of Deutsche Bahn AG. The approach, which can also be adapted and applied to other companies, facilitates the identification of important innovation potentials of supplier companies, which can be exploited more within strategic development partnerships. It also stimulates suppliers' innovation activities with the aim of improving the regular suppliers' performance in the long term.

The developed approach comprises the following partial results:

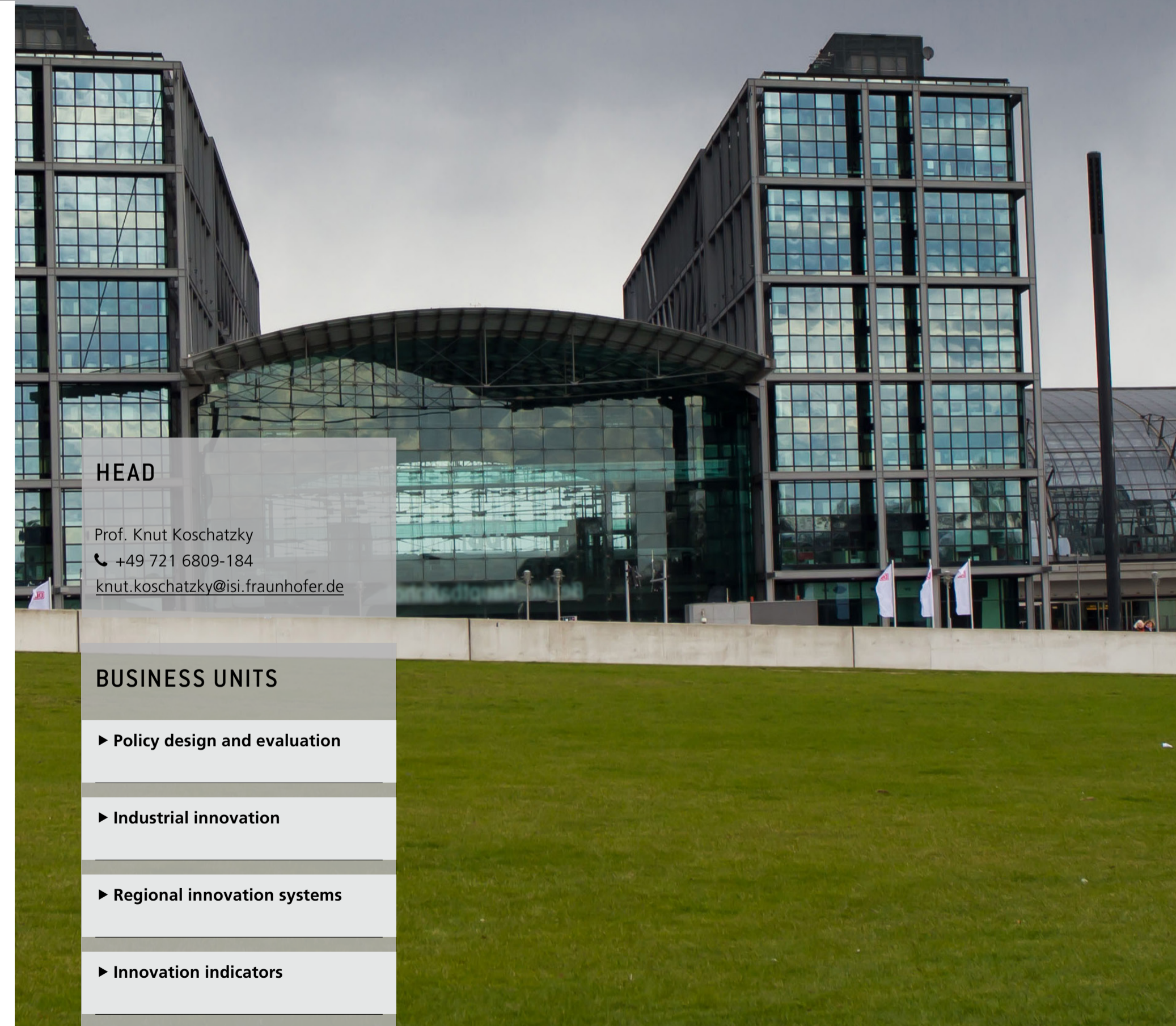
As part of the project, a complex measuring and assessment instrument was developed at Fraunhofer ISI, which enables Deutsche Bahn AG to continually identify and assess the ability to innovate of more than 15,000 suppliers. The instrument outlines a science-based assessment and measuring approach, which is unique in practice, and suitable to take the entire range of the operational innovation process into account. It can analyze the ability to innovate of the different “clusters” of suppliers regarding their current and future performances for Deutsche Bahn AG. In addition to selecting respective suppliers for certain innovative orders, it also serves to realize and systematically use possibilities for the exploitation and expansion of innovation potential as well as to identify fields of action to increase their innovation capability as part of the existing supplier development program of the company. By using this instrument, suppliers also receive an external evaluation of their innovation processes, which they can use as a basis to optimize and fine-tune these processes for key customers.

As part of the reorientation of the supplier management at Deutsche Bahn AG, an Innovation Award was presented for the first time in September 2016 at the “InnoTrans” in Berlin to particularly innovative and outstanding supplier companies. Fraunhofer ISI elaborated the concept for the award, organized and carried out the application process, and developed an approach to evaluate technologically totally different applications. Fraunhofer ISI also conducted the first assessment phase and organized and accompanied all the other assessment phases as part of the award at Deutsche Bahn AG. The instrument to measure and assess was a conceptual pillar of the award. Furthermore, a systemic evaluation approach with four main and 20 subcriteria as well as three different assessment methods were applied which enabled the assessment of the submitted, technologically totally different innovative performances throughout five process phases.

During the final analysis of the adaptability of the developed approach, it was proved together with Deutsche Bahn AG that “innovation capability” as a new suitability criterion as well as “innovative performance of the project” as a new award criterion can be operationally linked to the existing systematics of the DB supplier management. In addition to formal aspects, this also encompassed the possibility of the IT technical integration of the developed instrument and the reference to existing logics, structures and weightings and algorithms.

More information can be found on our [website](#).

[Other projects of the Competence Center](#)



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### BUSINESS UNITS

► Policy design and evaluation

► Industrial innovation

► Regional innovation systems

► Innovation indicators



## ADVICE FROM SCIENCE, INDUSTRY, POLITICS AND ADMINISTRATION

The Fraunhofer ISI is advised by a Board of Trustees. It includes members from science and industry as well as politics and administration. Chairman of the Board of Trustees is Dr. Manfred Wittenstein.

### MEMBERS FROM SCIENCE

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- ▶ **Professor Wilfried Juling**  
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### MEMBERS FROM INDUSTRY

- ▶ **Professor Andreas Barner**  
Speaker of the management board of Boehringer Ingelheim GmbH, Ingelheim am Rhein
- ▶ **Dr. Manfred Eggersdorfer**  
Director Research & Development of DSM Nutritional Products, Basel, Curator until December 2016
- ▶ **Dr. Andrea Frenzel**  
Senior Vice & President Strategic Planning of BASF SE, Ludwigshafen
- ▶ **Dr. Peter Fritz**  
Dr. Peter Fritz Consulting GmbH, Weingarten, Curator until December 2016
- ▶ **Dr. Heike Hanagarth**  
Senator of the Helmholtz-Gemeinschaft of the Research Field "Aeronautics, Space and Transport" and former chairwoman of Technology and Environment of Deutsche Bahn AG
- ▶ **Wolfgang Müller-Pietralla**  
Head of "Future Research and Trend Transfer", Volkswagen AG, Wolfsburg

...

### MEMBERS FROM POLITICS AND ADMINISTRATION

- ▶ **Hartmut Rauen**  
Member of the central management of the Association of German Machinery and Plant Manufacturers e. V., Frankfurt am Main
- ▶ **Professor Siegfried Russwurm**  
Former member of the management board of Siemens AG, Erlangen, Curator until December 2016
- ▶ **Dieter Schwer**  
Former Member of the central management of the Federation of German Industries e.V. (until August 2016), Berlin
- ▶ **Dr. Toni S. Seethaler**  
Head of Innovation Networks and Public Funding of R&D of Freudenberg & Co.KG, Weinheim
- ▶ **Dr. E. h. Manfred Wittenstein**  
Chairman of the board of Wittenstein AG and former president of the Association of German Machinery and Plant Manufacturers e. V., Igersheim
- ▶ **Engelbert Beyer**  
Head of Department 11 "Innovation strategies" in the Federal Ministry of Education and Research, Berlin
- ▶ **Professor Beat Hotz-Hart**  
Member of the science team on ETH Board, Zurich, Curator until December 2016
- ▶ **Michael Kleiner**  
Head of Department III "Research, Technology transfer, E-Science, International" at the Ministry of Science, Research and the Arts Baden-Wuerttemberg, Stuttgart, Curator until July 2016
- ▶ **Dr. Peter Mandler**  
Head of Department 71 "Questions of Principle of Industrial and Technology Politics" and Deputy Head of Department 7 "Industry, Innovation and Technology Transfer" at the Ministry of Finance and Economy Baden-Wuerttemberg, Stuttgart



# GROUPS AND ALLIANCES | ACADEMIC TEACHING | DISSERTATIONS

## GROUPS AND ALLIANCES

### Fraunhofer ISI is a member of the Fraunhofer groups:

- ▶ Materials and Components Group
- ▶ Group for Defense and Security (Guest)

### Fraunhofer ISI is part of the Fraunhofer Alliances:

- ▶ Batteries
- ▶ Big Data
- ▶ Energy
- ▶ Nanotechnology
- ▶ SysWasser
- ▶ Transport

## ACADEMIC TEACHING

### Daniel Bachlechner

SEMINAR  
*Management von Informationssystemen*  
University of Innsbruck, Austria

### Harald Bradke

LECTURE  
*Energiewirtschaftliche Aspekte der Energietechnik I*  
University of Kassel

### SEMINAR

*Energiewirtschaftliche Aspekte der Energietechnik II*  
University of Kassel

### Sibylle Braungardt

LECTURE  
*Renewable Energies*  
Karlsruhochschule International University, Karlsruhe

### LECTURE

*Climate and Energy Policy*  
University of Freiburg

### Barbara Breitschopf

GUEST LECTURE  
*Economic Instruments*  
Vrije Universiteit Amsterdam, Netherlands

### LECTURE

*Renewable Energy*  
Karlsruhochschule International University, Karlsruhe

### LECTURE

*Resource Economics*  
Karlsruhe Institute of Technology

### Kerstin Cuhls

SEMINAR  
*Methodologische Grundlagen der Zukunftsforschung*  
Freie Universität Berlin

### SEMINAR

*Implementation von Forschungsergebnissen aus der Zukunftsforschung*  
Freie Universität Berlin

### Ewa Dönitz

SEMINAR  
*Innovationswerkstatt: Innovations- und Projektmanagement*  
Femtec Berlin

### Vicki Duscha

LECTURE  
*Climate and Energy Policy*  
University of Freiburg

### Elisabeth Dütschke

LECTURE CONTRIBUTION  
*Renewable Energy*  
Karlsruhochschule International University, Karlsruhe

### Wolfgang Eichhammer

LECTURE + SEMINAR  
*EU Energy Efficiency Policy*  
Utrecht University, Netherlands

### Rainer Elstrand

LECTURE  
*Energiewirtschaft I Energienachfrage*  
Offenburg University of Applied Sciences

### LECTURE

*Rationelle Energieanwendung der Industrie*  
University of Koblenz-Landau

### LECTURE

*Analyse der Energiebereitstellung und -umwandlung*  
University of Koblenz-Landau

### LECTURE

*Einführung in die VWL, Mikroökonomik I*  
Baden-Wuerttemberg Cooperative State University, Lörrach

### Tobias Fleiter

LECTURE  
*Energy Policy*  
Helmholtz Research School Energy Scenarios, Karlsruhe

### Till Gnann

SEMINAR  
*Elektromobilität – Konzepte, Treiber und Potenziale*  
Karlsruhe Institute of Technology

### Matthias Gotsch

LECTURE  
*Strategisches Management*  
Baden-Wuerttemberg Cooperative State University, Karlsruhe

### LECTURE

*Innovationsökonomik*  
Karlsruhe University of Applied Sciences

### Bruno Gransche

SEMINAR  
*Erzählte Zukünfte – Narrationen in der Zukunftsforschung*  
Karlsruhe Institute of Technology

### Anne Held

LECTURE  
*Energy Industry Management*  
Karlsruhochschule International University, Karlsruhe

### Nils Heyen

SEMINAR  
*Einführung in die Medizinsoziologie*  
University of Konstanz

### SEMINAR

*Technik und Gesellschaft*  
Furtwangen University

### Simon Hirzel

LECTURE  
*Energy Efficiency*  
Karlsruhochschule International University, Karlsruhe

