



Fraunhofer

ISI

FRAUNHOFER INSTITUTE FOR SYSTEMS AND INNOVATION RESEARCH ISI

ANNUAL REPORT
2017

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LOOKING BACK ON A SUCCESSFUL YEAR AND AHEAD TO A PROMISING FUTURE

Fraunhofer Institute for Systems and Innovation Research ISI looks back on a successful year 2017: Around 220 highly motivated staff worked on roughly 400 projects in order to provide our clients from industry, politics and science with options and perspectives for important decisions. This generated an operating budget of almost 24 million euros.

At the beginning of 2018, we honored particularly innovative colleagues with the Fraunhofer ISI Prize. At this award ceremony, which took place for the first time, prize winners in the categories “Excellent Qualification”, “Outstanding Doctoral Thesis” and “Best Project” were honored for their outstanding work in the year 2017. We are already looking forward to more excellent work by our researchers in the coming year.

The end of the year 2017 also marked a change of personnel in the institute’s management: Dr. Harald Hiessl, who has held a number of positions at Fraunhofer ISI since the end of the 1980s, and who has made a valuable contribution to the institute as its deputy head over the past ten years, is leaving us for a well-earned retirement. A special thank you to him from the head of the institute and all the members of staff. From February 2018, Professor Mario Ragwitz will work alongside Professor Marion A. Weissenberger-Eibl as deputy director of the institute.

Once again this year, our six scientific Competence Centers did excellent work. We give you some examples of their projects in this annual report. These include decentralized energy networks made up of many small energy sources, support for the ASEAN network in implementing renewable energies and energy efficiency, the development of future strategies for responsible research, accompanying a stakeholder dialogue to reduce trace substances in water, identifying the innovation potential for industrial biotechnology, and evaluating the effect of equality measures in research and development.

As these projects can only give you an exemplary insight into our activities, you will find a list of all the projects we worked on in 2017 at the end of this report. The extensive annex also provides information about the teaching activities and lectures of our scientists, the doctoral theses completed in the past year and our visiting researchers.

We hope you enjoy reading this report and we would be delighted to receive your personal comments and feedback.

Prof. Marion A. Weissenberger-Eibl
Director of the Institute

Dr. Harald Hiessl
Deputy Head of the Institute

“WE SHOULD FOCUS MORE ON THE POSITIVE ASPECTS OF DIGITALIZATION“

Digitalization is often viewed critically in Germany. This is partly due to the fact that the country needs to do a lot of catching up with regard to digitalization and that a very gloomy picture is often painted of its effects. And yet digitalization offers countless opportunities for business and society that should be emphasized and exploited to a greater extent.

An interview with the institute's director Professor Weissenberger-Eibl.

Ms. Weissenberger-Eibl, the topic of “digitalization” is currently the subject of intensive discussions in German industry as well as politics and science. Do you think this will be the big topic in the years ahead?

Weissenberger-Eibl: Yes, I think you could call this a “mega topic” and a huge challenge that will have large impacts on society in the next few decades. The majority of industrial sectors will experience changes due to digitalization in the near future. It can be assumed that the German technology sector will be the most strongly affected. But there are other fields like the media, telecommunications or finance, where data transfer already plays a pivotal role. This trend will accelerate rapidly, because so many sectors and businesses are integrated in large networks where data already contribute to digital value added. And this will continue to increase.

“DIGITALIZATION IS A MEGA TOPIC AND A HUGE CHALLENGE THAT WILL HAVE LARGE IMPACTS ON SOCIETY”

Does digitalization have the potential to alter the very foundations of our previous economic system?

Weissenberger-Eibl: Digitalization will certainly have a huge influence on how we do business and on the economic system as a whole. For instance, it could contribute to the emergence of many more microfirms in Germany, which would imply a major change to the country's economic structure. Digital technologies, in particular, and an increased trend towards do-it-yourself are fostering these developments. Using digital 3D printing techniques, for example, such microfirms could make parts whose large-scale production does not pay off for large companies. In addition to this, digitalization could also establish a new culture of exchange, in which even industrial firms use online tools or portals to offer others their own machines, tools or even production lines for hire or for exchange.

In this context, it is often said that Germany has a lot of catching up to do when it comes to digitalization – as the head of an internationally leading innovation research institute – what is your view of this?





Weissenberger-Eibl: Germany is currently not a world leader for digitalization and Industry 4.0 and must catch up quickly. This is also highlighted by the digitalization indicator that the Fraunhofer ISI developed in cooperation with the ZEW as part of the Innovation Indicator 2017: Germany only ranks 17 of the 35 countries analyzed. Regardless of whether we look at the digital economy, education or digital research and technologies – the results are never very good.

“GERMANY IS CURRENTLY NOT A WORLD LEADER FOR DIGITALIZATION AND INDUSTRY 4.0 AND MUST CATCH UP QUICKLY.”

What about the digital infrastructure that businesses need to use advanced Industry 4.0 applications, for example?

Weissenberger-Eibl: The digitalization indicator I mentioned was also used to see how Germany's digital infrastructure measures up. Here, the country is only in 19th place in an international context. This is partly because Germany has invested too little in broadband rollout in recent years. This picture is confirmed by another study of Fraunhofer ISI, in which we analyzed the penetration rate of fast fiber-optic Internet in Germany and other European countries. We discovered that 73 percent of households in Estonia already have high-speed fiber-optic Internet connections, 56 percent in Sweden and 53 percent in Spain. In Germany, only 6.6 percent of households can say the same; in rural regions, this figure can drop to less than two percent. In a comparison of OECD countries, therefore, Germany ranks 28 of 32 for the provision of fiber-optic connections. This is a cause for concern because powerful Internet connections form the basis for the Internet of Things, in which companies interconnect their digital applications and devices.

What has to be done to put Germany in a better position concerning digitalization in the future?

Weissenberger-Eibl: First and foremost, we need more ambitious

national targets for broadband expansion and better coordination of the deployment activities. In Estonia and Sweden, for example, municipal utilities are responsible for providing households with fast Internet connections along the lines of a public service; they are constructing new networks following the Open Access network principle that different providers can then utilize for a fee. In addition to this, small and medium-sized enterprises must be better integrated and their needs and requirements considered to a greater extent; education and further training has to be expanded more intensively in the direction of digitalization; and IT security must be future-oriented and guaranteed. However, a positive aspect is that people in Germany are using digital technologies intensively and there is strong awareness of the importance of digitalization.

“PEOPLE IN GERMANY ARE USING DIGITAL TECHNOLOGIES INTENSIVELY AND THERE IS A STRONG AWARENESS OF THE IMPORTANCE OF DIGITALIZATION.”

What insights are there at Fraunhofer ISI concerning the question of how digitalization will affect the world of work as we know it today?

Weissenberger-Eibl: Based on our studies, we assume there will be major changes to how work is designed and a significant transformation of today's work environment. So-called “atypical work models” such as flexible part-time employment could increase considerably and create the basis for new working forms: For example, there is likely to be a clear increase in the number of firms in which “creative digital crowd workers” work together in frequently changing teams and projects as well as partially on a self-employed basis. The employment relationships in 2030 could be much more heterogeneous than they are at present, and the share of “ad-hoc click workers” performing standard tasks from any location via computers and the Internet will increase dramatically. This would affect highly qualified as well as low-skilled workers.

“WE SHOULD FOCUS MORE ON THE POSITIVE ASPECTS OF DIGITALIZATION AND ACTIVELY EXPLOIT ITS POTENTIALS.”

In this context, it is often said that automation and digitalization will replace human labor and could lead to a massive loss of jobs. What do your studies conclude?

Weissenberger-Eibl: When it comes to jobs, there is all too often a one-sided view of the risks posed by digitalization and too rarely of the opportunities offered. Of course, there could be a strong increase in the use of robots, not to replace people, but rather to help them, to ease their workload and to improve their productivity. Robots could perform repetitive routine tasks, for example. One of our studies further shows that companies with robotic systems do not invest less in human capital in order to amortize high technology costs, for instance. In fact, the use of industrial robots in companies leads to greater efficiency and productivity in work and production processes and can improve their competitiveness. And this is what companies need in order to be well-positioned when facing fierce competition.

You mentioned the opportunities resulting from digitalization for Germany. Can you give us an example?

Weissenberger-Eibl: In one of the studies by Fraunhofer ISI, we found out that up to 550 companies each year are using digitalization technologies to bring outsourced production capacities back to Germany. The main reason for this is higher productivity due to automation and the resulting potential for saving costs. This harbors few risks to workers because the companies are employing digitalization technologies in addition to their staff – as long as these have the skills needed to use digital technologies or can acquire them over time.

How can we overcome the widespread skepticism in society concerning digitalization?

Weissenberger-Eibl: By focusing more on the positive aspects of digitalization, remaining curious, interested and open to new developments and actively exploiting the potentials offered by digitalization to develop solutions to the Grand Challenges of our time. As well as economic and social innovations, digitalization can also contribute to ecological and sustainable innovations. For instance, it can make an important contribution if companies use smart energy management systems to probe their consumption of materials and energy and – equipped with this knowledge about material and energy flows - optimize entire production chains. A study by Fraunhofer ISI shows that the use of energy management systems in companies quadrupled to 21 percent between 2012 and 2015. According to the study, companies that use digital tools to find out more about their energy consumption are also much more likely to implement saving measures like technologies to recover energy. Without digitalization, they would know nothing about this potential for optimization.

Thank you very much for the interview Ms. Weissenberger-Eibl!

The interview was conducted by Anne-Catherine Jung.

