

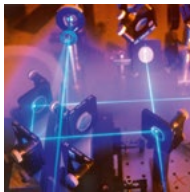


Rheinland-Pfalz

EXCEPTIONAL. RHINELAND-PALATINATE. THE CENTER OF INNOVATION.



CONTENTS



3 What makes Rhineland-Palatinate such an outstanding business location?

3 ... and why is it such an remarkable center of innovation?

7 What areas promise high potential in Rhineland-Palatinate – and why?

8 Why these six areas provide great opportunities ...

8 ... in the life sciences and the health economy

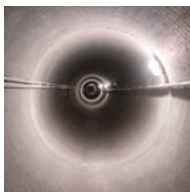
9 ... in energy and environmental technologies, resource efficiency

11 ... in the automobile and commercial vehicle industry

12 ... in information and communication, software systems

13 ... in the areas of materials and surfaces

15 ... and, in microsystems, sensor technologies and automation





DEAR READER

Welcome!

Rhineland-Palatinate is the right choice for you – for small and medium sized enterprises, for international corporations, and for scientists and students – whether choosing a location to live, to study, or to work. We make an effort to ensure people and companies have outstanding opportunities – those being here for some time and those arriving with fresh new ideas.

Together, we have established Rhineland-Palatinate as one of Europe's leading centers for innovation. Our economic, innovation, and research policies reflect the State Innovation Strategy – developed in collaboration with companies, universities, and research institutes. The strategy enables us to promote the areas we believe have the highest potential in our region. Turn the pages to learn why we selected these areas and which future markets we are addressing with you in mind.

We invite you to get to know us, meet our companies and scientists, and experience the many benefits of Rhineland-Palatinate.

Contact us, become a part of our success story !

Sincerely,

A handwritten signature in black ink, appearing to read 'Volker Wissing'.

DR. VOLKER WISSING

Minister of Economic Affairs, Transport,
Agriculture and Viniculture



You should know that, ...

99.7%

of all companies in Rhineland-Palatinate
are SMEs!

Thanks to their great flexibility
these companies react quickly to
global challenges.



»THE MAGNETIC ATTRACTION«

DR. ROLF SLATTER

As managing director of Sensitec, a leading high-tech company in the field of magneto resistive technology with 160 employees, Dr. Slatter is also the chairperson of the InnoMag innovation network.

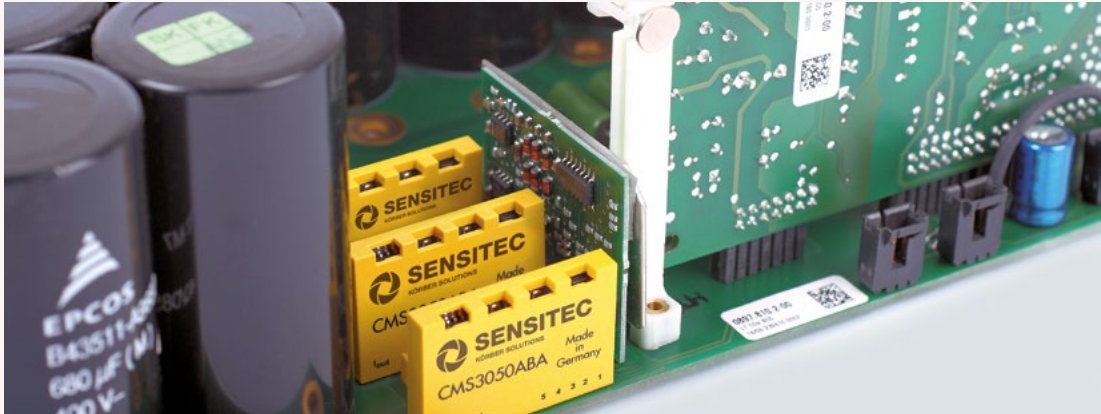


Dr. Slatter, you moved to Rhineland-Palatinate more than twenty years ago – with the intent not to stay. What keeps you here? Well, my wife is originally from Rhineland-Palatinate and is, in fact, quite proud of it and I can see why. I find the people are simply nice – particularly, of course, my wife. But, in all seriousness now: The state has some features that I really like, for example, the good educational opportunities available to people of all ages. The people here are friendly and down to earth, in both an industry and government context. Instead of listening to themselves talk, they prefer to take action.