### Petra Jung Erceg

LECTURE  
*Personalentwicklung für Dienstleistungen*  
Karlsruhe University of Applied Sciences

### LECTURE

*Dienstleistungsökonomik*  
Karlsruhe University of Applied Sciences

### Marian Klobasa

LECTURE  
*Windenergie*  
University of Freiburg

### Daniel J. Koch

SEMINAR  
*Methoden im Innovationsmanagement*  
Karlsruhe Institute of Technology

### SEMINAR

*Technologien im Innovationsmanagement*  
Karlsruhe Institute of Technology

### SEMINAR

*Technologiebewertung*  
Karlsruhe Institute of Technology

### Knut Koschatzky

SEMINAR  
*Innovationssysteme in räumlicher und sektoral-technologischer Perspektive – Wissenschaftliche und politische Weiterentwicklungen*  
Leibniz Universität Hannover

### SEMINAR

*Aufgaben und Rollen von Forschungseinrichtungen in nationalen und regionalen Innovationssystemen*  
Leibniz Universität Hannover

### Christian Lerch

LECTURE  
*Dienstleistungsökonomik*  
Karlsruhe University of Applied Sciences

### Simon Marwitz

SEMINAR  
*Auslegungen von Stromnetzen*  
University of Applied Sciences Bingen

### Cornelius Moll

SEMINAR  
*Schwerpunkt-Seminar Marketing/ Management-Insights*  
University of Hohenheim

### Peter Neuhäusler

TUTORIAL  
*Management neuer Technologien – Technikbewertung mit Patentanalysen*  
Karlsruhe Institute of Technology

### Jose Ordenez

LECTURE  
*Renewable Energies*  
Karlsruhochschule International University, Karlsruhe

### Matthias Pfaff

LECTURE  
*Einführung in die VWL, Mikroökonomik I*  
Baden-Wuerttemberg Cooperative State University

### Benjamin Pfluger

LECTURE  
*Renewable Energies*  
Karlsruhochschule International University, Karlsruhe

### Patrick Plötz

SEMINAR  
*Elektromobilität – Konzepte, Treiber und Potenziale*  
Karlsruhe Institute of Technology

### LECTURE

*Quantitative Methoden der Energiewirtschaft*  
Karlsruhe Institute of Technology

### Martin Pudlik

LECTURE  
*Renewable Energy Policy, Modelling and Analysis of Potential*  
University of Cranfield, Great Britain

### LECTURE

*Renewable Energy Policy, Modelling and Analysis of Potential*  
University of Freiburg

### Mario Ragwitz

LECTURE  
*Climate and Energy Policy*  
University of Freiburg

### LECTURE

*Wind Energy*  
University of Freiburg

### Thomas Reiß

LECTURE  
*Management neuer Technologien*  
Karlsruhe Institute of Technology

### Karoline Rogge

LECTURE  
*Introduction to Energy Policy*  
University of Sussex, Brighton, Great Britain

### SEMINAR

*German energy transition*  
University of Sussex, Brighton, Great Britain

### SEMINAR

*Technological Innovation Systems*  
University of Sussex, Brighton, Great Britain

### Clemens Rohde

LECTURE  
*Energieeffizienz*  
Technische Universität Darmstadt

### SEMINAR

*Grundlagen des Planens, Entwerfens und Konstruierens – Energie und Ressourcenmanagement*  
Technische Universität Darmstadt

### Joachim Schleich

LECTURE  
*Advanced Econometrics*  
Grenoble Ecole de Management, France

### LECTURE

*Energy Economics*  
Grenoble Ecole de Management, France

### LECTURE

*Business Economics*  
Grenoble Ecole de Management, France

### Ulrich Schmoch

LECTURE  
*Techniksoziologie*  
Karlsruhe Institute of Technology

### LECTURE

*Innovation & Transfer*  
German University of Administrative Sciences, Speyer

### Torben Schubert

LECTURE  
*Globalization of Innovation*  
Lund University, Schweden

### Rainer Walz

LECTURE  
*Umweltökonomik und Nachhaltigkeit*  
Karlsruhe Institute of Technology

### LECTURE

*Umwelt- und Ressourcenpolitik*  
Karlsruhe Institute of Technology

### Marion A. Weissenberger-Eibl

SEMINAR  
*Fallstudienseminar*  
Karlsruhe Institute of Technology

### SEMINAR

*Aktuelle Themen im Innovationsmanagement*  
Karlsruhe Institute of Technology

### LECTURE

*Innovationsmanagement: Konzepte, Strategien und Methoden*  
Karlsruhe Institute of Technology

### Martin Wietschel

LECTURE  
*Energiepolitik*  
Karlsruhe Institute of Technology

### LECTURE

*PhD Program KIC: Energy models – supply and demand side*  
Grenoble Ecole de Management, France

### SEMINAR

*Themenfelder Energie und Umwelt*  
Karlsruhe Institute of Technology

### LECTURE

*Technologischer Wandel in der Energiewirtschaft*  
Karlsruhe Institute of Technology

### LECTURE

*Energy Efficiency – Demand side*  
Hector School, Karlsruhe

## DISSERTATIONS

### Piret Fischer (née Kukk)

*Complexities in Building Innovation Systems. The Case of Radical Medical Technologies*  
Prof. Marko Hekkert  
Prof. Ellen Moors  
Utrecht University, Netherlands

### Victoria Kayser

*Extending the Knowledge Base of Foresight. The Contribution of Text Mining.*  
Dr. Knut Blind  
Technische Universität Berlin

### André Kühn

*Ökologische und ökonomische Effekte einer Regionalisierung der Automobilzulieferer – ein systemdynamisches Wirkungsmodell*  
Prof. Heike Flämig  
Hamburg University of Technology

### Katharina Mattes

*Materialeffizienzinnovationen in Betrieben des Verarbeitenden Gewerbes – Eine ganzheitliche Analyse der Adoptionsfaktoren*  
Prof. Carsten Dreher  
Freie Universität Berlin

### Kristin Reichardt

*The policy mix and its role for innovation: Insights from offshore wind in Germany*  
Prof. Marko Hekkert  
Universität Utrecht, Niederlande

### Uta Schneider

*Und wenn das Auto elektrisch wäre: Eine Studie zur prägenden Wirkung von Mobilitätsleitbildern in Familien*  
Prof. Günter Burkart  
Leuphana University of Lüneburg



# PRESENTATIONS

## PRESENTATIONS

### EXAMPLES

#### Ali Aydemir

*Energy savings of intercompany heat integration – A methodological framework (part I)*

- ▶ 14. Symposium Energieinnovation, Graz, Austria

*Energy savings of intercompany heat integration: tapping potentials with spatial analysis.*

- ▶ eceee Industrial Summer Study, Berlin

#### Hendrik Berghäuser

*Die Dritte Mission von Hochschulen. Eine Analyse der Landeshochschulgesetze in Deutschland. Impact von Wissenschaft & Hochschulen. Aktuelle Fragestellungen und empirische Befunde.*

- ▶ Speyerer Wissenschaftstage, Speyer

*Die Dritte Mission von Hochschulen. Die organisatorische Ausgestaltung eines neuen Aufgabenbereichs*

- ▶ 8. ZSM Nachwuchstagung zum Thema Hochschulen als Organisation und die Organisation von Hochschulen – Reformen des Wissenschaftsbetriebs in Theorie und Praxis, Magdeburg

#### Miriam Bodenheimer

*Beyond Technology: Towards Sustainability through Socio-Economic Transitions*

- ▶ IST 2016: International Sustainability Transitions Conference, Wuppertal

#### Harald Bradke

*Anspruchsvoller Klimaschutz und industrielle Wettbewerbsfähigkeit*

- ▶ Umweltgutachten 2016 – Impulse für eine integrative Umweltpolitik, Berlin

*Lernende Energieeffizienz-*

*Netzwerke – Chancen, Erfahrungen und Empfehlungen*

- ▶ Berlin Energy Days, Berlin

*Technologien für die Energiewende*

- ▶ Verleihung des Robert-Majer-Preises der VDI Gesellschaft Energie und Umwelt, Heilbronn

#### Sibylle Braungardt

*Macroeconomic effects of ambitious energy efficiency policy in Germany*

- ▶ Colloquium of the Barcelona Institute of Economics (IEB), Barcelona, Spain

#### Barbara Breitschopf

*Impacts of Renewable deployment on technology costs*

- ▶ 39<sup>th</sup> Annual IAEE International Conference, Bergen, Norway

*Prices and Costs of EU-Energy: Auswirkungen der EU-Klima- und Energiepolitik auf die Strompreise*

- ▶ Workshop, BMWi, Berlin

*Prices and Costs of EU-Energy: Drivers of electricity price in EU countries*

- ▶ Workshop, DG Ener, Brussels, Belgium

#### Susanne Bühner

*Evaluation Framework for Promoting Gender Equality in Research and Innovation*

- ▶ Open Evaluation Conference, Vienna, Austria

#### Kerstin Cuhls

*Foresight and urgency – the discrepancy between long-term thinking and short-term decision-making*

- ▶ Jubiläumstagung der International Society for the Study of Time, Edinburgh, Great Britain

*Foresight: Welche langfristigen Entwicklungen in Gesellschaft, Wissenschaft und Technologie kommen auf uns zu?*

- ▶ Sikom-Tagung Sprache ohne Grenzen, Heidelberg

*The role of foresight in identifying and responding to grand challenges*

- ▶ Tagung Norwegischer Forschungsrat/Forskningsradet, Societal challenges are challenging research policy, Oslo, Norway

#### Stephanie Daimer

*Knowledge Triangle Policies and Practices in Germany*

- ▶ 47<sup>th</sup> Meeting of the OECD Working Party on Innovation and Technology, Paris, France

*Future Periscope: Europe in 2030 and beyond – Visions for the European Research Area*

- ▶ ESOF EuroScience Open Forum 2016, Manchester, Great Britain

#### Claus Doll

*LivingRAIL: Vision Rail 2050*

- ▶ Transportation Research Board (TRB), 95<sup>th</sup> Annual Meeting, Washington, D.C., USA

*Advanced Spatial and Urban Structures for Shift to Rail Scenarios*

- ▶ World Congress on Railway Research (WCRR), Milan, Italy

*Rail, Road and New Modes – Which Way to GHG Neutrality?*

- ▶ International Forum on Sustainable Mobility, Casablanca, Morocco

#### Ewa Dönitz

*Blick in die Zukunft – Foresight als Innovationsstrategie*

- ▶ Alpbacher Technologiegespräche, Arbeitskreis Zukunft erfinden: Innovationsprozesse neu gestalten, Alpbach, Austria

*Trendanalyse und Methodik der Trendbewertung*

- ▶ 7. Arbeitstreffen der User Group Innovationsmanagement in der Energiewirtschaft, Leipzig

*View into the future – Foresight as an innovation strategy*

- ▶ 4<sup>th</sup> Fraunhofer Innovation and Technology Platform 2016, Session on Smart Energy, Delhi, India

#### Vicki Duscha

*Marginal abatement cost curves and techno-economic carbon price models for ETS*

- ▶ International Modeling Conference 2016, Seoul, Korea

*Benchmarking and dynamic allocation in the EU ETS after 2020: An ex-ante assessment*

- ▶ International Symposium: Lessons from the evaluation of existing Emission Trading Schemes in China, Korea and the European Union for future design, Beijing, China

*Bottom-up scenarios for a deep decarbonization*

- ▶ SPP 1689 Workshop on 1.5° C target and climate engineering, Kiel

#### Elisabeth Dütschke

*Regional energy efficiency networks – what factors make them successful?*

- ▶ eceee Industrial Summer Study, Berlin

*Why are individuals likely to change to sustainable modes of transport like carsharing and electric vehicles?*

- ▶ 4<sup>th</sup> European conference on behaviour and energy efficiency (Behave 2016), Coimbra, Portugal

*Die soziale Akzeptanz eines nachhaltigen Energiesystems*

- ▶ Ringvorlesung – Ökonomische Entscheidungen in volatilen Energiemärkten, Karlsruhe

#### Katharina Eckartz

*Overview about Post-Doc Projects*

- ▶ 10<sup>th</sup> IMPRS Topics Workshop, Jena

#### Wolfgang Eichhammer

*Experience with the Transformation of the Energy System in Germany*

- ▶ 2<sup>nd</sup> Ministerial High-level Round Table Discussion, 3<sup>rd</sup> Arab Forum for Renewable Energy and Energy Efficiency, Cairo, Egypt

*Cost-effective Energy Savings Potentials in EU Countries*

- ▶ International Energy Policy & Programme Evaluation Conference IEPPEC: Make the Paris agreement a reality with effective evaluation for energy efficiency, Amsterdam, Netherlands