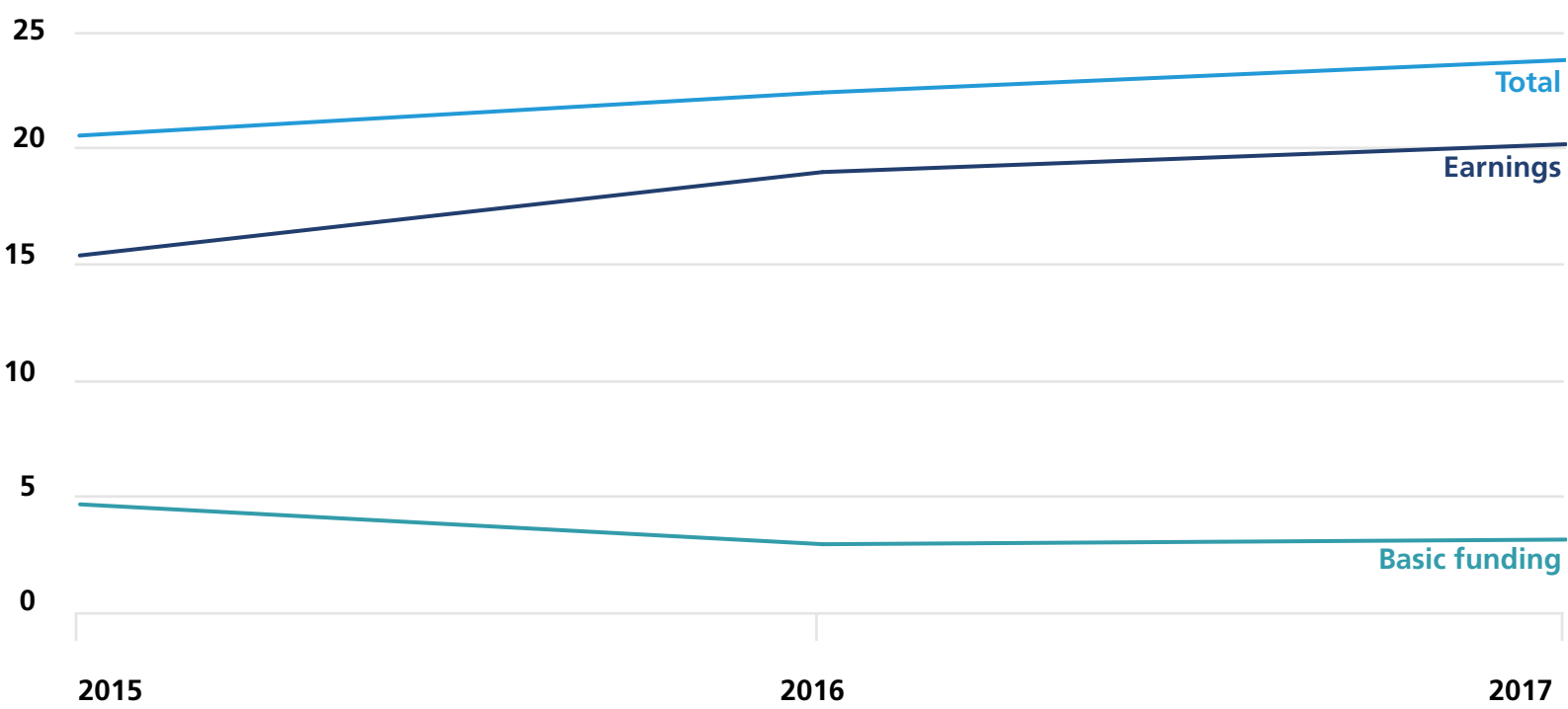
FACTS AND FIGURES

OPERATING BUDGET 2017

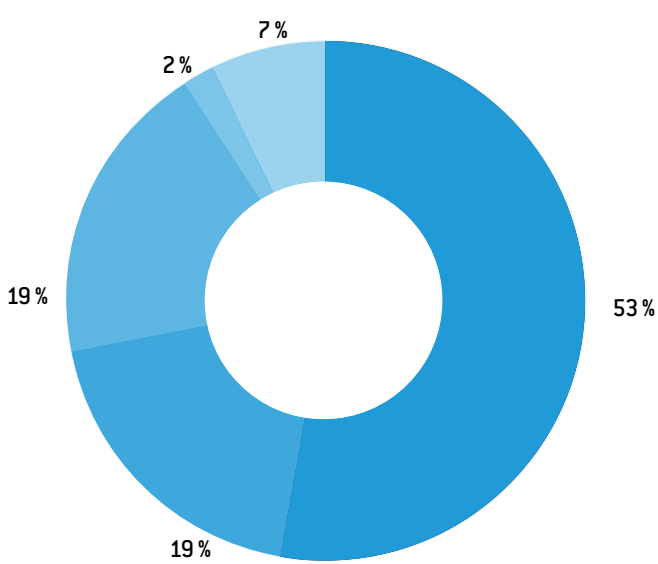
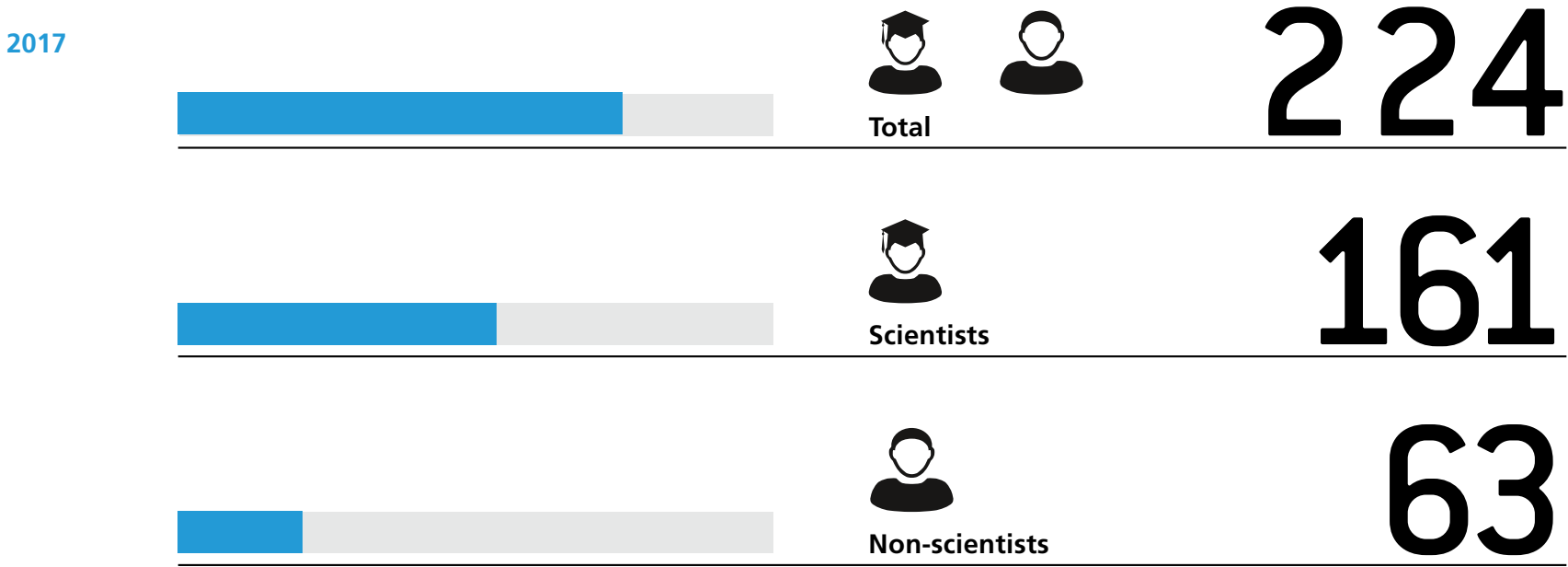
23.9 million euros
Total

3.7 million euros
Basic funding

DEVELOPMENT OF TURNOVER in million euros



NUMBER OF STAFF



20.2 million euros
Earnings

ORGANIZATION

HEAD OF INSTITUTE



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DEVELOPMENT OF THE ASEAN ENERGY OUTLOOK 2017

A population increase by 24 percent by 2040, a tripling of the gross domestic product, and stable economic growth by 5 percent annually – the countries that make up ASEAN (Association of Southeast Asian Nations) constitute one of the fastest growing regions in the world. The energy demand of its member states is increasing at the same time. The “5th ASEAN Energy Outlook (AEO5)”, which was co-developed by Fraunhofer ISI, shows how countries can react to the associated challenges.

A major finding of the AEO5: Renewable technologies should cover a large share of the ASEAN region’s energy demand in the future. In the past, the ASEAN states relied heavily on fossil fuels. However, because the costs of renewable technologies have recently dropped significantly – as demonstrated by auctions in Germany and Dubai – it is now worth investing more in renewable technologies such as photovoltaic power stations or electricity storage. This trend is set to continue over the next decade.

This offers the ASEAN countries new opportunities. Transforming the energy system from fossil energy to renewable sources creates jobs, strengthens local industries and helps combat poverty. Examples of this include countries like Malaysia, Vietnam and the Philippines that have begun to construct their own production lines for photovoltaics. In addition, the deployment of solar, wind, biomass and geothermal enables ASEAN member states to become more independent of energy imports from abroad, which eases the burden on the states’ budgets. However, to start with, fossil and renewable energies should be used in tandem in order to ensure a reliable supply of energy able to meet current demand. The plan is to then rapidly increase the share of renewables and, in addition, improve the efficiency of supply and use of fossil technologies.

Three scenarios of energy demand and supply in the ASEAN region

A main objective of the AEO5 was to analyze the implementation of ASEAN’s Plan of Action for Energy Cooperation (APAEC). This Action Plan aims to raise the share of renewables in the region’s primary energy mix to 23 percent by 2025. At the same time, energy intensity should be lowered by 20 percent (by 2020) and then 30 percent (by 2025) compared to 2016.

The AEO5 analysis focused on three scenarios of energy demand and supply for the ASEAN countries up to 2040:

- ▶ “Business as usual”: continuation of past trends
- ▶ “ASEAN Member States Targets Scenario (ATS)”: Each of the ten ASEAN member states meets the national targets for energy efficiency and renewable energies.
- ▶ “ASEAN Progressive Scenario (APS)”: The entire region meets the community targets for EE and RE defined in the APAEC. The region’s targets are much more ambitious than the national ones. However, the targets set for energy efficiency are less ambitious than those for renewable energies are.

The analysis showed that the ASEAN countries are on the right track to achieving the region’s targets for energy efficiency. However, the energy efficiency targets could be formulated much more strictly. This would also help to achieve the targets for renewable energies that still require greater efforts. To advance the deployment of renewable energies, the AEO5 recommends a joint, harmonized energy policy along the lines of that practiced in the European Union.

The AEO5 was presented to two important groups on 28 September 2017: first to the energy ministers of the ASEAN countries at the 35th ASEAN Ministers on Energy Meeting (AMEM). Subsequently, to stakeholders in the energy industry at the ASEAN Energy Business Forum. Both meetings took place in Manila, the Philippine capital. Further information is available on the [project’s website](#).

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BUSINESS UNITS

▶ Renewable energies

▶ Energy policy

▶ Climate policy

▶ Electricity markets and infrastructures

Renewable energy sources provide chances for companies, which means that worldwide investments are increasing. The Business Unit *Renewable energies* evaluates the contribution of renewable energies to climate protection; security of supply as well as competitiveness, draws up scenarios for future development and studies the design of energy policy instruments.