Can you give us an example? Unbureaucratic and rapid assistance is the order of the day, especially, when it comes to SMEs. A short story illustrates the

point: The opening of a Sensitec facility here was actually the result of a coincidence. The original intent was only to purchase the machinery from the former IBM plant in Mainz. Then the company's founder, Karl-Heinz Lust was so impressed with the highly skilled, local work force that he decided to trust his gut feeling and buy a suitable site as well. A very big step for Sensitec – and, we are also very grateful for the support of the state of Rhineland-Palatinate in making everything go so well.

A gut decision for a business location – did that really pay off? Now years later, my answer is still, absolutely! I find the location hard to beat – for many reasons. One of these is the state promotes a very close cooperation between universities and businesses. At



"CMS3000 current sensors from Sensitec are dynamic, precise and compact. The sensors are used in servo controllers, electrical motor controls or for condition monitoring."

Sensitec, for example, we provide the universities in Mainz and Kaiserslautern with the most advanced machines and measuring technologies; this results in a higher quality research. In return, we get to meet highly talented young people and offer them employment – a real win-win-situation.

The government also encourages close cooperation between companies. Do you benefit from this, too? Yes, in all cases! Rhineland-Palatinate supports the expansion of our InnoMag network. For us in InnoMag – with very different perspectives and various priorities, application areas, and target groups – the world is a magnetic place. Together, we are able to respond

quickly and easily to new developments and establish consortia, etc. It is an idea that is catching on: meanwhile, we are hearing from companies in other countries that are expressing an interest in our network and want to join. Rhineland-Palatinate seems to exert a quasi-magnetic attraction of its own on all who bring something new to this field and want to jointly develop new applications – for the benefit of all!

One of the most complex projects in the history of space exploration: The Mars rover "Curiosity" launched from Cape Canaveral in November 2011. On board: miniaturized magneto resistive sensors from Sensitec. (NASA/JPL-Caltech)



WHAT MAKES RHINELAND-PALATINATE SUCH AN OUTSTANDING BUSINESS LOCATION?

1. Location: Rhineland-Palatinate is situated in Germany's **dynamic southwest**, just next door to France, Belgium, and Luxembourg. As part of Europe's Rhine-Main metropolitan region, the state is an exceptional location for all who seek to enter and conquer the (foreign) market.

2. Education: The state boasts **more than 40 research institutes and universities**, and a tuition-free first degree policy. The higher education and dual training system produces the skilled labor force and well qualified experts (*meisters*) that are the envy of the world.

3. Companies: The economy, mainly **driven by SMEs**, is a global leader in innovation and closely integrated with the research community. The mix of leading small and medium sized companies along with global leaders like BASF, Daim-

ler Trucks, and Boehringer Ingelheim and many hidden champions is truly unique.

4. Infrastructure: Rapid transportation – via air, land, and water – saves time and effort: Mainz is only 30 minutes away from the Frankfurt International Airport; we are connected to the European high-speed railway network, and the city is located on the banks of the Rhine River, the most important waterway in Europe.

5. Mentality: The people of Rhineland-Palatinate are known for their open-mindedness and the warm welcome given to others from around the world. Rhineland-Palatinate is a popular **holiday destination**. Germany's largest wine export region is also host to four UNESCO World Heritage Sites, which means there is much culture to enjoy.

... AND WHY IS IT SUCH A REMARKABLE CENTER OF INNOVATION?

First: Concentration.

World class quality is awaiting companies, scientists, research institutes, and job seekers in particularly promising fields. We provide this by focusing on areas where our competitive advantage is greatest and where we clearly have a unique selling position. Always alert to opportunities that arise with global megatrends, technological advances, and the latest market leaders, we like to refer to these as **high potential areas**.

Subsequently: Consistency.

Our research, technology, and innovation funding is administered by a single source and our high potential areas are supported with every resource available to us. And those are many:

- > We encourage and promote research and development in priority **infrastructure projects**.
- > We support ambitious **research and technology** projects.
- > We provide good support and opportunities to **innovative startups**.
- > We create **access** to the latest knowledge and cooperative opportunities for all companies.

Finally: Cooperation and networking.