*Have benchmarks set under Phase III of the EU ETS influenced actual verified emissions of installation?*

- ▶ International Symposium: Lessons from the evaluation of existing Emission Trading Schemes in China, Korea and the European Union for future design, Beijing, China

#### Rainer Elsland

*Netzentwicklungsplan Strom – Stromverbrauch und Regionalisierung*

- ▶ Bundesnetzagentur, Würzburg

*Netzentwicklungsplan Strom – Stromverbrauch und Regionalisierung*

- ▶ Bundesnetzagentur, Berlin

*Heat Roadmap Europe 4 – Status quo of heating demand in Europe*

- ▶ ICLEI – Local Governments for Sustainability, Freiburg

#### Lorenz Erdmann

*Mineral Intelligence Capacity Analysis – An overview for the EIP meeting*

- ▶ European Innovation Partnership (EIP) on Raw Materials, Meeting of Operational Groups (OGs), Brussels, Belgium

*Realweltliche Dynamiken in der Zukunftsforschung: Schwache Signale, koelutionäre Szenarien und Living Labs*

- ▶ Zukunftsforschung für Transformation. Von der Vorausschau zum zielorientierten Handeln für nachhaltige Entwicklung, Berlin

*Zukunftsbilder für Offene Werkstätten*

- ▶ 1. interdisziplinäre Konferenz zur Zukunft der Wertschöpfung – dezentral, vernetzt, kollaborativ, Hamburg

#### Anke Eßer

*Negative Preise (§ 51 EEG 2017)*

- ▶ Aktuellen Fragen der Direktvermarktung, Stiftung Umweltenergie-recht, Würzburg

*Hemmnisse im Bereich der Umlagen, Entgelte, Abgaben, Steuern – Status quo*

- ▶ Plattform Strommarkt zu den Themen Sektorkopplung und Flexibilisierung, Berlin

#### Nele Friedrichsen

*Cost-efficiency of the EU ETS – an ex-post analysis*

- ▶ 39<sup>th</sup> Annual IAEE International Conference, Bergen, Norway

*Erste Erfahrungen mit der Benchmarking-Zuteilung im EU ETS*

- ▶ VDI-Expertenforum Emissionshandel – Ausgestaltung des EU ETS nach 2020, Bonn

*Impact of benchmarks in Phase III on allocation compared to allocation in Phase II of the EU ETS*

- ▶ International Symposium: Lessons from the evaluation of existing Emission Trading Schemes in China, Korea and the European Union for future design, Beijing, China

#### Rainer Frietsch

*BERD by technologies*

- ▶ NSF-Workshop on the Classification of High Technology/Knowledge Intensive Industries, Arlington, USA

*Made in Germany – has the high quality of German products a cultural origin?*

- ▶ Pujiang Innovation Forum, Shanghai, China

*Science Expansion in China – Effects for East-Asia and the World*

- ▶ German Embassy, Beijing, China

#### Till Gnann

*Can policy measures foster plug-in electric vehicle market diffusion?*

- ▶ Electric Vehicle Symposium, EVS 29, Montreal, Canada

*ALADIN (Alternative Automobiles Diffusion and Infrastructure) model for market diffusion of advanced-technology vehicles and extension to ALADIN to jointly model market diffusion and charging infrastructure deployment*

- ▶ Presentations at Argonne National Lab and Oak Ridge National Lab, Chicago, Knoxville, USA

*What does the future vehicle fleet look like? A comparison of PEV market diffusion models*

- ▶ Presentations at ICCT, EPA, DOT and DOE, Washington, D.C., USA

#### Matthias Gotsch

*Open Innovation Ansätze im Rahmen der Dienstleistungsentwicklung – Entwicklung eines Service Open Innovation Framework*

- ▶ Dienstleistungsmodellierung 2016, Karlsruhe

#### Michael Haendel

*Analyse der zukünftigen Entwicklung von negativen Preisen am Strommarkt*

- ▶ 14. Symposium Energieinnovation, Graz, Austria

#### Andrea Herbst

*Einfluss von Materialstrategieverbesserungen auf die industrielle Energienachfrage*

- ▶ 14. Symposium Energieinnovation, Graz, Austria

*Analysis of GB's future electricity demand: challenging National Grid's estimates*

- ▶ Energy Systems Conference 2016: 21<sup>st</sup> Century Challenges, Westminster, London, Great Britain

#### Nils Heyen

*Einfluss und Potenzial nicht-zertifizierter Expertise im Bereich Gesundheitsforschung*

- ▶ Health IT Forum auf der Medizinmesse MEDICA, Düsseldorf

*Mehr Gesundheit durch Quantified Self? Zu den Folgen der digitalen Selbstvermessung und möglichen Szenarien für 2030*

- ▶ Grand Challenges meistern – 7. Internationale Tagung des Netzwerks Technikfolgenabschätzung, Bonn

#### Harald Hiessl

*Wasserinfrastrukturen für die Städte der Zukunft: Motivation und Inhalte des Projekts TWIST++ (Transitionswege Wasserinfrastruktursysteme: Anpassung an neue Herausforderungen im städtischen und ländlichen Raum)*

- ▶ Abschlussveranstaltung TWIST++, Lünen

*Integrierte Systemlösungen für Wasser und Energie*

- ▶ INIS Konferenz, Berlin

#### Simon Hirzel

*Ansatzpunkte für den energieeffizienten Einsatz von Druckluft*

- ▶ Lernendes Energieeffizienz-Netzwerk Ettlingen, Firma Rotech Systemkomponenten, Ettlingen

*Programmes and requirements concerning energy audits & energy management in Europe*

- ▶ Eurochambres Energy & Environment Committee Meeting, Brussels, Belgium

#### Djerdj Horvat

*Absorptive Capacity: Opening the Black Box from a Process Perspective*

- ▶ XXVII ISPIIM Innovation Conference – Blending Tomorrow's Innovation Vintage, Porto, Portugal

*Innovation ability as part of a forward-thinking supplier evaluation system*

- ▶ XXVII ISPIIM Innovation Conference – Blending Tomorrow's Innovation Vintage, Porto, Portugal

*Case Study of Croatian manufacturing industry: Industry 4.0 Providers or Users?*

- ▶ 6<sup>th</sup> International Conference on Mechanical Technologies and Structural Materials – MTSM, Split, Croatia

#### Angela Jäger

*Nutzung von Industrierobotern und deren Auswirkung auf Betriebsebene*

- ▶ Zukunftsprojekt Arbeitswelt 4.0, Stuttgart

*Analysis of the impact of robotic systems on employment in the EU*

- ▶ European Robotics Forum, Ljubljana, Slovenia

#### Petra Jung Erceg

*The role of entrepreneurs in technology relevant absorptive capacity process: A comparative case study in four manufacturing SMEs in Danube region*

- ▶ Entrepreneurship Teaching, Research and Practice in Global Environment – Building Bridges, 7<sup>th</sup> International Conference, Nessebar, Bulgaria



# PRESENTATIONS

*Vorstellung der Studie Industrieller Mittelstand: Spitzenstellung in Gefahr?*

- ▶ Kroatische Wirtschaftskammer, Zagreb, Croatia

## Simone Kimpeler

*Foresight: From Determinism to Constructivism*

- ▶ 7<sup>th</sup> Meeting of Global Foresight Organizations Network, GFN, Beijing, China

*Global Trends 2035 – Impacts on Markets and Marketing*

- ▶ 62. Deutscher Weinbaukongress, Stuttgart

*Soziale Innovationen als Schlüssel für die Große Transformation*

- ▶ Innovationen – Mit Mut in eine nachhaltige Zukunft. 25 Jahre German Federal Environmental Foundation, Berlin

## Anna-Lena Klingler

*Kann Eigenversorgung zur Entlastung von Niederspannungsnetzen beitragen?*

- ▶ 14. Symposium Energieinnovation, Graz, Austria

*Identifying representative types of residential electricity consumers – a cluster analysis of hourly smart meter data*

- ▶ 4<sup>th</sup> European Conference on Behaviour and Energy Efficiency (Behave 2016), Coimbra, Portugal

## Marian Klobasa

*Die Netzentgeltssystematik für Strom – Status Quo und zukünftige Herausforderungen*

- ▶ BMWI Plattform Energienetze – Arbeitsgruppe Regulierung, Berlin

*Funktion und Entwicklung negativer Preise im Strommarkt*

- ▶ Bundesverband Erneuerbarer Energien (BEE), Workshop: § 24 EEG und seine Folgen für den Strommarkt und Investitionen, Berlin

*Smart Grids for RES-Integration and more flexibility in the power system*

- ▶ Japanisch-Deutsches Zentrum Berlin (JDZB): Symposium Elektrizitätssysteme der Zukunft, Stromnetze und Speicherung, Berlin

## Jonathan Köhler

*Modelling Long-run Transition Pathways in Mobility with the MATISSE-KK model: low carbon cars or alternative lifestyles?*

- ▶ IST 2015, Wuppertal

*Neue Mobilität: Wind in der Seeschifffahrt*

- ▶ Mobilitätsmarkt und Bedürfnisse der Mobilitätskunden 2040 in der Schweiz, Zurich, Switzerland

## Knut Koschatzky

*Implications of required regional proximity in strategic research partnerships*

- ▶ Regional Innovation Policies (RIP) Conference, Cardiff, Great Britain

## Henning Kroll

*Digitalization – A Transformative Challenge*

- ▶ International Forum on Science and Technology Innovation Center 2016: Innovation and Entrepreneurship, Structural Reform and Synergetic Development, Beijing, China

*(How) Can Frugal Innovation be a Strategy for Europe?*

- ▶ Scientific Symposium: Potentials of Frugal Innovation in Industrial Countries, Leipzig

*Frugal Innovation for Europe*

- ▶ LEIT-NMBP Programme Committee, Brussels, Belgium

## Marianne Kulicke

*EXIST-Programm – Erfahrungen und Ausblick*

- ▶ Seminar: Unternehmen gründen und fördern – Königsweg des Wissenstransfers?, Verein zur Förderung des deutschen & internationalen Wissenschaftrechts, Erfurt

*Erfahrungen und Best-Practice aus über 17 Jahren EXIST-Förderung für die Weiterentwicklung der Transfer- und Gründungsstrukturen*

- ▶ Transfertagung Transfer zwischen Wirtschaft und Hochschule – Regionale Erfolgskonzepte, Friedrich-Schiller-University Jena

*Sicherung der Beratungsqualität – Erfahrungen aus dem EXIST-Programm*

- ▶ Fachkongress Gründungs- und Nachfolgeberatung, Stuttgart

## Sabine Langkau

*Rohstoffe für Zukunftstechnologien – Highlights aus dem Aktualisierungsprojekt*

- ▶ Berliner Recycling- und Rohstoffkonferenz 2016, Berlin

*Aktuelles aus dem BGR/DERA-Projekt: Rohstoffe für Zukunftstechnologien*

- ▶ Kolloquium Angewandte Geowissenschaften, Berlin

## Ralf Lindner

*Navigieren in Richtung Responsible Research and Innovation: Governance-Prinzipien zur strategischen Reflexion*

- ▶ Grand Challenges meistern – 7. Internationale Tagung des Netzwerks Technikfolgenabschätzung, Bonn

*Navigating towards responsible research and innovation: facilitating strategic reflection*

- ▶ Eu-SPRI Forum Annual Conference, Lund, Sweden

*Monitoring the Evolution and Benefits of Responsible Research and Innovation (MoRRI) – a preliminary framework for RRI dimensions & indicators*

- ▶ OECD Blue Sky Forum, Gent, Belgium

*Frank Marscheider-Weidemann Ergebnisse der Studie Rohstoffe für Zukunftstechnologien 2016*

- ▶ Rohstoffe für Zukunftstechnologien, Berlin

*Rohstoffe für Zukunftstechnologien 2016*

- ▶ Hauskolloquium der BGR, Berlin

## Simon Marwitz

*Auswirkungen von Ladestrategien für Elektrofahrzeuge auf den Investitionsbedarf in ein elektrisches Niederspannungsnetz*

- ▶ 14. Symposium Energieinnovation, Graz, Austria

## Julia Michaelis

*Wirtschaftlichkeitsbewertung von Power-to-Gas im zukünftigen Energiesystem*

- ▶ Netzwerk Wärme der Deutschen Umwelthilfe – Power-to-Gas – Potenziale für die erneuerbare Energieversorgung?, Berlin

*Wirtschaftlichkeitsbewertung von Einsatzkonzepten für Power-to-Gas im zukünftigen Energiesystem*

- ▶ Konferenz des Leibniz-Forschungsverbundes Energiewende: (De)zentrale Energiewende – Wirklichkeiten, Widersprüche und Visionen, Berlin