Prof. Mario Ragwitz
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“C/SELLS” – EVALUATION OF A CELLULAR ENERGY SYSTEM

An important result of the energy transition is the decentralization of electricity production. Designing a decentralized, intelligent energy system (smart grid) that is as robust and efficient as centralized networks with large power stations is a huge challenge. In the “C/sells” project, scientists from Fraunhofer ISI together with 60 partners are exploring how decentralized energy systems made up of many small energy sources can work reliably and efficiently. Fraunhofer ISI is helping to shape the guiding principle, among other things, and evaluating the solutions developed.

The C/sells project is based on the vision that, in the future, a large number of power plants will produce energy from different renewable sources and feed this into a shared grid. In order to design a reliable energy grid for the whole of Germany from the interaction of these numerous local renewable energy sources, C/sells is planning to connect the individual plants with each other in cells.

Such a decentralized cellular energy system is currently being tested in southern Germany. In a model region, the project’s participants are testing the interaction of decentralized electricity production and consumption in 35 demonstration cells. The cell is the key component of this energy system. One cell comprises one or several units that generate, consume or store electricity. The individual systems within one cell are connected with each other, as are the cells themselves.

Cellularity as the key component of the energy system

Cells can be geographical, such as the residential district Franklin in Mannheim, but also comprise single objects like Stuttgart airport. The aim is to develop a decentrally controlled cost-effective energy system by exchanging data and energy within cells as well as between them.

The scientists are evaluating solutions to improve the coordination of consumption, production and grid loads within and outside cells. They are also investigating the willingness of the public, enterprises and organizations to actively participate in a cellular energy system.

The energy system of the future: participative, diverse and cellular

Fraunhofer ISI is designing important parts of C/sells, including the guiding principle, which describes how the energy transition is implemented in C/sells. Apart from cellularity, the guiding principle describes two further properties of such an energy system. First, participation: C/sells wants to motivate the public and enterprises to realize the energy transition themselves, for example by selling self-generated electricity on the market or by adapting their own consumption to the availability of renewable energies. Innovative solutions are also being tested, such as blockchain technology, which makes direct transactions possible without an intermediary. This is linked to the hope that citizens who actively participate in the energy system will support and shape the energy transition as a whole. To what extent and under which conditions this is successful is one of the questions in the project. Second, diversity: C/sells unites a number of actors, technical solutions and needs. Not only the cells and the systems are closely interconnected, so is the project structure and organization of C/sells. The sum of the individual solutions creates a big, functioning whole.

Fraunhofer ISI is responsible for evaluating the results of C/sells. The team is developing a quantitative and qualitative evaluation instrument to assess the concepts developed within C/sells. This can evaluate not only the various technical solutions, but also the business models and incentives that aim to guarantee, for example, that the power trading among owners of private energy facilities complies with the regulations.

Further information is available on the [project’s website](#).

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BUSINESS UNITS

► Energy efficiency

► Energy economy

► Demand analyses and projections

► Demand responses and smart grids

Energy efficiency is becoming increasingly important due to high energy prices and climate change. Therefore, the Business Unit *Energy efficiency* analyzes techniques and measures to raise energy efficiency and develops appropriate strategies for enterprises and politics.

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RESPONSIBLE RESEARCH – FUTURE STRATEGIES FOR SCIENCE

Artificial intelligence in our cars, cancer treatments based on our DNA – huge advances in research also raise serious ethical concerns. How can researchers adequately consider social values in an increasingly innovation-driven society? This is the question addressed by the EU project JERRI (Joining Efforts for Responsible Research and Innovation). Together with its partner, the Netherlands Organisation for Applied Scientific Research (TNO), Fraunhofer is developing new practices for responsible research and innovation (RRI).

JERRI's objective is to foster a long-term and sustainable change in both organizations towards innovative and responsible research. More specifically, the researchers analyzed five aspects of RRI:

- Ethics
- Gender equality/gender in research content
- Open access
- Public engagement
- Science education

The results were used by researchers from both organizations to define guidelines and measures for orienting responsible research in the future, and to launch concrete pilot activities.

The JERRI roadmaps point the way to responsible research

The project team organized workshops with external stakeholders on all five aspects and developed visions of the future. These define the orientation of Fraunhofer-Gesellschaft and TNO with regard to the respective aspect. For example, in JERRI's vision of "Ethics", the Fraunhofer-Gesellschaft is described as a "recognized advisory body for ethical aspects of research" in fields in which it plays a leading role

in research. Fraunhofer's vision of "Gender" in JERRI specifies that the provision of equal opportunities for all should be deeply engrained in the organizational culture.

For each vision, workshop participants defined specific pilot actions to promote its realization. Examples include:

- Setting up an ethical advisory service for researchers.
- A café-type meeting place, where citizens can talk to researchers and ask questions.
- An infrastructure for open access to research data.
- A gender toolbox with practical examples of how to improve equality between men and women in a research organization.

Following the intensive work in 2017 on developing the long-term visions of the future, the plan is to further develop and implement the measures in 2018 and 2019. The team from Fraunhofer ISI can contribute an additional Foresight competence here: The development of transition roadmaps that illustrate which activities should take place at which time, which obstacles have to be overcome, and which opportunities can be exploited. JERRI's unique contribution is that, in close interaction with TNO, a new understanding of responsible research is formed, not only for individual research institutes but also for the Fraunhofer-Gesellschaft as a whole.

The Fraunhofer-Gesellschaft and TNO are the biggest organizations for applied research in Europe. Alongside the Fraunhofer ISI (project coordination), the Fraunhofer-Gesellschaft's headquarters and the Fraunhofer institutes UMSICHT, IAO, IRB are also involved in JERRI. Other project partners include the Manchester Metropolitan University and the Institute for Advanced Studies in Vienna. Further information is available on the [project's website](#).

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BUSINESS UNITS

► Future alternatives and society

► Future thinking and dialogs

► Foresight for strategy development

The Business Unit *Future alternatives and society* explores futures for society in their complexity and openness. The focus is on the examination of the future interplay of social domains such as civil society, economy, politics, technology and environment. Our clients receive systematic search results, analyses and assessments of social change as well as future alternatives.

Lorenz Erdmann
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STAKEHOLDER DIALOGUE TO REDUCE
TRACE SUBSTANCE CONTAMINATION IN
WATERS

One of environmental policy’s main aims is to protect our water. All over the world, rivers, lakes and oceans are being contaminated by chemicals that are harmful even in very low concentrations. Such trace substances enter water bodies from medication, building products or household chemicals. In 2017, Fraunhofer ISI conducted a dialogue process within which the participating stakeholders agreed on 14 recommendations for action to reduce the discharge of trace substances into water bodies.

The resulting policy paper “Recommendations from the multi-stakeholder dialogue on the Trace Substance Strategy of the German federal government to policy-makers on options to reduce trace substance inputs to the aquatic environment” was presented to the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) in June 2017. It contains strategies for the following stages in the life cycle of trace substances:

- ▶ Mitigation strategies at source (e.g. concretization of manufacturers’ product responsibility, improved assessment of substances and transparent communication of the results).
- ▶ Mitigation strategies on the user side (e.g. information campaigns and educational programs, labelling, technical and organizational measures).
- ▶ Mitigation strategies based on end-of-pipe measures (such as additional wastewater treatment and proper disposal).

The paper also addresses the question of how to finance the strategy’s implementation. The paper and the strategy it describes are the most important result of the sometimes very controversial stakeholder dialogue on the German government’s “Federal Trace Substance Strategy”. Together with the IKU GmbH, Fraunhofer ISI organized and conducted the stakeholder dialogue on behalf of the

BMUB and the Federal Environment Agency. The aim was to listen to and bring together the needs of stakeholders from industry, municipalities and the health system and to develop a joint strategy for dealing with these substances on this basis.

Fraunhofer ISI provides technical input for specialist workshops

Within the framework of the stakeholder dialogue, Fraunhofer ISI provided input papers that formed the basis for three specialist workshops where the key points of the strategy were developed. The focus was on the entire life cycle of trace substances. IKU GmbH moderated the workshops. Different stakeholders were involved as well as representatives of federal ministries, authorities and federal states. The basic principle was to seek stakeholder consensus. Minority votes were documented.

One research group in the Business Unit Water Management has focused for years on the impacts of trace substances on the aquatic environment. As these substances enter water bodies in many different ways, there are also many possibilities to reduce or stop their discharge. The team not only investigates emission patterns and discharge paths for different groups of substances. It also tests concrete countermeasures in pilot projects. One project was conducted in cooperation with healthcare facilities to retain x-ray contrast agents that have so far been discharged into our waters in large quantities. The results clearly demonstrate that the measures required have to go well beyond traditional water management in order to reduce water pollution efficiently and sufficiently.

In the second phase of the dialogue process, which was officially launched with a kick-off event on 21 February 2018, Fraunhofer ISI will support and accompany the concretization and implementation of the strategy and the derived measures.

Further information is available on the [project’s website](#) and in our [Policy Paper](#).

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BUSINESS UNITS

▶ Water resources management

▶ Sustainability innovation and policy

▶ Systemic risks

▶ Mobility

Water supply and wastewater disposal must be adapted to the challenges such as new pollutants or demographic and climate change. The Business Unit *Water resources management* analyzes the developments and works out measures that contribute to the sustainability of infrastructure systems.

Dr. Thomas Hillenbrand
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EUROPEAN INNOVATION POLICY FOR INDUSTRIAL BIOTECHNOLOGY

Microorganisms and fungi can help to make industrial products cleaner and more sustainable. These types of methods are called “Industrial biotechnology” (IB) and are already being used in many production chains, for example in textiles, the food sector or pharmaceuticals. Biotechnology helpers have the potential to reduce the CO₂ emissions of industry and protect the environment. A research team in the Competence Center Emerging Technologies has developed methods to identify innovation potentials in the field of IB.

In a simple form, biotechnological processes have been used since the Middle Ages, when brewing beer or making cheese, for example. In modern knowledge-based industries that are characterized by a division of labor, increasingly refined application possibilities are emerging. Today, for example, wood-based fuel or biotechnological fragrances and flavors can be produced with the help of microbes, fungi or components obtained from them. The advantages compared to production processes based on fossil fuels: The final products are less contaminated with environmentally harmful substances and some are even biodegradable. This makes industrial biotechnology a key technology on the road to a resource-efficient circular economy.