Joint efforts undertaken in Rhineland-Palatinate are quite unique and exceptionally strong in their composition – in terms of innovative capacity and intensity of cooperation. Our clusters and networks bring universities, institutes, and companies together and, in so doing, deliberately cut across industry and state borders. Our innovation and technology centers in Kaiserslautern, Koblenz, Ludwigshafen, Mainz, and Trier provide networking, consulting, and infrastructure to innovative technology spinoffs and startups. Support to

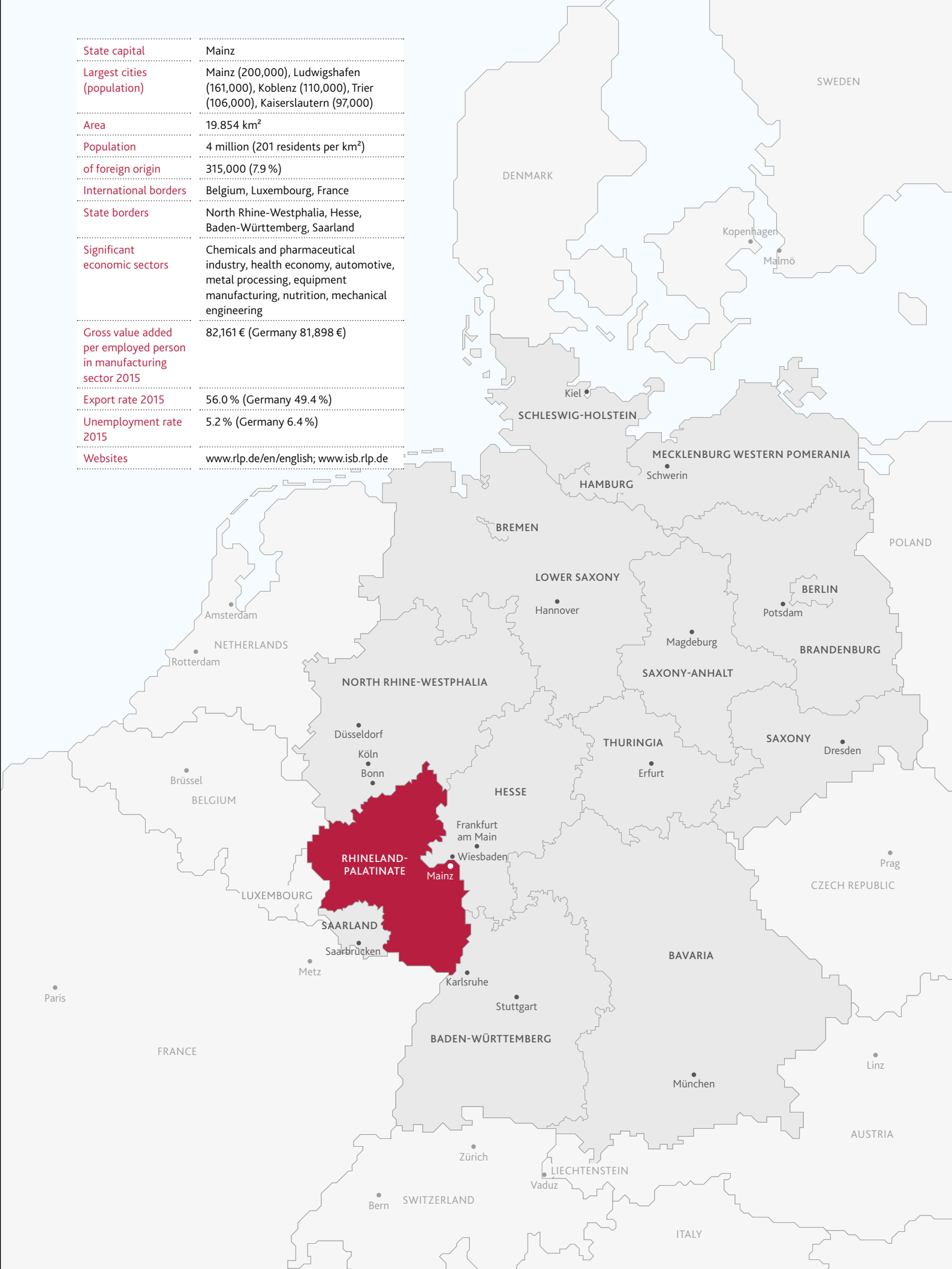
such infrastructure and cooperation is a top priority in our innovation strategy.