## Cornelius Moll

*Dienstleistungsorientierte Geschäftsmodelle für Industrie 4.0 – Aktueller Stand und Potenziale für KMU*

- ▶ MKWI 2016 – Multikonferenz Wirtschaftsinformatik, Ilmenau

*Analysis of the Impact of Robotic Systems in the EU*

- ▶ European Robotics Forum, Ljubljana, Slovenia

*Nutzung von Industrierobotern und deren Auswirkung auf Betriebsebene*

- ▶ Zukunftsprojekt Arbeitswelt 4.0, Stuttgart

## Björn Moller

*Machine Learning 2030 – Zukunftsbilder für den Maschinen- und Anlagenbau*

- ▶ VDMA Future Business Summit, Stuttgart

## Emmanuel Muller

*Beyond smart specialisation: New insights for regional innovation policies*

- ▶ 16<sup>th</sup> Conference of the International Joseph A. Schumpeter Society (ISS), Montreal, Canada

*Creativity management: causation, effectuation and will*

- ▶ 8<sup>th</sup> International Conference on Innovation and Knowledge Management in Asia Pacific, Kobe, Japan

## Lisa Nabitz

*How can energy audits and energy management be promoted amongst SMEs? A review of policy instruments in the EU-28 and beyond*

- ▶ eceee Industrial Summer Study, Berlin

## Peter Neuhäusler

*Verknüpfung von ORBIS mit Innovations-Indikatoren – Ein Erfahrungsbericht des Fraunhofer ISI*

- ▶ BvD Academic Day 2016, Frankfurt

## Jutta Niederste-Hollenberg

*MinderER – Minderung des Eintrags von Röntgenkontrastmitteln in die Umwelt*

- ▶ Grundwasserbeirat des Landes Baden-Wuerttemberg, Baden-Baden

## Anja Peters

*Auf dem Weg zu einer Nachhaltigen Mobilität – Visionen, Einflussfaktoren, Instrumente*

- ▶ 9. sun21-Energiegespräche im Wenkenhof – Nachhaltige Mobilität für die grenzüberschreitende Region Basel, Riehen, Switzerland

*Interest and expectations of car-sharing-users regarding integrated multi-modal mobility concepts*

- ▶ 12<sup>th</sup> Cosmopolitanities Network Conference: Sharing Mobilities – New Perspectives for Societies on the Move?, Bad Boll

## Patrick Plötz

*Factors and policies explaining market success of electric vehicles*

- ▶ World of Energy Solutions, Stuttgart

## Patrick Plötz

*Hybrid-Oberleitungs-Lkw: Potenziale und Handlungsoptionen*

- ▶ Sektorübergreifende Transformation unseres Energiesystems – Intelligente Kopplung der Bereiche Strom, Wärme und Mobilität, Energieagentur.NRW, Düsseldorf

## Martin Pudlik

*RE Market Integration*

- ▶ International Conference on Power and Energy Systems, Paris, France

## Martin Pudlik

*ASEAN energy perspectives*

- ▶ Advanced materials and technologies for renewable energies, Lille, France

*Impact of RE policy on energy security in the German heating sector*

- ▶ International Association on Energy Economics, Bergen, Norway

## Mario Ragwitz

*Langfristszenarien für die Transformation des Energiesystems in Deutschland*

- ▶ Plenum der Plattform Strommarkt des BMWi, Berlin

*Renewable energy policy – What comes after feed-in tariffs?*

- ▶ Vienna Forum on European Energy Law, Vienna, Austria

*Flexibilisierung – Das Energiesystem der Zukunft*

- ▶ Fraunhofer-Morgen-Radar, Deutscher Bundestag, Berlin

## Thomas Reiß

*Patientenperspektive im Innovationsprozess*

- ▶ SALUT! DaSein gestalten – Der Gesundheitskongress, Saarbrücken

*EU world positioning in societal challenges and KETs in 2020*

- ▶ RISE HLEG: RISE groups findings in the context of EU R&I Policy and Funding Programmes, Brussels, Belgium

*Digital in die Zukunft – Chancen und Risiken von Industrie 4.0*

- ▶ Fokus Zukunft. Unser Leben 2050, Karlsruhe

## Karoline Rogge

*From policy to policy mixes in eco-innovation surveys: the case of renewable energy innovation in Germany*

- ▶ New Developments in Eco-Innovation Research, ZEW, Mannheim

## Clemens Rohde

*Energy Efficiency – Benefits beyond savings*

- ▶ Delegationsreise der Exportinitiative Energieeffizienz, Detroit, USA

*Energy saving options for industrial furnaces – the example of the glass industry*

- ▶ eceee Industrial Summer Study, Berlin

*3,500 ISO 50001 certificates in Germany – How is it possible?*

- ▶ ISO 50001 – Creating business and policy values with Energy Management Systems, Stockholm, Sweden

## Joachim Schleich

*Heterogeneity in household preferences – implications for energy efficiency modeling and policy*

- ▶ Florence School of Regulation, Climate Annual Conference: Economic assessment of European climate policies, Florence, Italy

*Profiting from emissions trading? Analysing firm revenues from strategic trading behaviour in the carbon market*

- ▶ International Symposium Lessons from the evaluation of existing Emission Trading Schemes in China, Korea and the European Union for future design, Beijing, China

*Effects of policies on patenting in wind power technologies*

- ▶ 39<sup>th</sup> Annual IAEE International Conference, Bergen, Norway

## Barbara Schlomann

*Energy efficiency policies in the German energy transition*

- ▶ 2016 ACEEE Summer Study on Energy Efficiency in Buildings, Pacific Grove, USA

*Evaluation of energy efficiency measures in the Odyssee/Mure project: from databases to policy evaluations*

- ▶ Eionet workshop: Evaluation and reporting of climate mitigation policies and measures, EEA, Copenhagen, Denmark

## Uta Schneider

*What if the car was electric? An analysis of mobility related "Leitbilder" in families with children*

- ▶ 4<sup>th</sup> European Conference on Behaviour and Energy Efficiency (Behave 2016), Coimbra, Portugal

*The social acceptance of Hydrogen Fuel Cell applications in Europe: Results from a seven country study*

- ▶ SENIX Conference, Stockholm, Sweden

*Warum reden alle über Rohstoffe und was ist dabei so spannend?*

- ▶ Strategische Rohstoffe: Aktuelle Informationen und Vorschläge für die Präsentation im Unterricht, Karlsruhe

## Torben Schubert

*The effects of knowledge diversity in top and functional management teams on innovation*

- ▶ DRUID, Copenhagen, Denmark

*Concentration on the few? R&D and Innovation in German Firms between 2001 and 2013*

- ▶ EU-Spri, Lund, Sweden

## Luisa Sievers

*Do renewable energies reduce regional disparities in Germany?*

- ▶ International Association for Energy Economics International Conference 2016, Bergen, Norway

*Impact of renewable energy expansion in Germany on regional distribution of value added*

- ▶ European Regional Science Association Congress 2016, Vienna, Austria

## Thomas Stahlecker

*Studie Industrie 4.0 für Thüringen: Empirische Befunde*

- ▶ Weimarer Wirtschaftsforum, Weimar

*Firmenübergreifende Kooperationen und Netzwerke – ein Innovationsmotor für KMU?*

- ▶ Sitzung des Ausschusses für Dienstleistungswirtschaft der IHK Hamburg, Hamburg

*Knowledge generation, industry-science linkages, innovation financing and innovation support institutions – Main findings, conclusions and recommendations*

- ▶ International Workshop: Innovation for Sustainable Development – Review of Belarus – Peer Review and Discussing the preliminary findings, Minsk, Belarus

## Luis Tercero Espinoza

*Criticality of raw materials as a function of time, markets and policy*

- ▶ Ecomondo Beacon Event Circular and Critical Raw Materials, Rimini, Italy

*Warum reden alle über Rohstoffe und was ist dabei so spannend?*

- ▶ Strategische Rohstoffe: Aktuelle Informationen und Vorschläge für die Präsentation im Unterricht, Karlsruhe



# PRESENTATIONS | PROJECTS

*Examination of international trade flows of copper*

► Joint Statistical Committee / Environmental and Economic Committee / Industry Advisory Panel Meeting, International Copper Study Group, Lisbon, Portugal

**Axel Thielmann**

*Trends, markets and business scenarios of battery-based energy storage for electric vehicles and stationary applications*  
► Advanced Automotive Battery Conference (AABC) Europe, Mainz

*Potenziale für Innovation und Kostensenkung in der Elektromobilität: Folgerungen aus dem Batterie-Roadmapping*  
► Fach- und Ideenkonferenz der Bundesregierung 2016; Das Elektroauto – Extravaganz für wenige oder automobiler Normalität der Zukunft, Berlin

*Speicher-Roadmap 2030: Entwicklungsperspektiven für die stationäre Energiespeicherung*

► Photovoltaic Association (PVA) Speichertagung, Vienna, Austria

**Jakob Wachsmuth**

*How energy efficiency cuts costs for a 2-degree future*  
► After COP21: Potentials and policies for energy efficient decarbonisation, Brussels, Belgium

**Rainer Walz**

*Innovationen – Komplexität beherrschen, Zukunft gestalten.*  
► Innovationen – mit Mut in eine nachhaltige Zukunft, 25 Jahre DBU, Berlin

*Towards empirical modelling of innovation system dynamics: an integrated TIS-MLP approach.*

► New Developments in Eco-Innovation Research, ZEW, Mannheim

*Innovations for reaching the green SDG – will they come from the North or South?*

► Annual Globelics Conference, Bandung, Indonesia

**Marion A. Weissenberger-Eibl**

*Innovationsindikator 2015 – Ergebnisse und Fokusthema 2016: Digitalisierung*

► BDI – Ausschuss für Forschungs-, Innovations- und Technologiepolitik, Berlin  
*Innovation und Vielfalt*  
► NOW-Netzwerk, Heidelberg

**Julius Wesche**

*Policy change driven by niche advocacy coalitions – The German residential heat case*  
► 7<sup>th</sup> International Sustainable Transitions Conference, Wuppertal

**Martin Wietschel**

*Elektrifizierungsstrategien im Lkw-Bereich*

► Kolloquium Das neue Auto – elektrisch, automatisiert, vernetzt. Technische Akademie Esslingen, Esslingen

*Stand des Markthochlaufes der Elektromobilität*

► Kongress Forum Elektromobilität, Berlin

*Elektrifizierung auf Europas Straßen – Status Quo und Perspektive*

► Innovation mit Tradition – Metzler meets Fraunhofer, Frankfurt

**Jenny Winkler**

*Technische Besonderheiten von Kapazitätsmärkten*

► Dornburger Energiegespräche, Jena

*Fördersysteme für erneuerbare Energien im Stromsektor*

► Schiedsverfahren und Erneuerbare Energien, Munich

*Impact of Renewables on Electricity Markets – Do Support Schemes Matter?*

► 33<sup>eme</sup> séance du séminaire de recherche en économie de l'énergie de Paris-Sciences-Lettres, Paris, France

**Andrea Zenker**

*Beyond smart specialisation: New insights for regional innovation policies*

► 16<sup>th</sup> Conference of the International Joseph A. Schumpeter Society (ISS), Montreal, Canada

## PROJECTS

### ENERGY POLICY AND ENERGY MARKETS

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RE-frame: Untersuchung der Zusammenhänge zwischen den bestehenden politischen Rahmenbedingungen und dem zukünftigen Ausbau erneuerbarer Energien sowie deren Kapitalkosten im länderübergreifenden Kontext der Energiewende in den EU-Mitgliedsstaaten  
**Inga Boie**

• DIA-CORE: Policy Dialogue on the assessment and CONvergence of RES policy in EU Member States  
**Inga Boie**

• CSP\_Exec\_Agency: The Middle East and North Africa Concentrated Solar Power Knowledge and Innovation Program  
**Inga Boie**

• BRISKEE: Behavioural Response to Investment Risks in Energy Efficiency  
**Sibylle Braungardt**

• CHEETAH: Changing Energy Efficiency Technology Adoption in Households  
**Sibylle Braungardt**

• Klimaschutzszenario 2050  
**Sibylle Braungardt**

• ImpRES: Analyse zu übergreifenden einzel- und gesamtwirtschaftlichen Nutzen- und Verteilungswirkungen des Ausbaus EE unter Berücksichtigung der Wechselwirkungen zwischen den Bereichen Strom, Wärme und Verkehr  
**Barbara Breitschopf**

• EnPriC: Analysis of energy prices and costs in the EU, its Member States and major trading partners  
**Barbara Breitschopf**

• Energiewende: Makroökonomische Wirkungen und Verteilungsfragen der Energiewende  
**Barbara Breitschopf**