Industrial biotechnology has enormous innovation potential. The market for bioplastics alone could quadruple in the next few years – not solely, but also due to innovations. The European Commission wants to exploit this innovation potential. To do so, it needs appropriate policy, technology and economic measures. A research team from the Competence Center Emerging Technologies has explored what these measures could look like in the EU project PROGRESS

(Priorities for Addressing Opportunities and Gaps of Industrial Biotechnology for an Efficient Use of Funding Resources).

The team analyzed six value chains: Alongside lignocellulosic-ethanol, these included bio-based plastics and enzymes, biopharmaceuticals, biotech flavors and fragrances and microbiomes for a healthy diet. The scientists analyzed how the technology was developing in these fields, which patents and markets could emerge in the future, and which framework conditions can be expected for these value chains. This resulted in six future scenarios that describe the possible market developments of the next ten years for each of the six value chains.

Technical progress not the only decisive factor

The scenarios show that the question of how intensively companies and industry apply biotech processes depends on various factors. Significant factors of success for all value chains include upscaling to industrial production, for example, supportive regulatory framework conditions (standards, labelling), and a positive environment that is open to new processes. Model simulations conducted for lignocellulosic-ethanol and bio-based plastics also identified the key role played by targeted public spending on research and development, and demand-side measures.

An important finding of PROGRESS: Technical progress is not the only decisive factor for establishing biotech processes in European industry. A coherent overall concept of technologies, processes, applications and policy support is more important. This includes the expansion of supranational cooperation to improve the access to knowledge about industrial biotechnology. There are large differences within the EU Member States, for example concerning the availability of biotechnological capacities and resources. Further information is available on the [project’s website](#).



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BUSINESS UNITS

► Bioeconomy and life sciences

► Innovations in the health system

► Information and communication technology

► Industrial technologies

MeLife sciences increasingly permeate the fields of medicine and health, agriculture and food production, industrial manufacturing, analysis, environmental and energy technologies. The Business Unit *Bioeconomy and life sciences* identifies current developments, explores their effects, determines the position of Germany and Europe in international competition and analyzes the influence of policies.

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THE EFFECT OF EQUALITY ON RESEARCH AND DEVELOPMENT

What do politics, companies, universities and research facilities in the European Union do for the equality of male and female employees – and how successful are these measures? An evaluation system from the EU project “EFFORTI”, coordinated by Fraunhofer ISI, measures the effect of equality measures in Research and Development (R&D). The reports on gender equality in seven European countries have been published recently.

In recent years, Germany has caught up enormously on the subject of equality in Research and Development. This emerges from a comparative report, which the participants in the project EFFORTI published in 2017. Nevertheless, women are still under-represented in decision-making bodies and top positions. Germany has also only recently become increasingly active in monitoring equality measures in R&D.

The results are based on seven country reports, which investigate the framework conditions of equality in seven EU states. In addition to Germany, these also include Austria, Denmark, Spain, Hungary, France and Sweden. The studies focused on the gender specific participation and segregation in the research and innovation system, on gender equality strategies and their influence on research, technology, development and innovation in the individual countries as well as country-specific evaluation practices.

All over Europe, women are subject to precarious work situations in the higher education sector far more often than men. This situation is

particularly pronounced in Hungary. At the same time, however, the number of female scientists has generally increased all over Europe in recent years. Spain remains number one in the number of women in research and development. The study also showed that women still do far more unpaid work than men. The differences here are least prominent in the Scandinavian countries Sweden and Denmark.

High strategic importance for the European Commission
Within the context of EFFORTI, the research team of Fraunhofer ISI together with its project partners has developed indicators which measure the effect of equality measures on the quality and performance in R&D. In addition to the classic indicators such as the number of patents and publications, the scientists also used new concepts from the area “Responsible Research and Innovation”, in which Fraunhofer ISI has already realized several projects. As a next step, an online toolbox has been planned. The users from ministries, companies and research institutions can measure the various effects of different equality measures and adapt the support instruments if necessary. As of May 2019, access to the toolbox will be free of charge.

In addition to Fraunhofer ISI and the Fraunhofer Institute for Industrial Engineering (IAO), the University of Aarhus (Denmark), the Universitat Oberta de Catalunya (Spain), Joanneum Research (Austria), the Hungarian non-governmental organization NaTE (Association of Hungarian Women in Science) as well as Intrasoftware Ltd. are represented in EFFORTI. The European Commission supports the project within the Horizon 2020 program where it experiences high strategic importance.

Further information is available on the [project’s website](#).

HEAD

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BUSINESS UNITS

► Policy design and evaluation

► Industrial innovation

► Regional innovation systems

► Innovation indicators

The main focus of research in the Business Unit *Policy design and evaluation* is on the analysis and evaluation of research, technology and innovation policy measures. We advise the German and foreign governments, ministries, the European Commission and funding agencies.

Dr. Susanne Bühner
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ADVICE FROM SCIENCE, INDUSTRY, POLITICS AND ADMINISTRATION

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GROUPS AND ALLIANCES | ACADEMIC TEACHING | DISSERTATIONS

GROUPS AND ALLIANCES	LECTURE <i>Renewable Energies</i> Karlsruhochschule International University, Karlsruhe	LECTURE <i>Analyse der Energiebereitstellung und -umwandlung</i> Duale Hochschule Lörrach	SEMINAR <i>Digitale Transformation und Geschäftsmodelle</i> Karlsruher Institut für Technologie	Peter Neuhäusler TUTORIAL <i>Management neuer Technologien – Technikbewertung mit Patentanalysen</i> Karlsruher Institut für Technologie	Thomas Reiß LECTURE <i>Management neuer Technologien</i> Karlsruher Institut für Technologie	Torben Schubert LECTURE <i>Innovation Management</i> Universität Lund, Sweden
The Fraunhofer ISI is a member of the Fraunhofer groups:	Kerstin Cuhls SEMINAR <i>Methoden der Zukunftsforschung</i> Freie Universität Berlin	LECTURE <i>VWL – Mikroökonomie</i> Wilhelm Büchner Hochschule, Darmstadt	Knut Koschatzky SEMINAR <i>Angewandte Wirtschaftsgeographie – neue Themen der angewandten und regionalen Innovationsforschung</i> Leibniz Universität Hannover	Jutta Niederste-Hollenberg Lecture Series <i>Wissen.Schafft.Dialog. – Die Zukunft der Wasserinfrastrukturen im ländlichen Raum</i> HAWK Hochschule für angewandte Wissenschaft und Kunst Hildesheim/ Holzminden/ Göttingen und Hochschule Ostwestfalen-Lippe, Höxter	Karoline Rogge LECTURE <i>Introduction to Energy Policy</i> University of Sussex, Brighton, Great Britain	Thomas Stahlecker SEMINAR <i>Grundlagen der angewandten Innovationsforschung</i> Karlsruher Institut für Technologie
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	METHODOLOGY SEMINAR <i>Strategische Vorausschau. Vertiefung und Anwendung explorativer Methoden (Modul B)</i> Bundesakademie für Sicherheitspolitik, Berlin	Tobias Fleiter LECTURE <i>Energy Policy</i> Albert-Ludwigs-Universität Freiburg	SEMINAR <i>Wissens- und Technologietransfer: Ausprägungen, Hemmnisse, räumliche Implikationen und Fallbeispiele</i> Leibniz Universität Hannover	SEMINAR <i>Technological Innovation Systems</i> University of Sussex, Brighton, Great Britain	Clemens Rohde LECTURE <i>Energieeffizienz</i> Technische Universität Darmstadt	Marion A. Weissenberger-Eibl SEMINAR <i>Fallstudienseminar Innovationsmanagement</i> Karlsruher Institut für Technologie
	Ewa Dönitz BLOCK SEMINAR Innovationswerkstatt: Innovations- und Projektmanagement Femtec Berlin	Simon Funke SEMINAR <i>Ökonomische Aspekte der Verkehrswende</i> Helmholtz Research School on Energy Scenarios (Graduiertenschule), Karlsruhe	Sabine Langkau LECTURE/SEMINAR <i>Methoden und Ansätze der Nachhaltigkeitswissenschaft</i> Hochschule Bochum	Martin Pudlik SUMMER SCHOOL <i>Sustainable Energy Technology</i> RWTH Aachen	LECTURE <i>Grundlagen des Planens, Entwerfens und Konstruierens – Energie und Ressourcenmanagement</i> Technische Universität Darmstadt	Martin Wietschel LECTURE <i>Energiepolitik</i> Grenoble Ecole de Management, France
ACADEMIC TEACHING	Vicki Duscha LECTURE <i>Energy and Climate Policy</i> Albert-Ludwigs-Universität Freiburg	Till Gnann SEMINAR <i>Ökonomische Aspekte der Verkehrswende</i> Helmholtz Research School on Energy Scenarios (Graduiertenschule), Karlsruhe	Christian Lerch LECTURE <i>Dienstleistungsökonomik</i> Hochschule Karlsruhe für Technik und Wirtschaft	LECTURE <i>Wind Elective</i> Albert-Ludwigs-Universität Freiburg	LECTURE <i>Renewable Energies, Energy Scenarios and Climate Protection</i> Karlsruher Institut für Technologie	Joachim Globisch LECTURE <i>Energy models – supply and demand side</i> Karlsruher Institut für Technologie
	Elisabeth Dütschke LECTURE CONTRIBUTION <i>Renewable Energy</i> Hochschule Offenburg	Matthias Gotsch LECTURE <i>Einführung in die BWL</i> Hochschule Fresenius Heidelberg	Simon Marwitz SEMINAR <i>Auslegungen von Stromnetzen</i> Universität Hohenheim	LECTURE <i>Methoden der Regenerativen Energiewirtschaft</i> Technische Hochschule Bingen	LECTURE <i>Business Economics</i> Grenoble Ecole de Management, France	SEMINAR <i>Themenfelder Energie und Umwelt</i> Karlsruher Institut für Technologie
	Wolfgang Eichhammer LECTURE <i>Energy in the Context of Sustainability</i> Utrecht University, Netherlands	Marian Klobasa LECTURE <i>Windenergie</i> Technische Hochschule Bingen	Cornelius Moll SEMINAR <i>Schwerpunkt-Seminar Marketing und Management-Insights</i> Universität Hohenheim	LECTURE <i>Energiewirtschaft</i> Technische Hochschule Bingen	LECTURE <i>Advanced Econometrics, PhDs</i> Grenoble Ecole de Management, France	LECTURE <i>Technologischer Wandel in der Energiewirtschaft</i> Hector School, Karlsruher Institut für Technologie
	Sibylle Braungardt LECTURE <i>Climate and Energy Policy</i> Albert-Ludwigs-Universität Freiburg	Daniel Jeffrey Koch SEMINAR <i>Technologien für das Innovationsmanagement</i> Karlsruher Institut für Technologie	SEMINAR <i>Humboldt-Reloaded Seminar</i> Karlsruher Institut für Technologie	Mario Ragwitz LECTURE <i>Climate and Energy Policy</i> Albert-Ludwigs-Universität Freiburg	Ulrich Schmoch LECTURE <i>Innovation & Transfer</i> Deutsche Universität für Verwaltungswissenschaften Speyer	LECTURE <i>Energy Efficiency – Demand side</i> Karlsruher Institut für Technologie
	Barbara Breitschopf LECTURE <i>Socio-economic and ecological aspects of infrastructure planning</i> Karlsruher Institut für Technologie					