One thing in Rhineland-Palatinate is obvious: Government, business, and research communities respect and support each other and cooperate in the search for solutions. We welcome the opportunity to discuss an effective and prompt response to your concerns and questions – See contacts on page 16.

Levels of networking:

INITIATIVES	PLATFORMS	NETWORKS	CLUSTERS
<ul style="list-style-type: none"> ▶ Initial interaction of associations, scientific institutes, companies, and/or public institutions for the purpose of advancing common goals ▶ Regional exchanges, joint marketing of common specialty fields 	<ul style="list-style-type: none"> ▶ Interactive forums for actors from research, industry, and government ▶ The aim is to jointly develop innovative concepts, strategies, and knowledge transfer 	<ul style="list-style-type: none"> ▶ Informal, sometimes formalized, associations of producers, suppliers, research institutes, service providers, and public institutions ▶ Broad cooperation and supply relationships within certain value chains 	<ul style="list-style-type: none"> ▶ Formal associations (e.g. registered associations, businesses) with a strategic focus and professional cluster management ▶ Regional site that has extra-regional to international reach ▶ Centered on specific value chains in one field with exceptional economic strength
<p>Example:</p> <ul style="list-style-type: none"> ▶ Textiles and Fashion Initiative Southwest (TFiSW) 	<p>Example:</p> <ul style="list-style-type: none"> ▶ PharmaForum 	<p>Examples:</p> <ul style="list-style-type: none"> ▶ Ecoliance ▶ Rhineland-Palatinate Smart Factory Technology Initiative ▶ INNOMAG Innovation Platform for Magnetic Microsystems 	<p>Examples:</p> <ul style="list-style-type: none"> ▶ Leading Edge Cluster for Individualized Immune-Intervention (CI3) ▶ Commercial Vehicle Cluster Southwest (CVC)

State capital	Mainz
Largest cities (population)	Mainz (200,000), Ludwigshafen (161,000), Koblenz (110,000), Trier (106,000), Kaiserslautern (97,000)
Area	19.854 km ²
Population	4 million (201 residents per km ²)
of foreign origin	315,000 (7.9%)
International borders	Belgium, Luxembourg, France
State borders	North Rhine-Westphalia, Hesse, Baden-Württemberg, Saarland
Significant economic sectors	Chemicals and pharmaceutical industry, health economy, automotive, metal processing, equipment manufacturing, nutrition, mechanical engineering
Gross value added per employed person in manufacturing sector 2015	82,161 € (Germany 81,898 €)
Export rate 2015	56.0% (Germany 49.4%)
Unemployment rate 2015	5.2% (Germany 6.4%)
Websites	www.rlp.de/en/english ; www.isb.rlp.de





We are proud that, ...

every

7
th

employee in Rhineland-Palatinate
is in a high-tech job!
That puts us right at the top
of national rankings ...



»THE OUTSTANDING CONDITIONS«

PROF. KATALIN KARIKÓ,

Ph. D., head of mRNA-based Protein Replacement Program at BioNTech RNA pharmaceutical company in Mainz. Her previous employment includes 25 years on the faculty of the University of Pennsylvania in Philadelphia. Together with her team, she has demonstrated the use of nucleoside modified mRNA in protein replacement, which has created a new field of therapeutic treatment.



Prof. Karikó, you are an expert in one of today's most promising fields of pharmaceutical research and could have worked at one of the well-known American companies. Instead, you decided to come to Mainz. Why? In many ways, it would have been easier for me to stay in the USA, especially as I had to start all over once before, 30 years ago, when I moved with my husband and daughter from Hungary to the USA. I must admit, however, that I accepted the offer from BioNTech without even preparing myself for the move to Mainz – and I really didn't know much about the location.