• EnerNor: Electricity Costs of the Aluminium Industry in Norway – in comparison to industries in selected countries  
**Barbara Breitschopf**

• RES-Observer: Technical Assistance in Monitoring and Analysis of Renewable Energy Data for the Period 2016–2020  
**Barbara Breitschopf**

• ETS-Modelle: Modellierung des Emissionshandels im Kontext europäischer energie- und klimapolitischer Maßnahmen: Markt und Machbarkeitsstudie für ETS-spezifische Modelle  
**Vicki Duscha**

• ETS-VKK: Modellierung des Emissionshandels im Kontext europäischer energie- und klimapolitischer Maßnahmen: Entwicklung von ETS-spezifischen Vermeidungskostenkurven  
**Vicki Duscha**

• Low-Carbon Europe: Entwicklung ambitionierter Klimaschutzszenarien unter Berücksichtigung von Energieversorgungssicherheit, Nachhaltigkeit und Wettbewerbsfähigkeit  
**Vicki Duscha**

• MinderungPost2020: Minderungsverpflichtungen und faire Lastenteilung in einem neuen umfassenden Klimaschutzabkommen ab 2020  
**Vicki Duscha**

• 2<sup>e</sup>Europa: Unterstützung der Entwicklung ambitionierter Klimaschutzszenarien in Europa  
**Vicki Duscha**

• Ambition2020: Instrumente zur Erhöhung weltweiter Klimaschutzanstrengungen vor 2020 – ökonomische und politische Implikationen in ausgewählten Industrie- und Schwellenländern  
**Vicki Duscha**

• ETS 7: Evaluierung und Weiterentwicklung des EU-Emissionshandels aus ökonomischer Perspektive für die Zeit nach 2020 (EU-ETS-7)  
**Vicki Duscha**

• ODYSSEE-MURE: a decision support tool for energy efficiency policy evaluation  
**Wolfgang Eichhammer**

• Assessment ETS Benchmarks: Assessment of the first years of the functioning of the new allocation system based on benchmarks  
**Wolfgang Eichhammer**

• ETSKorea: Implementation of an Emission Trading System (ETS) in the Republic of Korea  
**Wolfgang Eichhammer**

• EED Implementation Luxembourg: Unterstützung bei der Umsetzung der Energieeffizienz-Richtlinie der EU (EED) in Luxemburg und Erstellung des nächsten Nationalen Energieeffizienzplans für Luxemburg  
**Wolfgang Eichhammer**

• TransNIK: Transitionsgestaltung für nachhaltige Innovationen – Initiativen in den kommunal geprägten Handlungsfeldern Energie, Wasser, Bauen & Wohnen  
**Nele Friedrichsen**

• BMUB\_Klimaschutzfragen: Wissenschaftliche Analysen zu aktuellen klimapolitischen Fragen  
**Nele Friedrichsen**

• ETS 6: Untersuchung der klimapolitischen Wirksamkeit des Emissionshandels – Erweiterte Analysen  
**Nele Friedrichsen**

• EU Governance: Wissenschaftliche Unterstützung zu Fragen der Entwicklung eines Governance-Systems für den 2030 Klima- und Energie-rahmen  
**Anne Held**

• Towards2030-dialogue: Dialogue on a RES policy framework for 2030  
**Anne Held**

• Pre2020-Initiativen: Bewertung des THG-Minderungsbeitrags von globalen, regionalen und nationalen Initiativen außerhalb von UNFCCC bis 2020  
**Jan Kersting**

• Leitstudie: Langfristszenarien und Strategien für den Ausbau der Erneuerbaren Energien in Deutschland unter besonderer Berücksichtigung der nachhaltigen Entwicklung sowie regionaler Aspekte  
**Benjamin Pfluger**

• BMWi Klimaschutz: Auswirkungen der Klimaziele und diesbezüglicher Maßnahmen auf den Energiesektor und den Ausbau der erneuerbaren Energien  
**Benjamin Pfluger**

• Leitstudie Strommarkt: Erneuerbare Energien als Leitlinie für das Marktdesgin der Zukunft – Untersuchung zu Leistungsfähigkeit und Weiterentwicklungsoptionen der Strommärkte für die effektive und effiziente Integration erneuerbarer Energien  
**Martin Pudlik**

• Dezentrale PV: Potenziale und Anwendungsoptionen von dezentralen Photovoltaik-Anwendungen in Schwellen und Entwicklungsländern  
**Martin Pudlik**

• ZAYED\_GOBITEC: Chancen und Risiken von Gobitec und dem asiatischen Supergrid – Stakeholder-, Verbrauchs- und Kostenanalyse im asiatischen Raum  
**Martin Pudlik**

• R&D Südkorea: Energy Research Network Südkorea  
**Martin Pudlik**

• GIZ EE Mexico: Nachhaltige Energien Mexico  
**Martin Pudlik**

• GIZ AEO5: Support to the Development of the 5<sup>th</sup> ASEAN Energy Outlook (AEO5)  
**Martin Pudlik**

• LUX-RES II: Wissenschaftliche Beratung zu Fragen der Energiestrategie Luxemburgs mit besonderem Fokus auf Erneuerbare Energien  
**Mario Ragwitz**

• DFID – RES: Applied Research on Energy and Economic Growth  
**Mario Ragwitz**

• NL Review 2016: 2016 review of Dutch renewable energy tariffs  
**Mario Ragwitz**

• PATHWAYS: Exploring transition pathways to sustainable, low carbon societies  
**Karoline Rogge**

• EU-China ETS: EU-China ETS Joint research activity  
**Karoline Rogge**

• Aktionsplan Energieeffizienz: Entwicklung eines Konzepts für das Erreichen der nationalen Energieeinsparziele bis 2020 und bis 2050 auch unter Berücksichtigung relevanter EU-Vorgaben im Kontext einer ganzheitlichen Klima- und Energiepolitik  
**Barbara Schlomann**

• BMWi Energieeffizienzfonds: Evaluierung und Weiterentwicklung des Energieeffizienzfonds  
**Barbara Schlomann**

• Grundsatzstudie Energieeffizienz: Grundsatzfragen der Energieeffizienz und wissenschaftliche Begleitung der Umsetzung des Nationalen Aktionsplans Energieeffizienz unter besonderer Berücksichtigung von Stromverbrauchsentwicklung und -maßnahmen  
**Barbara Schlomann**

• EU-Parliament\_Energy-poverty: Energy efficiency for low-income households  
**Barbara Schlomann**

• BMWi – NAPE 2.0: Grünbuch / NAPE 2.0  
**Barbara Schlomann**

• Klimaschutzplan 2050: Wissenschaftliche Unterstützung, Erstellung und Begleitung Klimaschutzplan 2050  
**Barbara Schlomann**

• Politikszenerarien VIII: Verbesserung der methodischen Grundlagen und Erstellung eines Treibhausgasemissionsszenarios als Grundlage für den Projektionsbericht 2017 im Rahmen des EU Treibhausgasmonitorings  
**Barbara Schlomann**

• Leitstudie Strommarkt 2: Leitstudie Strom – Analysen für eine sichere, kosteneffiziente und umweltverträgliche Stromversorgung  
**Frank Sensfuß**

• SET-Nav: Navigating the Roadmap for Clean, Secure and Efficient Energy Innovation  
**Frank Sensfuß**

• EUPEF: Review of the default primary energy factor (PEF) reflecting the estimated average EU generation efficiency referred to in Annex IV of Directive 2012/27/EU and possible extension of the approach to other energy carriers  
**Frank Sensfuß**

• ESPON: Territories and low-carbon economy  
**Jan Steinbach**

• EEWärmeG Erfahrungsbericht: Wissenschaftliche Analyse des Wärme- und Kältemarkts und Vorbereitung des Erfahrungsberichts zum EEWärmeG  
**Jan Steinbach**

• Grünbuch AT: Erstellung eines Grünbuchs für eine Energie- und Klimastrategie als Grundlage für einen Konsultationsprozess  
**Jan Steinbach**





# PROJECTS

- AURES: Auctions for Renewable Energy Support: Effective use and efficient implementation options  
**Simone Steinhilber**

- Support for Consultation on RED II  
**Simone Steinhilber**

- International Auctions for Renewables  
**Simone Steinhilber**

- Gas-Roadmap: Roadmap Gas für die Energiewende – Nachhaltiger Klimabeitrag des Gassektors  
**Jakob Wachsmuth**

- Zielarchitektur Energiewende: Wirkung der Maßnahmen der Bundesregierung innerhalb der Zielarchitektur zum Umbau der Energieversorgung  
**Jakob Wachsmuth**

- DecarbEE: The contribution of energy efficiency to reducing the cost of decarbonization  
**Jakob Wachsmuth**

- Zukunftswerkstatt Erneuerbare Energien  
**Jenny Winkler**

- PV EU-Parlament: Solar energy policy in the EU and the Member States, from the perspective of the petitions received  
**Jenny Winkler**

- EE-Ausschreibungsdesign: Unterstützungsleistungen bei der Ausgestaltung eines Ausschreibungssystems für erneuerbare Energien  
**Jenny Winkler**

- EEG-Öffnung: Unterstützungsleistungen bei der Ausgestaltung zur Öffnung von Fördersystemen für Strom aus Erneuerbaren Energien, für im Ausland erzeugten Strom  
**Jenny Winkler**

- Ausschreibung KWK: Unterstützungsleistung bei der Ausgestaltung von Ausschreibungen für KWK  
**Jenny Winkler**

- MVV PV+ Speicher: Marktdiffusion von PV-Anlagen mit Batteriespeichern  
**Katharina Wohlfarth**

## ENERGY TECHNOLOGY AND ENERGY SYSTEMS

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- UBA Exergie: Exergie und Wirtschaft  
**Ali Aydemir**

- LEEN 100: Lernende Energieeffizienz-Netzwerke – An-schub auf dem Weg zu 100 und mehr Netzwerken  
**Harald Bradke**

- Vernetzte Mobilität: Begleitforschung Vernetzte Mobilität der Modellregionen Elektromobilität des BMVI  
**Elisabeth Dütschke**

- DiffusionEE: Modellierung individueller Entscheidungsprozesse und des Einflusses von Intermediären bei der Diffusion von Energieeffizienzmaßnahmen und Erneuerbaren Energien im Gebäudebereich  
**Elisabeth Dütschke**

- WISE Power: Fostering social acceptance of wind power  
**Elisabeth Dütschke**

- HYACINTH: Hydrogen ACceptance IN the Transition pHase  
**Elisabeth Dütschke**

- Digi-Label: Delivering digital Energy Labelling solutions to enable consumer action on purchasing energy efficient appliances?  
**Elisabeth Dütschke**

- Regionale Stromverbräuche NEP: Netzentwicklungsplan Strom  
**Rainer Elsland**

- Versorgungssicherheitsbericht: Definition und Monitoring der Versorgungssicherheit an den europäischen Strommärkten von 2017 bis 2019  
**Rainer Elsland**

- UBA Sektorkopplung Recht: Integration erneuerbarer Energien durch Sektorkopplung  
**Anke Eßer**

- BMWi-Interkonnektoren: Ziele, Anreize und Hemmnisse für den grenzüberschreitenden Ausbau der Stromnetze  
**Anke Eßer**

- Energiesystemanalyse: Dekarbonisierung des Energiesystems durch verstärkten Einsatz erneuerbaren Stroms im Wärme-, Verkehrs- und Industriesektor bei gleichzeitigen Stilllegungen von Kraftwerken – Auswirkungen auf die Versorgungssicherheit in Süddeutschland (DESK)  
**Anke Eßer**

- FORECAST Brazil: Long-term electricity demand (hourly and annual) forecast in Brazil until 2050  
**Tobias Fleiter**

- FORECAST 2015: FORECAST scenario analysis 2015  
**Tobias Fleiter**

- E.ON Kurzfristmodellierung: FORECAST model extension: short-term simulation  
**Tobias Fleiter**

- Engie-EnEff French Industry: Bottom-up estimation of quantitative energy efficiency trends by industrial sub-sector until 2035  
**Tobias Fleiter**

- BW Klimaschutz: Energie- und Klimaschutzziele 2030  
**Tobias Fleiter**

- progRESsHEAT: Supporting the progress of renewable energies for heating and cooling in the EU on a local level  
**Tobias Fleiter**

- Mapping EU heat supply: Mapping and analyses of the current and future (2020–2030) heating/cooling fuel deployment (fossil/ renewables)  
**Tobias Fleiter**

- Heat Roadmap Europe (HRE): Building the knowledge, skills, and capacity required to enable new policies and encourage new investments in the heating and cooling sector  
**Tobias Fleiter**

- HotMaps: Heating and Cooling – Open Source Tool for Mapping and Planning of Energy Systems  
**Tobias Fleiter**