DISSERTATIONS | PRESENTATIONS

Andrea Herbst
Kopplung eines makroökonomischen Modells mit einem „bottom-up“ Energienachfrage-Modell für die Industrie: Eine Fallstudie über die Stahlindustrie
Prof. Olav Hohmeyer
Europa-Universität Flensburg

Tim Hettesheimer
Strategische Produktionsplanung in jungen Märkten – Ein systemdynamischer Ansatz zur Konzeption und dynamischen Bewertung von Produktionsstrategien am Beispiel der Lithium-Ionen-Traktionsbatterie
Prof. Frank Schultmann
Karlsruher Institut für Technologie

Jan Kersting
Stability of cooperation in the international climate negotiations – An analysis using cooperative game theory
Prof. Karl-Martin Ehrhart
Karlsruher Institut für Technologie

Judit Kockat
Energy policy adjustments for building renovation in growing and shrinking cities
Prof. Hans-Joachim Linke
Technische Universität Darmstadt

Julia Michaelis
Modellgestützte Wirtschaftlichkeitsbewertung von Betriebskonzepten für Elektrolyseure in einem Energiesystem mit hohen Anteilen erneuerbarer Energien
Prof. Dr. Dominik Möst
Technische Universität Dresden

Jenny Winkler
Market integration of renewables in the electricity sector – impact on electricity markets and renewable support policy as well as interactions with system flexibility
Prof. Mario Ragwitz
Albert-Ludwigs-Universität Freiburg

PRESENTATIONS

EXAMPLES

Daniel Bachlechner
Societal and Ethical Challenges in the Era of Big Data: Exploring the emerging issues and opportunities of big data management and analytics
► 23rd ICE/IEEE International Technology Management Conference, Funchal, Portugal

Increased Data Reuse in Europe: An Opportunity and a Challenge at the Same Time
► 23rd ICE/IEEE International Technology Management Conference, Funchal, Portugal

Taking the European Data Economy to the next level: Overcoming barriers faced in the data economy
► International Conference on Knowledge Technologies and Data-driven Business (i-KNOW 2017), Graz, Austria

Miriam Bodenheimer
Transition towards socially sustainable behavior? An analysis of the smartphone sector
► 8th International Sustainability Transitions (IST) Conference, Gothenburg, Sweden

Harald Bradke
Energiewende-Szenarien – wie können wir 80 bis 95% CO₂-Reduktion erreichen?
► Kolloquium Energietechnik LEE, Ruhruniversität Bochum

Herausforderungen einer Reduktion der Treibhausgase um 95%
► 11. Kolloquium Sustainable Bio-Economy, Karlsruhe

Zielkonflikte und Widersprüche
► Energie- und Klimakontroversen, Hanns-Seidel-Stiftung, Bernried

Sibylle Braungardt
Harmonization of MEPS and energy labelling in Latin America and the Caribbean – Opportunities and Challenges
► eceee Summer Study, Hyères, France

Barbara Breitschopf
What is the impact of the EU Energy Union on electricity prices? Results for selected member states
► EEM 2017, European Electricity Market Conference, Dresden

The end of long-term contracts? Gas price and market dynamics in Central and Eastern Europe
► EEM 2017, European Electricity Market Conference, Dresden

Efficiency vs. power prices to maintain competitiveness?
► IAEE 2017 European Conference, Vienna, Austria

Susanne Bühner
Developing an Evaluation Framework for Promoting Gender Equality in R&I (EFFORTI) – first insights from an ongoing H2020 project
► STI 2017: Science, Technology and Innovation Indicators: Open indicators: innovation, participation and actor-based STI indicators, Paris, France

EFFORTI – Evaluation Framework for Promoting Gender Equality in Research and Innovation
► STEM Gender Equality Congress, Berlin

Kerstin Cuhls
The potential and limitations of foresight
► Conference POWER FROM STATISTICS, EuroStat, Brussels, Belgium

Synchronizing Futures – Attempts in Innovation Research and Foresight
► Conference Synchronizing the World, Oslo, Norway

Stephanie Daimer
Universities in Flux – Towards Knowledge Triangles
► 2017 Annual Conference of the European Forum The Future of STI – The Future of STI Policy, Vienna, Austria

Claus Doll
Digitalisierung der Mobilität. Trends – Technologien – Leitbilder – Akteure
► Volkswagen AutoUni, Learning Journey 2017, Berlin

Intelligent vernetzt – wo geht die Reise hin?
► Hypermotion – Fraunhofer Mobility Infusion, Frankfurt/Main

Economic impacts of introducing road charging for Heavy Goods Vehicles: A comparison between Spain and Germany
► Transportation Research Board 96th Annual Meeting, Washington, D.C., USA

Vicki Duscha
Comparative analysis of options and potential for emission abatement in industry
► ETS-7 Fachgespräch Minderungspotentiale Industrie und Innovationsfund, Berlin

Low Carbon Europe 2050: Ambitious climate protection scenarios for Europe
► Side Event at the COP24, Bonn

Elisabeth Dütschke
The individual at the centre of a distributed energy system
► IEA EGRD Workshop: Towards a Consumer-Driven Energy System, Copenhagen, Denmark

Fostering the transition of the heat sector – what are the major challenges for relevant actors?
► 1st International Conference on Energy Research & Social Science, Sitges, Spain

Providing a digital solution to energy labelling
► eceee 2017 Summer Study on energy efficiency, Gien, France

Wolfgang Eichhammer
Indicators to measure innovation and competitiveness in the field of Energy Efficiency and Renewables
► Lecture at the Chinese Academy of Sciences, Institute of Science and Development, Beijing, China

Energy markets and views on the synergies between renewable energy and energy efficiency
► COP23, IRENA Event, Renewable Energy and Energy Efficiency Synergies, Bonn

Development of new facility on multiple benefits of energy efficiency for capacity building
► ECEEE Seminar on Multiple Benefits for Energy Efficiency, Stockholm, Sweden

Rainer Elsland
Netzentwicklungsplan Strom – Stromnachfrage, Regionalisierung und Implikationen für die Übertragungsaufgabe in Deutschland
► 12. ETP-Konferenz (Euroforum), Stuttgart

Die Rolle der Photovoltaik im Zeichen der Energiewende
► Wissenschaftsforum 2017 an der Wilhelm Büchner Hochschule, Darmstadt

Lorenz Erdmann
Zukunftspotenziale für Offene Werkstätten
► Werkstätten des Wandels. Wie in FabLabs, Makerspaces und Repair Cafés Innovationen entstehen, Berlin

Living Labs in Deutschland: Roadmapping und Diskussion von Handlungsoptionen
► Strategie Workshop: Living Labs in Deutschland, Frankfurt/Main

Zukünfte der Eigenarbeit
► 30 Jahre Haus der Eigenarbeit, Munich

Tobias Fleiter
Renewable heating and cooling potentials and breakthrough requirements
► Renewables Networking Platform – Kick-off Event: Annual high-level experts conference, Brussels, Belgium

Where are we today in renewable heating and cooling and what challenges remain?
► EU Sustainable Energy Week, Brussels, Belgium

Portfolio of mitigation options – Defining a common ground for assessments
► 2nd Workshop on Policy Design for a Climate-Friendly Materials Sector, Berlin

Michael Friedewald
Seven types of privacy: A taxonomy taking into account impacts of emerging sciences and technologies
► 10th Conference: Computer, Privacy and Data Protection, CPDP 2017, Brussels, Belgium

Data protection and privacy impact assessments: Opportunities, Barriers, Implementation
► 3rd European Technology Assessment Conference, Cork, Ireland

Societal and economic challenges in the era of big data
► CEPE/ETHICOM Conference 2017: Values in Emerging Science and Technology, Turin, Italy

Benjamin Fries
EU product policy and consumer purchase decisions – empirical evidence from eight EU member states
► eceee Summer Study, Hyères, France

Rainer Frietsch
Science and Technology Expansion in China – Effects for East-Asia and the World
► Conference: Asia – Transition of a World Region, Hamburg

The Impact of Fraunhofer on the German Innovation System
► Atlanta Conference on Science and Innovation Policy, Atlanta, USA

International Science Collaborations – Facts and Fairy Tales
► Workshop: STI in the era of uncertainty, Singapore

Rainer Frietsch and Peter Neuhäusler
Patenting Computer-Implemented Inventions – Current Legal Situation and Economic Implications
► Atlanta Conference on Science and Innovation Policy, Atlanta, USA

Simon Funke
A techno-economic analysis of fast charging needs in Germany for different ranges of battery electric vehicles
► European Electric Vehicle Congress (EEVC), Geneva, Switzerland

Mileage electrification potential of different electric vehicles in Germany
► European Electric Vehicle Congress (EEVC), Geneva, Switzerland

Joachim Globisch
Consumers’ Evaluation of Public Charging Infrastructure for Electric Vehicles
► Energy7, Manchester, Great Britain

Till Gnann
Market diffusion of electric vehicles in Germany
► Presentation at the workshop Electro Mobility in Northwestern Germany – Experiences and Perspectives, Delmenhorst

Potenziale und Finanzierungsbedarf von Hybrid-Oberleitungs-LKW
► Vortrag bei der Konferenz Verkehrsökonomik und -politik, Berlin

Elektromobilität – Segen oder Fluch?
► Vortrag auf den Personalversammlungen des Präsidiums Technik, Logistik, Service der Polizei Baden-Württemberg, Stuttgart, Karlsruhe

Michael Haendel
Einfluss von Wärmepumpen auf den Investitionsbedarf in Niederspannungsnetzen
► IEWT 2017, Vienna, Austria

Stephanie Heitel
Application of experience curves in the ASTRA transport model
► REFLEX Expert Workshop: Technological Learning in the Energy Sector, Karlsruhe