What gave you such a strong motivation? The job description was an exact match with my own vision of how I wanted to advance my work, with a focus on applications and, it grants me a lot of flexibility. You see, the hopes and expectations that were once placed in classic genetic engineering rest today on mRNA therapy. It is safer and less expensive for patients because they build the necessary proteins themselves. Being able to make a contribution to helping people who suffer from cancer or a genetic defect is incredibly rewarding. That is what we have worked on so



BioNTech was founded in 2008
and its research headquarters is based in Mainz

hard for so long. Now we are able to apply our research results not only to serious diseases, but also to treating wounds and injured joints. We have achieved a great deal in a very short time at BioNTech and have already begun the preclinical studies. The framework conditions in Mainz are just ideal for this purpose.

Are you referring to the Science Alliance? Well, yes, that is a big part of it: the infrastructure and networks here are extremely helpful. We enjoy a close cooperation, as a member of the Ci3 leading edge cluster, with various universities and institutes like TRON, and it also helps to have the manufacturers represented – overall, it is really a great idea. It is a very conducive atmosphere for innovation and related applications.

Aside from your professional life: What was your first impression of Mainz? I can remember how much I enjoyed seeing all these people out there strolling along the Rhine River with their children or elderly relatives, or riding along on their bikes. In the beginning, I was a little uncomfortable seeing little six-year olds walking to school all alone, until I realized: It is

OK. They are safe. I love the fact that I can go for a jog at night – although, I might run faster if it was only a bit more dangerous. Of course, I think it is great that the Frankfurt airport is so close. It makes it so easy to visit my family and friends.

You probably have a lot of visitors too. Do they also like it here? Yes, especially because people are so friendly and welcoming. A colleague of mine, Dr. Muramatsu, with whom I did research for many years in the States came and decided to stay! He moved from Japan to the States 15 years ago. It is nice that we can now continue our work together here in Mainz. He had not expected to find a Kendō group here – and now, the group is delighted to have a real native of Japan practicing this kind of martial art with them.



BioNTech is a leader
in the development
of personalized immuno-
therapies against cancer
and other diseases

WHAT AREAS PROMISE HIGH POTENTIAL IN RHINELAND-PALATINATE – AND WHY?

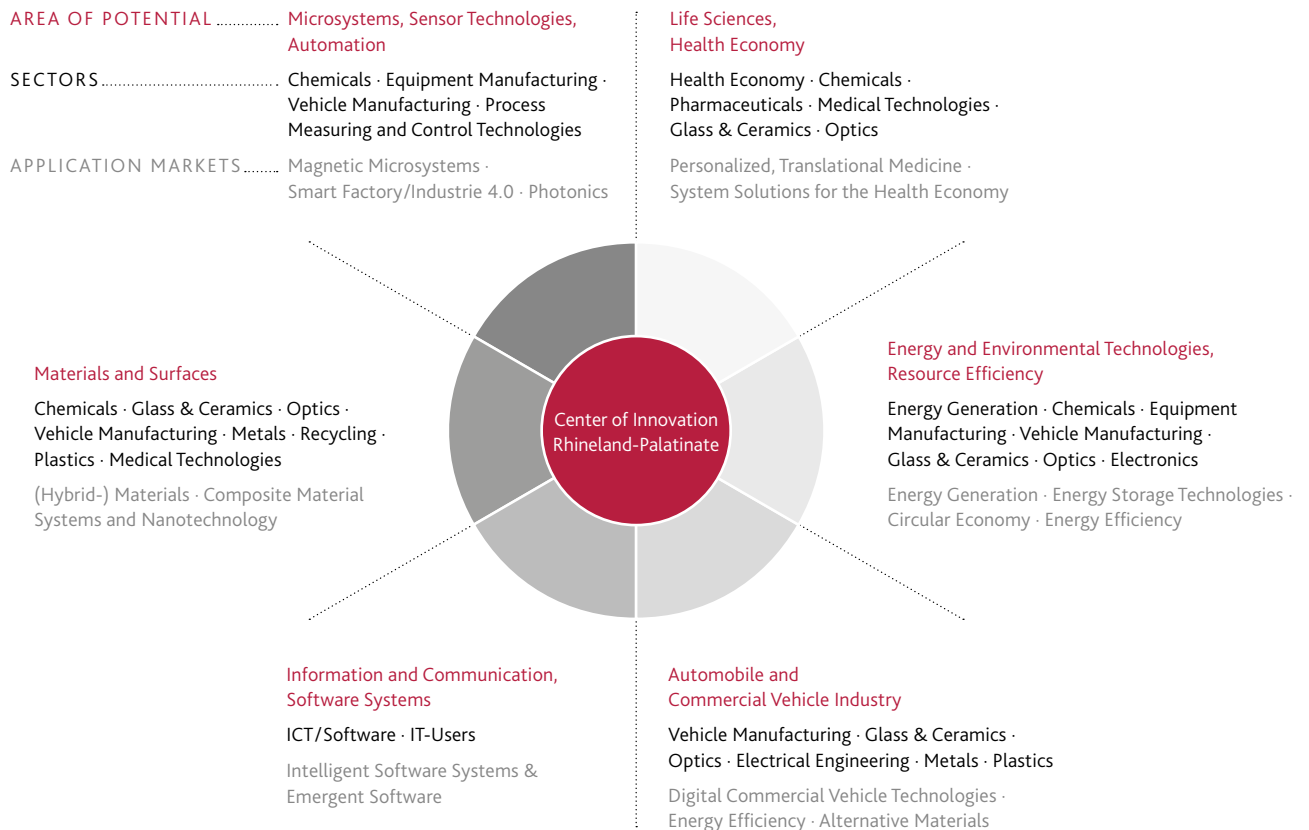
Rhineland-Palatinate focuses on high potential economic sectors and areas of innovation. Our goal is to be a global leader in existing as well as in future markets. Therefore we carefully monitor new and existing potentials and how they are developing in Rhineland-Palatinate.