- FIS: Inhaltliche Pflege und Bearbeitung von Themengebieten des Forschungs-Informations-Systems (FIS) des BMVI Los 4  
**Simon Funke**

- MKS H2-LKW: Brennstoffzellen-LKW – kritische Entwicklungshemmnisse, Forschungsbedarf und Marktpotenzial  
**Till Gnann**

- SYSTLOES: Business Development  
**Tim Hettesheimer**

- EnArgus II: EnArgus2.0 – Zentrales Informationssystem Energieforschungsförderung – Teil: Gebäude, Städte, Biogas  
**Simon Hirzel**

- Amprion Zukunft Last: Struktur der elektrischen Last und Potenziale zur Laststeuerung  
**Marian Klobasa**

- BMWi – Netzentgelte: Optionen zur Weiterentwicklung der Netzentgeltsystematik für eine sichere, umweltgerechte und kosteneffiziente Energiewende  
**Marian Klobasa**

- DENA-LastFlex: Erstellung einer Studie zu den Möglichkeiten für grenzüberschreitenden Handel mit lastseitigen Flexibilität in Deutschland, Frankreich, Schweiz und Österreich im Rahmen des Pilotprojekts Demand Side Management Baden-Württemberg  
**Marian Klobasa**

- KomMA-P: Komplementäre Nutzung verschiedener Energieversorgungs-konzepte als Motor gesellschaftlicher Akzeptanz und individueller Partizipation zur Transformation eines robusten Energiesystems  
**Marian Klobasa**

- Flex MVV: Gekoppelte Optimierung von Flexibilität in Energieerzeugung sowie Verbrauch unter Berücksichtigung der Auskopplung in andere Märkte (Wärme)  
**Marian Klobasa**

- EnSYS-FlexA: Flexible Nachfrage als wichtiger Beitrag zur Energiewende und Baustein in der Energiesystemanalyse – EnSYS-FlexA  
**Marian Klobasa**

- DV+EEG-Erfahrungsbericht: Vorbereitung und Begleitung bei der Erstellung eines Erfahrungsberichtes gemäß §97 Erneuerbare-Energien-Gesetz (EEG 2014)  
**Marian Klobasa**

- Gutachten zuschaltbare Lasten für das Ministerium für Energiewende, Umwelt, Landwirtschaft und ländliche Räume des Landes Schleswig-Holstein  
**Marian Klobasa**

- KWK Luxemburg: Bewertung des Potenzials für den Einsatz der hocheffizienten KWK und der effizienten Fernwärme- und Fernkälteversorgung – Comprehensive Assessment  
**Marian Klobasa**

- EnergiestiftungBW Lastverschiebepotenzial: Bewertung des Lastverschiebepotenzials von Elektrofahrzeugen in Deutschland unter Berücksichtigung differenzierter Haltegruppen und Ladeinfrastrukturen im Vergleich zu anderen flexiblen Verbrauchern  
**Julia Michaelis**

- AVerS: Analyse der Versorgungssicherheit in Süddeutschland unter Berücksichtigung der europaweiten Kopplung der Strommärkte  
**Julia Michaelis**

- REFLEX: Analysis of the European energy system under the aspects of flexibility and technological progress  
**Julia Michaelis**

- emobilBW-Gutachten-LIS: Öffentliche Ladeinfrastruktur in Baden-Württemberg  
**Patrick Plötz**

- Schnellladeinfrastruktur: Standortkonzepte für Schnellladeinfrastruktur in der Region Stuttgart  
**Patrick Plötz**

- Get-e-Ready: Betreibermodell Elektroflotten in Stuttgart  
**Patrick Plötz**

- MKS HO-BUS: Machbarkeit von HO-Busverkehr in Deutschland – am Beispiel Marburg und Trier  
**Patrick Plötz**

- EE Facility: Energy Efficient Products Facility  
**Clemens Rohde**

- DG Ener – EnEff Invest: Delivering informed investment decisions for energy efficiency investments through accessible data, standardized procedures and benchmarking of performance also supporting the Smart Finance for Smart Buildings Initiative  
**Clemens Rohde**

- DG ENTER-EcodesignPointSystem: Technical assistance study for the assessment of the feasibility of using points system methods in the implementation of Ecodesign Directive  
**Clemens Rohde**

- PolicyPaper eceee: Policy Paper on the implementation of Art. 8 in the EU member states and potential improvements  
**Clemens Rohde**

- BMWi Industrieinnovation: Studie zu marktverfügbaren Innovationen der Industrie  
**Clemens Rohde**

- HA-Klimaschutzplan Hessen: Dienstleistungen zur Erarbeitung des integrierten Klimaschutzplans Hessen 2025 mit einem sich anschließenden Monitoring sowie zur Kommunikation und Beteiligung der Öffentlichkeit am integrierten Klimaschutzplan Hessen 2025  
**Clemens Rohde**

- BMUB-Aktionsprogramm-Klimaschutz: Umsetzung Aktionsprogramm Klimaschutz 2020 – Begleitung der Umsetzung der Maßnahmen des Aktionsprogramms  
**Clemens Rohde**

- Anwendungsbilanzen 2014–2017: Erstellen von Anwendungsbilanzen auf der Grundlage der deutschen Energiebilanzen für die Jahre 2014 bis 2017  
**Clemens Rohde**

- UBA Energiemanagementsysteme: Branchen- und unternehmensgrößenbezogene Ermittlung von Klimaschutzpotenzialen (Schwerpunkt KMU) durch verstärkte Umsetzung von Energiemanagement-Maßnahmen in der Wirtschaft  
**Clemens Rohde**

- Wasserstofftankstellen: Begleitforschung 50-Tankstellen – Programm im Rahmen des Nationalen Innovationsprogramms Wasserstoff- und Brennstoffzellentechnologie  
**Martin Wietschel**

- Flexibilitätsbewertung: Monetäre Bewertung von Flexibilitätsoptionen unter Berücksichtigung von Verteilnetz- und Strommarktsimulation  
**Martin Wietschel**

- Almost all electric world: Identifikation und Bewertung komplexer Energieträger  
**Martin Wietschel**

- Profilregion Mobilität: Profilregion Mobilitätssysteme Karlsruhe – effizient – intelligent – integriert  
**Martin Wietschel**

- Helmholtz Energieszenarien  
**Martin Wietschel**

- Power to Gas: PtG-Konzepte mit hoher gesellschaftlicher Akzeptanz für eine effiziente und flexible Speicher- und Energieinfrastruktur zur Integration erneuerbarer Energien in Baden-Württemberg  
**Martin Wietschel**

- GIZ-Flex: CSP update & flexibility options for cost efficient RE based system – Lot 2  
**Martin Wietschel**

- ENavi – Kopernikus: Kopernikus-Projekte für die Energiewende – Themenfeld 4: Systemintegration und Vernetzung der Energieversorgung  
**Martin Wietschel**

- TF Energiewende: Technologien für die Energiewende: Status und Marktpotenziale – eine multikriterielle vergleichende Technologieanalyse und -bewertung  
**Martin Wietschel**

- UBA Sektorkopplung: Integration erneuerbarer Energien durch Sektorkopplung, Teilvorhaben 2: Analyse zu technischen Sektorkopplungsoptionen  
**Martin Wietschel**

- MKS HO-LKW: Teilstudie Machbarkeitsstudie zur Ermittlung der Potenziale des Hybrid-Oberleitungs-LKW  
**Martin Wietschel**





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BOHEMIA: Foresight in Support of the Preparation of the European Union's Future Policy in Research and Innovation  
**Kerstin Cuhls**

• SCHRUMPF: Maßnahmen gegen die Folgen des demografischen Wandels – schrumpfende Gesellschaften im Vergleich  
**Kerstin Cuhls**

• Infrastrukturszenarien: Durchführung eines Workshops zur Entwicklung von Szenarien der Infrastruktur in 2016, 2020, 2030  
**Ewa Dönitz**

• Assurance 2020/2025: Assurance 2020/2025 based on New Technology and Trends  
**Ewa Dönitz**

• COWERK: Stakeholder-Dialoge zu Commons-based Peer Production in offenen Werkstätten  
**Lorenz Erdmann**

• EU-ARES-ForeValue: Foresight on the Impact of Changing Value Systems on European Research and Innovation Policies: Signals, Drivers, and Responses  
**Lorenz Erdmann**

• INNOLAB: LivingLabs in Green Economy – realweltliche Innovationsräume für Nutzerintegration und Nachhaltigkeit, Teilprojekttitel: Living Labs: Zukunftspfade und inHaus.  
**Lorenz Erdmann**

• MICA: Mineral Intelligence Capacity Analysis  
**Lorenz Erdmann**

• Begleitung Hightech-Forum: Wissenschaftliche Begleitung Foresight des Hightech-Forums  
**Simone Kimpeler**

• Foresight Filmfestival: Konzeption und Durchführung eines jährlichen Foresight Filmfestivals  
**Simone Kimpeler**

• Strategische Dialoge Zukunft der Arbeit: Foresight und Strategische Dialoge zur Zukunft der Arbeit  
**Simone Kimpeler**

• KKW Monitoring: Stand und Perspektiven der Kultur- und Kreativwirtschaft in Deutschland: Monitoring zu ausgewählten wirtschaftlichen Eckdaten  
**Simone Kimpeler**

• ISTIQ Roadmap: Development on Technology Foresight Research System  
**Björn Moller**

• i<sup>3</sup>-Food: Process integration for rapid implementation of sustainable innovative food processing  
**Björn Moller**

• FhG Leitbild  
**Elna Schirrmeister**

• Fut-Business: Future Business – VDMA-Zukunftsbilder des Maschinenbaus  
**Elna Schirrmeister**

• Innovationsakademie Biotechnologie 2015  
**Elna Schirrmeister**

• Global Future Survey: internationale Befragung zu Zukunftserwartungen bezogen auf regionale gesellschaftliche Veränderungen  
**Elna Schirrmeister**

• VDMA Stahl: Konzeption, inhaltliche Vorbereitung und Durchführung von zwei Workshops zur Erweiterung des Beobachtungsbereichs der Mitgliedsunternehmen durch Erarbeitung von Veränderungsimpulsen  
**Elna Schirrmeister**

• JERRI: Joining Efforts for Responsible Research and Innovation  
**Benjamin Teufel**

• Zukunft TPK: Trends und Anforderungen im Rahmen des Projekts Reload Technologiepark  
**Benjamin Teufel**

• CIMULACT: Citizen and Multiactor Stakeholder Processes  
**Philine Warnke**

• FuFoCo: Szenarioentwürfe zur Zukunft neuer Modelle der Nahrungsmittelproduktion  
**Philine Warnke**

• INCOBRA: Increasing International Science, Technology and Innovation Cooperation between Brazil and the EU  
**Philine Warnke**

• OBSERVE: Observing Emergence  
**Philine Warnke**

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Entwicklung Güterverkehr: Anforderungen und Rahmenbedingungen für eine zukunftsorientierte Entwicklung des Güterverkehrs – eine systematische Analyse auf Grundlage eines Ländervergleichs  
**Claus Doll**

• TRIP-Portal: Continuation of the Transport Research and Innovation Portal  
**Claus Doll**

• UBA-Methodenkonvention 3.0: Weiterentwicklung und Erweiterung der Methodenkonvention zur Schätzung von Umweltkosten  
**Claus Doll**

• LowCarb RFC: Klimafreundlicher Güterverkehr in Europa  
**Claus Doll**

• RohPolRes: Entwicklung von Politikempfehlungen für die Weiterentwicklung und Ausgestaltung von strategischen Ansätzen einer nachhaltigen und effizienten Rohstoffgewinnung und -nutzung  
**Carsten Gandenberger**

• Umweltinnovationen: Umweltinnovationen und ihre Diffusion als Treiber der Green Economy  
**Carsten Gandenberger**

• SoNa-WSK: Transition in globalen Wertschöpfungsketten – Förderung der sozialen Nachhaltigkeit  
**Carsten Gandenberger**

• ECI-DKI-Blei\_Brass\_EU: Dynamic Material Flow Model of Lead Containing Copper Alloys in Europe (EU28)  
**Simon Glöser-Chahoud**

• Digitalisierung und Umwelt  
**Matthias Gotsch**

• TWIST++: Transitionswege WasserInfraStruktursysteme – Anpassung an neue Herausforderungen im städtischen und ländlichen Raum  
**Thomas Hillenbrand**

• UBA-Mikroschadstoffe: Wirksamkeit und Kosteneffizienz von produktbezogenen und nachgeschalteten Maßnahmen zur Verminde rung des Eintrages von Mikroschadstoffen in die Gewässer  
**Thomas Hillenbrand**