Anne Held
Do mature RES-E technologies still need dedicated support towards 2030?
► Online Debate: Do mature RES-E technologies still need dedicated support towards 2030? Florence School of Regulation, Florence, Italy

Energy integration across sectors – Experimental game
► Plenary Meeting Concerted Action Renewable Energy Sources Directive (CA-RES), Zagreb, Croatia

Patricia Helmich
Technology cycles and their differentiation based on text mining approaches
► Science, Technology and Innovation indicators STI 2017, Paris, France

Andrea Herbst
Benchmarking the EU reference scenario 2016: An alternative bottom-up analysis of long-term energy consumption in Europe
► eceee 2017 Summer Study on energy efficiency, Gien, France

Setting the scene: Glass and Ceramics Roundtable
► Short presentation at the Finance for innovation: Towards the ETS-Innovation Fund, Brussels, Belgium

Nils Heyen
Quantified Self as Personal (Citizen) Science
► Conference: Critical Studies of Citizen Science in Biomedical Research, London, Great Britain

mHealth 2030: Wie sieht die Zukunft der digitalen Selbst- und Gesundheitsvermessung aus?
► Kongress Betriebliches Gesundheitsmanagement, Düsseldorf

Thomas Hillenbrand
Transitionswege für Wasserinfrastruktursysteme
► Erster DWA Forschungstag Wasser, Berlin

Strategien und Maßnahmen zur Verminderung des Eintrags von Spurenstoffen in die Gewässer
► Symposium: Spurenstoffe in den Gewässern des Hessischen Rieds und Strategien der Eliminierung, Frankfurt/Main

PRESENTATIONS

Leitfaden zum DWA-Arbeitsblatt A-272: Neuartige Sanitärsysteme
► Seminar: Abwasserwirtschaft im ländlichen Raum, ÖWAV, Universität für Bodenkultur Vienna, Vienna, Austria

Claudia Hohmann
Sustainability assessment of new technologies in WaKap
► Concepts for sustainable desalination and arsenic removal in Vietnam, Karlsruhe

Djerdj Horvat
Strategisches Kompetenzmanagement als Voraussetzung der Wandlungsfähigkeit
► Kompetenz als Treiber von Innovation in KMU, Hochschule Fresenius, Munich

System Dynamics Modelling of the European Demand for Bio-based Plastics
► XVII International Scientific Conference on Industrial Systems (IS'17), Novi Sad, Serbia

So identifizieren Sie Ihre Innovationspotentiale
► Innovation in Kooperation, Baden-Baden

Bärbel Hüsing
Scenarios for microbiome R&D and needs for action – results from the PROGRESS project
► OECD International Workshop: Personalised Nutrition for Better Health – Targeting the Microbiome, Brussels, Belgium

Bärbel Hüsing and Sven Wydra
Value chains for biotechnological products: Currents status and future scenarios
► Meeting of the OECD Working Party on Biotechnology, Nanotechnology and Converging Technologies, Paris, France

Murat Karaboga
Die Rolle von Überzeugungen im Aushandlungsprozess zwischen EU-Kommission, Parlament und Ministerrat am Beispiel der EU-Datenschutz-Grundverordnung

► 10. Jahrestagung des Forum Junge Staats-, Verwaltungs- und Policy-Forschung (FoJuS): Coping with Ambiguity – Politik und Verwaltung in der Machbarkeitsfalle?, Universität Potsdam

Nicht-individualistische Privatheitsüberzeugungen in den Auseinandersetzungen um die EU-DSGVO – Wo sind sie zu finden und wer setzte sich für diese ein?
► Interdisziplinäre Tagung: Digitalität und Privatheit, Universität Passau

Simone Kimpeler
Creative – Innovative – Digital. Cultural and Creative Industries in Germany
► Zukunft ist ein kreatives Europa – internationale Ansätze für die Kultur- und Kreativwirtschaft, Initiative Kultur- & Kreativwirtschaft der Bundesregierung, Berlin

Societies in 2100 – Challenges at global, national, and regional level
► HORASIS Global Meeting 2017: Building Togetherness, Cascais, Portugal

Transforming the Future – Comments on the New Futures Literacy Framework
► Jubiläumstagung Netzwerk Zukunftsforschung, Berlin

Anna-Lena Klingler
Impacts of a forecast-based operation strategy for grid-connected PV storage systems on profitability and the energy system
► eceee 2017 Summer Study on energy efficiency, Gien, France

Where are the electricity load hot spots in 2035? A load curve analysis considering demographic and technological changes
► EEM 2017, Dresden

Marian Klobasa
Die Netzentgeltsystematik für Strom – Status Quo und zukünftige Herausforderungen
► AG Regulierung der Plattform Energienetze beim BMWi, Berlin

Blockchain oder Flopchain – Wie sieht die Blockchain-Gesellschaft 2050 aus?
► Fokus: Zukunft. Unser Leben 2050, Vortrags- und Diskussionsrunde des Lehrstuhls für Innovations- und TechnologieManagement am KIT, der EnBW Energie Baden-Württemberg AG und des Fraunhofer-Instituts für System- und Innovationsforschung ISI, Karlsruhe

Erlösmöglichkeiten in der Direktvermarktung: Auswirkungen negativer Preise und zusätzlicher Vermarktungsoptionen
► EEG-Erfahrungsbericht – Fachgespräch zur Direktvermarktung, Berlin

Knut Koschatzky
A theoretical view on public-private partnerships in research and innovation in Germany
► 2017 University-Industry Engagement Conference, Adelaide, Australia

City of the Future – Implications for Urban Innovation Systems
► Pujiang Innovation Forum – 2017 International Science, Technology and Innovation Think Tank Forum, Shanghai, China

The research Campus Approach to PPP's: New Findings in Connecting Companies for Innovation
► ZAL Innovation Days, Hamburg

Michael Krail
Ökologische, ökonomische und gesellschaftliche Wirkungen des automatisierten und vernetzten Fahrens
► BMWi/BMBF Fachtagung Automatisiertes und vernetztes Fahren, Berlin

Energie- und Treibhausgaswirkungen des automatisierten und vernetzten Fahrens im Straßenverkehr
► Jahreskonferenz der Mobilitäts- und Kraftstoffstrategie (MKS) des BMVI, Berlin

The Mobility and Fuels Strategy (MFS) of the German Government
► 1st Conference of the Mobility and Fuels Strategy (MFS) for China, Beijing, China

Henning Kroll
Tailoring support to develop regional capacity building for regions
► Smart Regions 2.0, Helsinki, Finland

Leveraging Technology für Frugal Innovation
► InnoFrugal 2017, Helsinki, Finland

Support Measures for Innovation-Driven Development in Germany
► Innovation Beijing 2017, Beijing, China

Marianne Kulicke
Evaluation der Nationalen Forschungsstrategie BioÖkonomie 2030 – Ansatz zur Evaluation einer missionsorientierten Fördermaßnahme
► Frühjahrstreffen des Arbeitskreises Forschungs-, Technologie- und Innovationspolitik der DeGEval., Vienna, Austria

Sabine Langkau
How will emerging technologies influence future raw material demand? A look-out to 2035
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► Zukunftsforum 2017, DHBW Villingen-Schwenningen

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► Eu-SPRI Annual Conference: The Future of STI – The Future of STI Policy: New practices and models of research and innovation as a challenge for STI policy, Vienna, Austria

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► eceee 2017 Summer Study on energy efficiency, Gien, France

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► BBH KWK Workshop 2017, Meisenheim

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► European University Institute, Workshop EU ETS and its interaction with other climate and energy policies, Florence, Italy

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► Innovation Workshop Exploitation of Neuromorphic Computing Technologies, Brussels, Belgium

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► European Forum for Studies of Policies for Research and Innovation (Eu-SPRI) Annual Conference, Vienna, Austria

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► aceee 2017 industrial summer study, Denver, USA

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► 7th International Conference on Benchmarking and Performance Assessment, Vienna, Austria

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► Annual Conference of the European Association of Environmental and Resource Economists, European Association of Environmental and Resource Economists (EAERE), Athens, Greece

Persistence of the effects of providing feedback alongside smart metering devices on household electricity demand
► International Association of Energy Economists Annual Meetings (IAEE), Singapore

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► Jahrestagung, Ausschuss für Umwelt- und Ressourcenökonomie (AURO) im Verein für Socialpolitik, Berlin

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► German-Uzbek Innovation Dialogue – Building the Future for Innovative Knowledge Society, Tashkent, Uzbekistan

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► BMUB Klimaschutzfragen: Wissenschaftliche Analysen zu aktuellen klimapolitischen Fragen
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► ETS-Modelle: Modellierung des Emissionshandels im Kontext europäischer energie- und klimapolitischer Maßnahmen: Markt und Machbarkeitsstudie für ETS-spezifische Modelle
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► ETS-VKK: Modellierung des Emissionshandels im Kontext europäischer energie- und klimapolitischer Maßnahmen: Entwicklung von ETS-spezifischen Vermeidungskostenkurven
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► LowCarbonEU: Low-Carbon Europe: Entwicklung ambitionierter Klimaschutzszenarien unter Berücksichtigung von Energieversorgungssicherheit, Nachhaltigkeit und Wettbewerbsfähigkeit
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► Progress V: Technical assistance in realisation of the 2018 report on renewable energy
Mario Ragwitz

► NL Review 2017: 2017 review of Dutch renewable energy tariffs SDE+ 2018
Mario Ragwitz