• ZukOWIS: Finanzierbare Zukunftsoptionen für die kommunale Wasserinfrastruktur in NRW  
**Thomas Hillenbrand**

• Mikroschadstoffstrategie: Organisation, Durchführung und Auswertung eines Stakeholderdialogs zur deutschen Mikroschadstoffstrategie  
**Thomas Hillenbrand**

• Clean Sky 1: Clean Sky Technology Evaluator, Work Package 2 – Models, Work Package 4 – Impact Assessment  
**Jonathan Köhler**

• BMVBS Beratung: Beratungs- und Unterstützungsleistungen für das BMVBS im Rahmen der Diskussion von Maßnahmen zur Verminderung von Treibhausgasemissionen in der Seeschifffahrt  
**Jonathan Köhler**

• Clean Sky 2: Clean Sky 2 Eco-Design Scenarios 2020+, CS2-ED-WP5.2\_Big impact technology Pathways  
**Jonathan Köhler**

• WINDASSIST: Study on analysis of market potentials and market barriers for wind propulsion technologies for ships  
**Jonathan Köhler**

• DG Move TEN-T Core Network: Study on support measures for the implementation of the TEN-T core network related to sea ports, inland ports and inland waterway transport  
**Jonathan Köhler**

• ENVPOLMOD: Scoping Study on Modelling of EU Environment Policy  
**Jonathan Köhler**

• MKS\_LNG\_Schifffahrt: MKS Studie über die Marktreife von Erdgasmotoren in der Binnen- und Seeschifffahrt  
**Jonathan Köhler**

• Mapping EU heat supply: Mapping and analyses of the current and future (2020–2030) heating/cooling fuel deployment (fossil/renewables)  
**Michael Krail**

• TRIMODE: Services contract for the development of a Europe wide transport model, technology watch data and scenarios  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Erarbeitung der Mobilitäts- und Kraftstoffstrategie des BMVI  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Gesamtkoordination der Wissenschaftlichen Beratung des BMVI zur Mobilitäts- und Kraftstoffstrategie  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Maßnahmen zur Steigerung des Anteils des Schienenpersonenfernverkehrs in der Fläche  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Ausbau Elektrifizierung auf Hauptstrecken  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Umschlagstechnologien im kombinierten Verkehr: Mögliche Einsparpotenziale und Verlagerungseffekte  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – SPNV-Anschluss, Versorgung, Freizeitstrukturen, Land Use Planning  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Maßnahmen zur Steigerung des Anteils des grenzüberschreitenden Personen- und Güterverkehrs  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Ad-hoc Beratung im Rahmen der Weiterentwicklung der Mobilitäts- und Kraftstoffstrategie  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Entwicklung von Maßnahmenbündeln zur Förderung von CNG/LNG zur Unterstützung der CPT-Initiative  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Nachtragsangebot zu Mobilitäts- und Kraftstoffstrategie: Prognosenetz  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Studie zu Energie- und Treibhausgaswirkungen vom autonomen Fahren im Straßenverkehr  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Rahmenbedingungen und Kosten einer Komplettelktrifizierung des deutschen Schienennetzes  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Entwicklung eines attraktiven europäischen Nachtzugsystems und Potenziale für den Nachtzugverkehr von, nach und innerhalb Deutschlands  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – THG-Emissionsreduktionsziele für den globalen Luftverkehr im Kontext der deutschen und europäischen Luftverkehrsentwicklung unter besonderer Berücksichtigung alternativer Kraftstoffe und Antriebe  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Einsatz von erneuerbarem Kerosin am Flughafen in Leipzig/Halle  
**Michael Krail**

• Mobilitäts- und Kraftstoffstrategie – Demoprojekt mit DVGW: Wissenschaftliche Begleitung  
**Michael Krail**

• NaRoBaWü: Regionale Handlungsoptionen in globalen Wertschöpfungsketten – Steigerung der Transparenz im Rohstoffsektor  
**Sabine Langkau**

• BagassePlast: Plastification of bagasse by chemical modification and utilization of bagasse fractions in thermoplastic processing  
**Frank Marscheider-Weidemann**

• IKU: Innovationspreis für Klima und Umwelt für die Jahre 2015 bis 2017  
**Frank Marscheider-Weidemann**

• MachWasPlus: Begleitvorhaben zu Materialien für eine nachhaltige Wasserwirtschaft  
**Frank Marscheider-Weidemann**

• T&E\_HGV\_Toll-Systems: Tender for Economic Impact of Introducing Road Charging for Heavy Goods Vehicles  
**Lucia Mejia-Dorantes**

• InnoA2: Innovative Abwärmenutzung durch Wärmeverteilung über die Kanalisation  
**Eve Menger-Krug**

• INTEGRIS: Gebündelte Infrastrukturplanungen und -zulassungen und integrierter Umbau von regionalen Versorgungssystemen – Herausforderungen für Umwelt- und Nachhaltigkeitsprüfungen  
**Jutta Niederste-Hollenberg**

• z\*dez-Phase 3: Zentraler Betrieb dezentraler Anlagen – Umsetzung eines innovativen Organisationskonzepts zur Abwasserentsorgung mittels Kläranlagen in Baden-Württemberg, Anwendungsgebiet Landkreis Ravensburg  
**Jutta Niederste-Hollenberg**

• MindER Phase2+3: Pilotprojekt zur Minderung des Eintrags von Röntgenkontrastmitteln in die Umwelt  
**Jutta Niederste-Hollenberg**

• Bochum Ostpark: Entwicklung verschiedener Varianten eines Grauwasserkonzeptes zur Speisung der Quelle eines Wasserlaufes im Ostpark Bochum  
**Jutta Niederste-Hollenberg**

• r<sup>4</sup>-INTRA: r<sup>4</sup> – Wirtschaftsstrategische Rohstoffe, Verbundvorhaben: r<sup>4</sup> INTRA – r<sup>4</sup> Integrations- und Transferprojekt – Teilvorhaben 2: Operative Projektkoordination und Abschätzung der Ressourceneffizienzpotenziale  
**Katrin Ostertag**

• Green Finance-CC-Ü: Green Finance-Strategien und Instrumente zur Finanzierung des ökologischen Modernisierungsprozesses  
**Katrin Ostertag**

• Circular economy Lot 3: Competitiveness, eco-innovation and value chain sustainability  
**Katrin Ostertag**

• Wirtschaftsfaktor Umweltschutz: Erfassung der Umweltschutzbeschäftigung und Aktualisierung wichtiger Kenngrößen zur Wettbewerbsfähigkeit der Umweltschutzwirtschaft  
**Katrin Ostertag**





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- Altautoaufbereitungsstrategien: Entwicklung von Altautoaufbereitungsstrategien in globalen Märkten WP 10

**Katrin Ostertag**

- Die Effizienzlücke beim Autokauf **Anja Peters**

- DeteRes: Strukturelle und produktionstechnische Determinanten der Ressourceneffizienz: Untersuchung von Pfadabhängigkeiten, strukturellen Effekten und technischen Restriktionen auf die zukünftige Entwicklung der Rohstoffproduktivität

**Christian Sartorius**

- DAIAD RTD: DAIAD-Open Water Management – from droplets of participation to streams of knowledge **Christian Sartorius**

- r+TeTra: r+Impuls Technologietransferprojekt – Teilvorhaben 1: Projektleitung, Wirkungsanalyse und Öffentlichkeitsarbeit **Christian Sartorius**

- Beschäftigung EE Bayern: Beschäftigungseffekte der Energiewende in Bayern **Luisa Sievers**

- r<sup>3</sup> – InTra: Innovative Technologien für Ressourceneffizienz – Strategische Metalle und Mineralien **Luis Tercero**

- Cu-Modell VI: Development of a global copper flow model – phase 6 **Luis Tercero**

- ECI-Byproducts Overview: By-products in copper production **Luis Tercero**

- SCREEN: Solutions for CRITICAL Raw materials – a European Expert Network **Luis Tercero**

- EIT RawMaterials-EMFIS: European Materials Stock and Flow Intelligence Service **Luis Tercero**

- Cu-Modell VII: Development of a global copper flow model **Luis Tercero**

- Stoffströme, Märkte und Umwelt WP 11 **Luis Tercero**

- HAPPI 2: HAPPI – Kleinwasserkraftwerke: Bewertung des Klimaschutzpotenzials und Verbesserung durch Intelligente Technologien **Felix Tettenborn**

- ReAs: Reduzierung der Gewässerbelastungen mit Rückständen von Arzneistoffen in ausgewählten Pilotgebieten **Felix Tettenborn**

- m:ci Morgenstadt Phase II **Felix Tettenborn**

- WaKap: Modulares Konzept zur nachhaltigen Wasserentsalzung mittels Kapazitiver Entionisierung am Beispiel Vietnam **Felix Tettenborn**

- CIRC-02: Vorbereitung eines EU-FuE-Vorhabens zum Thema Evidence based knowledge, large scale demonstration and a new perspective for the next generation of water systems and services **Felix Tettenborn**

- LeNa: Leitfaden Nachhaltigkeitsmanagement **Rainer Walz**

- DFG-SINCERE: Sino-European Circular Economy and Resource Efficiency (SINCERE) – Societal Challenges – Green Economy and Population Change Call for European-Chinese joint research projects **Rainer Walz**

- Öko-Innovationsplan EcoAP: Erarbeitung der fachlichen Grundlagen für einen deutschen Öko-Innovationsplan als nationaler Beitrag zum Eco-Innovation Action Plan (EcoAP) der Europäischen Union **Rainer Walz**

- Competitiveness eco-innovation: MFWC with reopening of the competition in the field of sustainable industrial policy and construction **Rainer Walz**

- TITUS: Implikationen des wirtschaftlichen Aufstieges der Schwellenländer für die globalen Technologischen Innovationssysteme bei Umwelttechnologien **Rainer Walz**

- NaWiKo: Wissenschaftliche Koordination des Förderschwerpunktes Nachhaltiges Wirtschaften – Synthese und Transferökonomie **Rainer Walz**

## EMERGING TECHNOLOGIES

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EuDEco: Modelling the European Data Economy **Daniel Bachlechner**

- FET Traces: Tracing impacts of the FET programme **Bernd Beckert**

- EU-Software\_2: The economic and social impact of software and services on competitiveness and innovation **Bernd Beckert**

- Vodafone Stiftung 2016 – Der Weg in die Gigabitgesellschaft **Bernd Beckert**

- H2020 Interim Evaluation **Bernd Beckert**

- Länderanalyse Strategien für den Glasfaserausbau (Bertelsmann Stiftung) **Bernd Beckert**

- Wirtschaftsspionage und Konkurrenzausspähung in Deutschland und Europa **Esther Bollhöfer**

- SecurePLUGandWORK: intelligente Inbetriebnahme von verketteten Maschinen und Anlagen **Esther Bollhöfer**

- Rock-EU: Robotics Coordination Action for Europe **Annette Braun**

- TICKET4SME: Study on Access of SMEs to KETs technological infrastructure **Annette Braun**

- Wissenschaftliche Begleitforschung des nationalen Aktionsplans für Menschen mit seltenen Erkrankungen **Tanja Bratan**

- Soziale Inklusion durch technikgestützte Kommunikationsangebote im Stadt-Land-Vergleich **Tanja Bratan**

- Begleitforschung auf dem Gebiet Mobile Diagnostiksysteme **Tanja Bratan**

- STOA-AT: STOA Assistive Technologies **Tanja Bratan**

- ENISA Smart Hospitals **Michael Friedewald**

- Wissenstransfer 2.0: Quantified Self **Nils Heyen**

- Studie zur Evaluierung von Innovationen im Gesundheitswesen **Nils Heyen**

- TAB – Weiße BT: Innovationsreport Weiße Biotechnologie – Stand und Perspektiven der Industriellen Biotechnologie für nachhaltiges Wirtschaften **Bärbel Hüsing**

- Evaluation der Nationalen Forschungsstrategie BioÖkonomie 2030 **Bärbel Hüsing**

- Res-AGorA: Responsible Research and Innovation in a Distributed Anticipatory Governance Frame. A Constructive Socio-normative Approach **Ralf Lindner**

- TAB-RRi: Das Konzept Responsible Research and Innovation und dessen Relevanz für die deutsche Forschungs-, Technologie- und Innovationspolitik (TA-Vorstudie) **Ralf Lindner**

- MoRRI: Monitoring the evolution and benefits of Responsible Research and Innovation **Ralf Lindner**

- Vorlaufforschung: Neue Ansätze der Governance in Innovationssystemen **Ralf Lindner**

- JERRI: Joining Efforts for Responsible Research and Innovation **Ralf Lindner**

- Zehn Jahre Hightech-Strategie der Bundesregierung: Bilanz und Perspektive **Ralf Lindner**