► Lux 2030: Scientific advice on the 2030 energy and climate strategy of Luxemburg and assistance on drafting the national integrated energy and climate plan for the period 2021 to 2030 for the implementation of the energy union
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► Grundsatzstudie EE: Grundsatzfragen der Energieeffizienz und wissenschaftliche Begleitung der Umsetzung des Nationalen Aktionsplans Energieeffizienz unter besonderer Berücksichtigung von Stromverbrauchsentwicklung und -maßnahmen (Grundsatzstudie Energieeffizienz)
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• UBA Exergie: Exergie und Wirtschaft
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• Bosch-NoEnergyWaste@Production: Unterstützung im Projekt No Energy Waste @ Production!
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• LEEN 100: Lernende Energieeffizienz-Netzwerke – Anschub auf dem Weg zu 100 und mehr Netzwerken; Teilprojekt A – Schwerpunkte: Diffusions- und Finanzierungsstrategien, Akteureinbindung, Wirksamkeitsmessung und Netzwerkgenerierung
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• DiffusionEE: Modellierung individueller Entscheidungsprozesse und des Einflusses von Intermediären bei der Diffusion von Energieeffizienzmaßnahmen und Erneuerbaren Energien im Gebäudebereich
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• UBA Sektorkopplung Recht: Integration erneuerbarer Energien durch Sektorkopplung, Teilvorhaben 1: Effiziente Ausgestaltung der Sektorkopplung Strom/Wärme und Strom/Verkehr
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• BMWi-Interkonnektoren: Ziele, Anreize und Hemmnisse für den grenzüberschreitenden Ausbau der Stromnetze
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• HRE: Heat Roadmap Europe: 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
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• BW Klimaschutz: Energie- und Klimaschutzziele 2030
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• DG CL Industry Innovations2050: Industrial Innovation and Decarbonising the EU industry: a 2050 and beyond horizon
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• FIS WLK autonomes Fahren: Verkehrs- und Umweltwirkungen automatisierten und vernetzten Fahrens im Straßenverkehr
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• EnergiestiftungBW Lastversch.: Bewertung des Lastverschiebepotenzials von Elektrofahrzeugen in Deutschland unter Berücksichtigung differenzierter Haltegruppen und Ladeinfrastrukturen im Vergleich zu anderen flexiblen Verbrauchern
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• BMWi EnVKV-Novelle-PKW: 1-09-17 Novellierung der PKW-EnVKV
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• BMWi-Monitoring Netzwerk: Monitoring der Initiative Energieeffizienz-Netzwerke
Clemens Rohde

• BMUB-Energiekennzahlen: Aufstellung und Anwendung von Energiekennzahlen als Beitrag zur Steigerung der Energieeffizienz in Unternehmen sowie zum Klimaschutz
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• DG Ener – EnEff Invest: Delivering informed investment decisions for energy efficiency investments through accessible data, standardisation procedures and benchmarking of performance also supporting the Smart Finance for Smart Buildings Initiative
Clemens Rohde

• EE Facility: Energy Efficient Products Facility
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

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

• BMUB-Aktionsprogramm Klimaschutz: Umsetzung Aktionsprogramm Klimaschutz 2020 – Begleitung der Umsetzung der Maßnahmen des Aktionsprogramms
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• HA-Klimaschutz: 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
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• BMWi Digitalisierung Gebäude: Digitalisierung im Gebäubebereich
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• BMWi Evaluation Abwärme: Monitoring Förderprogramm Abwärme
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• BMWi Industrieinnovation: Studie zu marktverfügbaren Innovationen der Industrie
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• ENavi – Kopernikus: Kopernikus-Projekte für die Energiewende – Themenfeld 4: Systemintegration und Vernetzung der Energieversorgung
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• TF Energiewende: Technologien für die Energiewende: Status und Perspektiven, Innovations- und Marktpotentiale – eine multikriterielle vergleichende Technologieanalyse und -bewertung
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• UBA sektorübergreifend: Integration erneuerbarer Energien durch Sektorkopplung, Teilvorhaben 2: Analyse zu technischen Sektorkopplungsoptionen
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• eWayBW: Feldversuch zur Erprobung elektrischer Antriebe bei schweren Nutzfahrzeugen auf Bundesfernstraßen in Baden-Württemberg
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• EnBW Markthochlauf 2030: Aktualisierung Markthochlaufszenarien für Elektrofahrzeuge bis 2030
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• VDM Workshop Elektromobilität: Durchführung eines Inhouse-Workshops Elektromobilität
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• BGH Workshop Elektromobilität: Durchführung eines Strategieworkshops Elektromobilität
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• Wasserstofftankstellen: Begleitforschung 50-Tankstellen – Programm im Rahmen des Nationalen Innovationsprogramms Wasserstoff- und Brennstoffzellentechnologie
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• Helmholtz Energieszenarien
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• INNOLAB: LivingLabs in Green Economy: realweltliche Innovationsräume für Nutzerintegration und Nachhaltigkeit
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• Biokompass: Kommunikation und Partizipation für die gesellschaftliche Transformation zu Bioökonomie
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• KKW Monitoring: Stand und Perspektiven der Kultur- und Kreativwirtschaft in Deutschland: Monitoring zu ausgewählten wirtschaftlichen Eckdaten
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• i³-Food: Process integration for rapid implementation of sustainable innovative food processing
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• BASF Foresight KTC: Foresight Key Technology Capabilities
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• Fut-Business 2: Future Business im VDMA – Zukunftsbilder des Maschinenbaus
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• KAS Global Future Survey: Global Future Survey – Konrad-Adenauer-Stiftung
Elna Schirrmeister

• JERRI: Joining Efforts for Responsible Research and Innovation
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• Bertelsmann Asien-Szenarien II: Deutsch-Asiatische Innovationsszenarien – Wie wird das deutsche Innovationssystem zukünftig durch Einflüsse aus Asien beeinflusst werden?
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• CASI: Public Participation in Developing a Common Framework for Assessment and Management of Sustainable Innovation
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• CIMULACT: Citizen and Multi-actor Consultation on Horizon2020
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• DAKIS: Digital Agricultural Knowledge and Information Systems
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• FuFoCo: Sharing Economy in der Lebensmittelversorgung
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• INCOBRA: Increasing International Science, Technology and Innovation Cooperation between Brazil and the European Union
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• Konfliktszenarien: USA-China-Konfliktszenarien – Bertelsmann Stiftung
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• TRIP-Portal: Continuation of the Transport Research and Innovation Portal (TRIP)
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• UBA-Methodenkonvention 3.0: Methodenkonvention 3.0 – Weiterentwicklung und Erweiterung der Methodenkonvention zur Schätzung von Umweltkosten
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• UBA sektorübergreifend: Integration erneuerbarer Energien durch Sektorkopplung, Teilvorhaben 2: Analyse zu technischen Sektorkopplungsoptionen
Claus Doll

• LowCarb RFC: Klimafreundlicher Güterverkehr in Europa
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• RohPolRess: Entwicklung von Politikempfehlungen für die Weiterentwicklung und Ausgestaltung von strategischen Ansätzen einer nachhaltigen und effizienten Rohstoffgewinnung und -nutzung
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• Umweltinnovationen: Umweltinnovationen und ihre Diffusion als Treiber der Green Economy
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• TITUS: Implikationen des wirtschaftlichen Aufstieges der Schwellenländer für die globalen Technologischen Innovationssysteme bei Umwelttechnologien
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• Digi und Öko: Digitalisierung ökologisch nachhaltig nutzbar machen
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• Spurenstoffstrategie: Organisation, Durchführung und Auswertung eines Stakeholderdialogs zur deutschen Spurenstoffstrategie
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• i.WET Demo Lünen: Innovative Wasser – Energie Transition (i.WET): Demonstrationsvorhaben in Lünen
Thomas Hillenbrand

• Hessisches Ried: Spurenstoffstrategie für das Hessische Ried
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• CS2-ED-TA-T5.2: CS2-ED-WP5.2 Big impact technology pathways
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• 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

• MKS LNG Schifffahrt: MKS Studie über die Marktreife von Erdgasmotoren in der Binnen- und Seeschifffahrt
Jonathan Köhler

• MKS IATA 2050: MKS IA-TA-THG-Emissionsreduktionsziele für den globalen Luftverkehr im Kontext der deutschen und europäischen Luftverkehrsentwicklung unter besonderer Berücksichtigung alternativer Kraftstoffe und Antriebe
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• TRIMODE: Services contract for the development of a Europe-wide transport model, technology watch data and scenarios
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• Mobilitäts- und Kraftstoffstrategie: Maßnahmen zur Steigerung des Anteils des Schienenpersonenfernverkehrs in der Fläche
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• Mobilitäts- und Kraftstoffstrategie: Ausbau Elektrifizierung auf Hauptstrecken
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• Mobilitäts- und Kraftstoffstrategie: Nachtragsangebot zu MKS-Strategie: Prognosenetz
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• Mobilitäts- und Kraftstoffstrategie: Integrierte Maßnahmen zur Verlagerung von Straßengüterverkehren auf den Kombinierten Verkehr und den Schienengüterverkehr
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• Mobilitäts- und Kraftstoffstrategie: Beiträge zur Digitalisierung und Automatisierung der Sicherungstechnik als Teil der Eisenbahninfrastruktur
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• Mobilitäts- und Kraftstoffstrategie 2: Unterstützung des BMVI bei der Weiterentwicklung der Mobilitäts- und Kraftstoffstrategie (MKS)
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• Mobilitäts- und Kraftstoffstrategie: Wissenschaftliche Begleitung der MKS China in der Metropolregion Jing-Jin-Ji
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• Mobilitäts- und Kraftstoffstrategie: Bessere Ausnutzung der Fahrzeug(-zuladungs)kapazitäten
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• Mobilitäts- und Kraftstoffstrategie: Finanzielle Anreize für die Dekarbonisierung des Verkehrs
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• Mobilitäts- und Kraftstoffstrategie: Verlagerungswirkungen und Umwelteffekte veränderter Mobilitätskonzepte im Personenverkehr
Michael Krail

• Mobilitäts- und Kraftstoffstrategie: Effizienzpotenziale bei PKW
Michael Krail

• 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

• FemTR: a business case to increase female employment in transport – FWC MOVE/ENER/SRD/2016-498 LOT 5
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• InnoA2: Innovative Abwärmenutzung durch Wärmeverteilung über die Kanalisation
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• INTEGRIS: Gebündelte Infrastrukturplanungen und -zulassungen und integrierter Umbau von regionalen Versorgungssystemen – Herausforderungen für Umwelt- und Nachhaltigkeitsprüfungen
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• Minder² – Phase 1: Pilotprojekt zur Minderung des Eintrags von Röntgenkontrastmitteln in die Umwelt – Maßnahmenkombinationen
Jutta Niederste-Hollenberg

• r4-INTRA: r4 – Wirtschaftsstrategische Rohstoffe, Verbundvorhaben: r4 INTRA – r4 Integrations- und Transferprojekt – Teilvorhaben 2: Operative Projektkoordination und Abschätzung der Ressourcen-effizienzpotenziale
Katrin Ostertag

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

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

• Politikszenarios – ProgRess: Analyse und Bewertung von Politikmaßnahmen und ökonomischen Instrumenten des Ressourcenschutzes für die Weiterentwicklung von ProgRess
Katrin Ostertag

• EFI Nachhaltigkeitsindikatoren: Fachlos 1: Ful-Indikatoren zu Nachhaltigkeit und Klimaschutz: Forschung, Entwicklung, Kommerzialisierung und Wertschöpfung
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• EFI Weiche Innovationen: Fachlos 2: Organisatorische und soziale Innovationen sowie gesellschaftliche Akzeptanz im Kontext von Nachhaltigkeit
Katrin Ostertag

• Gesundheit und Ressourcen: Ressourcenschonung im Gesundheitssektor – Erschließung von Synergien zwischen den Politikfeldern Ressourcenschonung und Gesundheit
Katrin Ostertag

• 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

• NRW Umweltcluster III: Bereitstellung eines Managements für das Kompetenznetzwerk Umweltwirtschaft.NRW – Durchführung des Innovationsradars
Christian Sartorius

• Beschäftigung EE Bayern: Beschäftigungseffekte der Energiewende in Bayern
Luisa Sievers

• HBS Besch.effekte nh Mobilität: Analyse der Beschäftigungseffekte nachhaltiger Mobilität in Deutschland bis 2035
Luisa Sievers

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• ECI-DKI-Blei Brass EU: Dynamic Material Flow Model of Lead Containing Copper Alloys in Europe (EU28)
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 (EMFIS)
Luis Tercero

• Cu-Modell VII: Development of a global copper flow model – Phase VII
Luis Tercero

• ECI-ICA Brass Global: Development of a Global Dynamic Material Flow Model of Lead Contained in Copper Alloys
Luis Tercero

• Stoffströme, Märkte und Umwelt: WP 11 Stoffströme, Märkte und Umwelt
Luis Tercero

• HAPPI 2: HAPPI – Kleinwasserkraftwerke: Bewertung des Klimaschutzpotenzials und Verbesserung durch Intelligente Technologien
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• ReAs: Reduzierung der Gewässerbelastungen mit Rückständen von Arzneistoffen in ausgewählten Pilotgebieten (ReAs)
Felix Tettenborn

• m:ci Morgenstadt Phase II
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• 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

• DFG-SINCERE: SINCERE (Sino-European Circular Economy and Resource Efficiency) Societal Challenges – Green Economy and Population Change Call for European-Chinese joint research projects
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• NaWiKo: Wissenschaftliche Koordination des Förderschwerpunktes Nachhaltiges Wirtschaften: Synthese und Transferökonomie
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• EuDEco: Modelling the European Data Economy
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• e-SIDES: Ethical and Societal Implications of Data Sciences
Daniel Bachlechner

• FET Traces: Tracing impacts of the FET programme
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• 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 Konkurrenzaspähung in Deutschland und Europa
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• SecurePLUGandWORK: intelligente Inbetriebnahme von verketteten Maschinen und Anlagen
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• WB-NAPSE: Wissenschaftliche Begleitforschung des nationalen Aktionsplans für Menschen mit seltenen Erkrankungen
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• STOA-AT: STOA Assistive Technologies
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• EvaSIS: Evaluation der Wirkungen der Pflegedokumentation
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• Biobased R&I: Support to Research and Innovation Policy for Bio-based Products
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• DSFA: Datenschutz-Folgenabschätzungen für die betriebliche und behördliche Praxis
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• Privacy Forum II: Forum Privatheit und selbstbestimmtes Leben in der digitalen Welt
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• Patient Science: eine bürgerwissenschaftliche Studie
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• Studie zur Evaluierung von Innovationen im Gesundheitswesen
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• 10 Jahre Hightech-Strategie der Bundesregierung: Bilanz und Perspektive
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• SMART-map: RoadMAPs to Societal Mobilisation for the Advancement of Responsible Industrial Technologies
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• STOA E-Democracy II: Technology options and systems to strengthen participatory and direct democracy
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• FRAME: Fraunhofer Microelectronics Innovation Enhancement – Innovationsunterstützende Begleitung der Forschungsfabrik Mikroelektronik Deutschland (FMD) – Gründungsprojekt des Fraunhofer-Verbunds Innovationsforschung
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• CECM: Centre for New Methods in Computational Diagnostics and Personalised Therapy
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• Graphene Core 1: Graphene-based disruptive technologies
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• XS2-I4MS: Access to I4MS
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• Darwin: Beschleunigte Evolution zur Bereitstellung optimierter und neuartiger Enzyme
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• INTEGRAM: Integrierte Forschung: Eine kritische Analyse und wissenschaftspraktische Vermittlung am Beispiel des Forschungsfeldes Mensch-Technik-Interaktion
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• BEMA: Begleitmaßnahme Batterie 2020
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• Industrie 4.0
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• Bio-Monitoring: Ermittlung wirtschaftlicher Kennzahlen und Indikatoren für ein Monitoring des Vorranschreitens der Bioökonomie
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• Transformation Bio: Bioökonomie als gesellschaftlicher Wandel, Modul 2 (1): Transformation Bio – Reflexive Governance und dynamische Innovationssysteme am Beispiel der energetischen und stofflichen Nutzung biogener Rohstoffe
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• Eval AWS FFG: Evaluierung der Förderungsgesellschaften Austria Wirtschaftsservice GmbH (AWS) und Forschungsförderungsgesellschaft mbH (FFG)
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• ZIA Diversity: Diversity-Zukunftsperspektiven der Immobilienwirtschaft – Sekundäranalyse
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• EnArgus II – CC-P: EnArgus2.0 – Zentrales Informationssystem Energieforschungsförderung
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• ZVEI Zukunft: Digitalisierung der Wirtschaft – Innovationschancen und Innovationshemmnisse für die Elektroindustrie
Rainer Frietsch

• EFI PUB 2017: Ergebnisse von öffentlicher und privater Forschung: Publikationen
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• Zusatzmod. Durchführung Studie: Zusatzmodul – Durchführung einer Studie zur Bewertung des Beitrags von Fraunhofer zum deutschen Innovationssystem
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• EFI-Studie SäkuläreS FL3: Schwerpunktstudie Langfristentwicklungen von Innovation und Produktivität – Säkulare Stagnation?
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• Innovationsindikator 2015-2017
Rainer Frietsch

• EFI Zusatzmodule 2016: Fortentwicklung der EFI-Indikatorik und optionale Untersuchungen: Fachlose 1, 5 und 7
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• FuE-Quote BIP: Studie Schrittweise Erhöhung der FuE-Quote auf bis zu 3,5% des BIP – Instrumente und Auswirkungen auf volkswirtschaftliche Kennzahlen
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• DC Plattform Innovation: Beratungsleistungen im Rahmen der Mitgliedschaft in der Expertengruppe der Deutsch-Chinesischen Plattform Innovation
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• Data4Impact: Big DATA approaches FOR improved monitoring of research and innovation performance and assessment of the societal IMPACT in the Health, Demographic Change and Wellbeing Societal Challenge
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• GC KETs: Collection and analysis of private R&D investment and patent data in different sectors, thematic areas and societal challenges
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• KB-Studie 2017: Kodierung internationaler Institutionen – eine Machbarkeitsstudie anhand von ausgewählten Ländern
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• StraKosphere: VP: Strategisches Kompetenzmanagement in nichtforschungsintensiven KMU des Verarbeitenden Gewerbes (StraKosphere) – TP: Kompetenzbedarfe aus der betrieblichen Wettbewerbs- und Innovationsstrategie
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• DB InnoAward2018: Begleitung des DB Supplier Innovation Awards 2018
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• Umweltinnovationen: Umweltinnovationen und ihre Diffusion als Treiber der Green Economy
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• MCI Benchmark Tirol: Benchmark Digitalisierung Tiroler KMU
Angela Jäger

• China RG: Study on the Internationalization of science, technology and innovation: Strategy, Policy and Practice
Knut Koschatzky

• Strukturwandel: Strukturwandel durch Innovation
Knut Koschatzky

• StratFo BW 2017: Strategische Ausrichtung der wissenschaftlichen und industriellen Forschung in Baden-Württemberg
Knut Koschatzky

PROJECTS | VISITING RESEARCHERS

• Bertelsmann Frugal: Studie zur Entwicklung eines Potenzialindexes zu bedarfsorientierten Innovationen in Schwellenländern und Europa (inklusive bzw. frugale Innovationen)
Henning Kroll

• BIAST VI: Inter- and Trans-regional Collaboration in Germany and the European Union
Henning Kroll

• BIAST VII: The Implementation of Research and Innovation Policy in Germany and support with TFP Calculation
Henning Kroll

• Innovationsprofile China: Regionale Innovationsprofile in China: Innovationsbedingungen und Innovationstypen
Henning Kroll

• RIM Plus 2015-16: Regional Innovation Monitor 2015–2016
Henning Kroll

• RIS3 Serbien II: Expert support for Smart specialisation in Serbia – analysis of international competitiveness of a fast growing priority domain
Henning Kroll

• Frugal Innovations – CCP: Study on Frugal innovation and reengineering of traditional techniques
Henning Kroll

• RIS3 Serbien: Expert support for Mapping the S3 Potential in Serbia
Henning Kroll

• Green Finance-CC-Ü: 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

• BioÖkonomie2030-CCP: Evaluation Nationale Forschungsstrategie BioÖkonomie 2030
Marianne Kulicke

• Strukturanalyse BW: Strukturanalyse und Perspektiven des Wirtschaftsstandorts Baden-Württemberg im nationalen und internationalen Vergleich
Christian Lerch

• BW Dienstleistungen: Bedeutung der industrienahen Dienstleistungen in Baden-Württemberg unter besonderer Berücksichtigung der Digitalisierung
Christian Lerch

• 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

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

• PROGRESS P: Priorities for Addressing Opportunities and Gaps of Industrial Biotechnology for an efficient use of funding resources
Christian Lerch

• Produktivitätsparadoxon: Produktivitätsparadoxon im Maschinenbau
Christian Lerch

• Mittelstand 4.0: Mittelstand 4.0 – Kompetenzzentrum Stuttgart
Christian Lerch

• Digitale Geschäftsmodelle: Digitale Geschäftsmodelle: Sind unsere KMU bereit für den Wandel?
Christian Lerch

• LBG Eval: Evaluation LBG Career Center
Niclas Meyer

• EFI PAT 2016: Ergebnisse von öffentlicher und privater Forschung: Patente
Peter Neuhäusler

• EFI PAT 2017: Ergebnisse von öffentlicher und privater Forschung: Patente
Peter Neuhäusler

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

• Innovation-Course 2017: Innovation Course at Fraunhofer ISI 2017
Esther Schnabl

• MIP4: Erhebung des Innovationsverhaltens der Unternehmen in der produzierenden Industrie und in ausgewählten Dienstleistungssektoren in Deutschland
Torben Schubert

• BMUB Klimawandel: Begleitung und Weiterentwicklung des BMUB-Förderprogramms Maßnahmen zur Anpassung an den Klimawandel
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