- STOA E-Democracy II: Technology options and systems to strengthen participatory and direct democracy **Ralf Lindner**

- SMART-map: RoadMAPs to Societal Mobilisation for the Advancement of Responsible Industrial Technologies **Ralf Lindner**

- EIB-KET: Study on access-to-finance conditions for companies investing in Key Enabling Technologies (KETs) **Michael Meister**

- MetaForum **Thomas Reiß**

- Gesundheitsregionen der Zukunft **Thomas Reiß**

- EST-Frame: Integrated EST Framework **Thomas Reiß**

- KETs-control: Study on EU Positioning: An Analysis of the International Positioning of the EU using Revealed Comparative Advantages and the Control of Key Technologies **Thomas Reiß**

- Graphene: Update Science and Technology Roadmap for Graphene Flagship **Thomas Reiß, Michael Meister**

- Beschleunigte Evolution zur Bereitstellung optimierter und neuartiger Enzyme **Thomas Reiß, Heike Aichinger**

- KIC InnoEnergy ESA2 PhD 2015 **Andreas Sauer**

- Automatisierung und Robotik-Systeme **Ulrich Schmoch**

- Gene Editing **Ulrich Schmoch**

- Begleitmaßnahme Batterie 2020 **Axel Thielmann**

- KETs Observatory: Key Enabling Technologies (KETs) Observatory **Sven Wydra**

- Ermittlung wirtschaftlicher Kennzahlen und Indikatoren für ein Monitoring des Voranschreitens der Bioökonomie **Sven Wydra**

- Forum Privatheit und selbstbestimmtes Leben in der digitalen Welt **Peter Zoche, Michael Friedewald**

- Fachdialog Sicherheitsforschung **Peter Zoche, Michael Friedewald**

## POLICY – INDUSTRY – REGIONS

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ERP-Policy: Research and innovation policy analysis: provision of policy briefs and preparation of workshops **Susanne Bühner**

- MFT\_Druckbericht: Erstellung eines Druckberichtes auf Basis der Daten der aktualisierten Fassung der Landkarte Hochschulmedizin (2009–2012) **Susanne Bühner**

- Evalu\_Diskursprojekte: Evaluation des Förderinstruments Diskursprojekte zu ethischen, rechtlichen und sozialen Fragen in den modernen Lebenswissenschaften **Susanne Bühner**

- MoRRI: Monitoring the evolution and benefits of Responsible Research and Innovation **Susanne Bühner**

- SILQUA-FH: Evaluation der Förderlinie – Soziale Innovationen für Lebensqualität im Alter – SILQUA-FH des Programms Forschung an Fachhochschulen des Bundesministeriums für Bildung und Forschung (BMBF) **Susanne Bühner**

- VERA: Forward Visions on the European Research Area **Stephanie Daimer**

- Res-AGorA-RTD – CC P: Governance frameworks for Responsible Research and Innovation (RRI) **Stephanie Daimer**

- EnArgus2.0 – Zentrales Informationssystem Energieforschungsförderung **Stephanie Daimer**

- OECD-KT: Knowledge triangle policies and practices in Germany – State of affairs and developments at the country level and in selected higher education institutions **Stephanie Daimer**

- PFI-Monitor: Erfassung bibliometrischer Indikatoren für die PFI-Monitoringberichte 2011–2015 **Rainer Frietsch**

- PFI-Uni: Erfassung bibliometrischer Indikatoren von Universitäten **Rainer Frietsch**

- Software\_Pat\_2013: Computerimplementierte Erfindungen **Rainer Frietsch**

- Swedish\_Scientists: Bibliometrics for Swedish Scientists **Rainer Frietsch**

- EFL\_Pub\_2014: Ergebnisse von öffentlicher und privater Forschung: Publikationen **Rainer Frietsch**

- Innovationsindikator 2014 **Rainer Frietsch**

- Innovationsindikator 2015–2017 **Rainer Frietsch**

- AMCAP: Assessing companies' capability to develop advanced manufacturing technologies in selected industrial sectors **Rainer Frietsch**

- China\_RG: Study on the Internationalization of science, technology and innovation: Strategy, Policy and Practice **Rainer Frietsch**

- GC\_KETs: Collection and analysis of private R&D investment and patent data in different sectors, thematic areas and societal challenges **Rainer Frietsch**

- Attorney: Survey attorney service market **Rainer Frietsch**





## PROJECTS | VISITING RESEARCHERS

- AG\_Wissenschaftsindikatoren: Zuarbeit zur AG Wissenschaftsindikatoren – Bibliometrischer und patentstatistischer Vergleich  
**Rainer Frietsch**

- DCPI: Mitarbeit im Rahmen der deutschen Expertengruppe der Deutsch-Chinesischen Plattform Innovation  
**Rainer Frietsch**

- EFI\_PUB\_2015: Ergebnisse von öffentlicher und privater Forschung: Publikationen  
**Rainer Frietsch**

- KB-Autoren: Autoren Disambiguation im Web of Science  
**Rainer Frietsch**

- Durchführung einer Studie zur Bewertung des Beitrags von Fraunhofer zum deutschen Innovationssystem  
**Rainer Frietsch**

- OBSERVE – CC P: Observing Emergence  
**Rainer Frietsch**

- Biblio\_Asien: Folgestudie zu den beiden bibliometrischen Analysen für den asiatisch-pazifischen Raum von 2008 und 2010  
**Rainer Frietsch**

- Biblio\_Balkan: Bibliometrische Studie über die Westbalkanstaaten 2015  
**Rainer Frietsch**

- KETS control – CC P: An Analysis of the International Positioning of the EU using Revealed Comparative Advantages and the Control of Key Technologies  
**Rainer Frietsch**

- CSSA 2 – CC P: Der Beitrag sozial-partnerschaftlicher Kooperation zum Erfolg nicht-technischer Innovationen  
**Sandra Güth**

- StraKosphere: Verbundprojekt: Strategisches Kompetenzmanagement in nichtforschungsintensiven KMU des Verarbeitenden Gewerbes (StraKosphere), Teilprojekt: Kompetenzbedarfe aus der betrieblichen Wettbewerbs- und Innovationsstrategie  
**Djerdj Horvat**

- DB-InnoSupply: Entwicklung eines Messinstrumentes zur Bewertung der Innovationsfähigkeit von Zulieferunternehmen  
**Djerdj Horvat**

- DanKETwork II: Wissenstransfer über die Folgen und Herausforderungen der Integration von EU-Schlüsseltechnologien (Key Enabling Technologies) in die industrielle Produktion für den Donaauraum: Fokus auf die Integration avancierter Produktionstechnologien (Advanced Manufacturing Technologies, AMT)  
**Djerdj Horvat**

- Policy-Instrumente (Strategiefonds)  
**Miriam Hufnagl**

- VIVA-KMU: Entwicklungsperspektiven des industriellen Mittelstands: Veränderte Innovationsmuster  
**Angela Jäger**

- Umweltinnovationen: Umweltinnovationen und ihre Diffusion als Treiber der Green Economy  
**Angela Jäger**

- EU FTE Robo Update 2012: Analysis of the impact of robotic systems on employment in the European Union – 2012 data update  
**Angela Jäger**

- ERP-Indikatoren (LOT2): Data collection and performance indicators to monitor European research policy  
**Knut Koschatzky**

- Forschungscampus – pro aktiv: Erfahrungsaustausch und Integration im Rahmen der Förderinitiative Forschungscampus – öffentlich-private Partnerschaft für Innovation  
**Knut Koschatzky**

- ProFIT\_BLN: Ex-ante-Bewertung des Finanzinstruments ProFIT (Darlehenstil) des Operationellen Programms des Landes Berlin für den Europäischen Fonds für regionale Entwicklung (EFRE) in der Förderperiode 2014 bis 2020  
**Henning Kroll**

- RIM Plus 2015–2016: Regional Innovation Monitor 2015–2016  
**Henning Kroll**

- BJAST V: The current situation of the technology innovation system and its problems in China, Japan, Germany, and the EU  
**Henning Kroll**

- EU ManStu: An analysis of the drivers, barriers and readiness factors of EU companies for adopting advanced manufacturing products and technologies  
**Henning Kroll**

- Frugal\_Innovations: Study on Frugal innovation and reengineering of traditional techniques  
**Henning Kroll**

- EXIST V: Wissenschaftliche Begleitung und Evaluation des BMWi-Programms Existenzgründungen aus der Wissenschaft (EXIST)  
**Marianne Kulicke**

- Wirkungsanalysen: Konzeptionelle Weiterentwicklung von Methodiken zu Wirkungsanalysen im gesamten Spektrum von Maßnahmen der Forschungs-, Technologie- und Innovationspolitik  
**Marianne Kulicke**

- Green Finance: Strategien und Instrumente zur Finanzierung des ökologischen Modernisierungsprozesses  
**Marianne Kulicke**

- EXIST V Verlängerung: Wissenschaftliche Begleitung des BMWi-Programms Existenzgründungen aus der Wissenschaft (EXIST)  
**Marianne Kulicke**

- GeNaLog – Projekt 2: Verbundprojekt: Geräuscharme Nachtlogistik – Geräuscharme Logistikdienstleistungen für Innenstädte durch den Einsatz von Elektromobilität (GeNaLog), sozioökonomische, verkehrs- und handelslogistische Konzeption der geräuscharmen Belieferung – Phase 2  
**Christian Lerch**

- Readiness I4.0: Internetbasiertes Selbstbewertungsinstrument Industrie 4.0 für Baden-Württemberg  
**Christian Lerch**

- WICE: Potenziale eines Wandels zu einer Industrial Collaborative Economy – Grundzüge einer kollaborativen Wirtschaftsform in der Industrie  
**Christian Lerch**

- Eval\_START: Evaluation START Programme & Wittgenstein Award  
**Niclas Meyer**

- EPO\_EY\_2015: Understanding the use of patent information at every phase of the innovation process  
**Emmanuel Muller**

- StatCan: Mesurer le secteur des services au Canada – Analyse et comparaison internationale  
**Emmanuel Muller**

- ETC-European Territorial Coop: Ex post evaluation of Cohesion Policy programmes 2007–2013, focusing on the European Regional Development Fund (ERDF) and Cohesion Fund (CF) – Work Package Eleven: European Territorial Cooperation  
**Emmanuel Muller**

- EFI\_Pat\_2014: Ergebnisse von öffentlicher und privater Forschung: Patente  
**Peter Neuhäusler**

- EFI\_PAT\_2015: Ergebnisse von öffentlicher und privater Forschung: Patente  
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- MIP3: Erhebung des Innovationsverhaltens der Unternehmen in der produzierenden Industrie und in ausgewählten Dienstleistungssektoren in Deutschland in den Erhebungsjahren 2013, 2014, 2015 und 2016  
**Torben Schubert**

- Hochschulen\_BaWü: Erstellung einer wissenschaftlichen Studie über die Wirkungen der öffentlichen Finanzierung von Wissenschaft und Forschung in Baden-Württemberg auf die wirtschaftliche Entwicklung des Landes  
**Torben Schubert**

- EnPriC: Analysis of energy prices and costs in the EU, its Member States and major trading partners  
**Torben Schubert**

- Gutachten\_TAB\_2015: Anwendungs- und Entwicklungsperspektiven der additiven Fertigung für den Wirtschaftsstandort Deutschland  
**Oliver Som**

- Regional-Navigator: Entwicklung eines Standards für Regionalprofile  
**Thomas Stahlecker**

- Gesundheitsregionen der Zukunft: Richtlinie zur Förderung eines Begleitforschungsvorhabens zum BMBF-Wettbewerb Gesundheitsregionen der Zukunft  
**Thomas Stahlecker**

- Evalu-EU-Programmes (Lot 4): Multiple Framework contract for the procurement of studies and other supporting services on impact assessments and evaluations  
**Thomas Stahlecker**

- Machbarkeitsstudie: Monitor Wirtschaft und Region  
**Thomas Stahlecker**

- Evalu\_Dresden: Evaluierung der Kompetenzfeldstrategie der Landeshauptstadt Dresden  
**Thomas Stahlecker**

- Evalu\_inspire: Begutachtung der inspire AG um Bundesbeiträge nach Art. 15 FIFG für die Jahre 2017–2020  
**Thomas Stahlecker**

- Thüringen 4.0: Chancen und Risiken der Digitalisierung industrieller Wertschöpfungsprozesse für den Freistaat Thüringen  
**Thomas Stahlecker**

- China\_UNI\_2014: Update of Study MNC R&D collaboration in China  
**Ulrike Tagscherer**

- establishESIC – CC P: Establishment of a European Service Innovation Centre  
**Andrea Zenker**

- Eval\_IRO: Provision of Consultancy to undertake a review, report on, and make recommendations on Ireland's membership of International Research Organisations  
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