Our innovation strategy answers two key questions: "How can we best meet the challenges of global megatrends?" and "How are the major markets developing?"

Therefore, the following considerations factor into our response:

- > Locational advantages and special industrial competence together with regional research and economics
- > Specific application markets and their expected developments
- > Areas especially relevant to global social challenges, like mobility, healthcare, and climate protection
- > Competence and potential in Rhineland-Palatinate regarding key technologies and cross technologies
- > Existing clusters and network structures.

We identified six areas we believe have particularly high potential:



WHY THE SIX AREAS PROVIDE GREAT OPPORTUNITIES ...

Each of our six high potential areas represents a cross section of industries and technologies. This stimulates

innovation in many sectors simultaneously – and creates promising diversification in these and other new sectors.

... in the life sciences and the health economy

Significance: The technologies of the life sciences and the health economy represent over proportionate growth compared to the economy as a whole, also in terms of jobs. Additionally, key social challenges are being addressed in the health and security issues of medical data infrastructures.

Sectors (selected):

- > Health economy
- > Chemicals
- > Pharmaceuticals
- > Medical technologies
- > Glass & Ceramics
- > Optics

Application markets (selected):

- > Medical technologies
- > Personalized medicine

- > Telemedicine
- > Ambient assisted living
- > Diagnosis and therapy
- > Drug research and development
- > Bioinformatics and analysis

Clusters and network structures: Particularly noteworthy is the high profile Cluster for Individualized ImmuneIntervention (Ci3): This cluster combines outstanding expertise in the Rhine-Main region in the areas of drugs, therapeutic approaches and diagnostics and promotes new medical strategies for the treatment of serious illnesses such as cancer, autoimmunity deficiencies and infectious diseases. Other important initiatives in the health economy contribute to the development of system solutions, for example the diabetes cluster or the Adaphtera network for rheumatoid arthritis.



Within the framework of the Ci3 "Showcase" format, partners in the leading edge cluster invite you into their companies and research institutes

Researching medicine, biotechnology, and pharmaceutical sciences at Kaiserslautern University of Applied Sciences

Chemical engineering at Kaiserslautern University of Applied Sciences, Pirmasens Campus

... in energy, environmental technologies, and resource efficiency

Significance: These sectors are experiencing exceptionally dynamic growth in Rhineland-Palatinate. Each is focused on solutions to the social challenges of climate change, energy supply, mobility, and data security. Environmental technologies are of increasing importance worldwide in terms of ecologic sustainability and economic competitiveness and represents a significant contribution to the economic strength of Rhineland-Palatinate.

Sectors (selected):

- > Energy generation
- > Chemicals
- > Equipment manufacturing
- > Vehicle manufacturing
- > Glass & Ceramics
- > Optics
- > Electronics

Application markets (selected):

- > Solar energy
- > Energy storage
- > Industrialization of energy storage devices

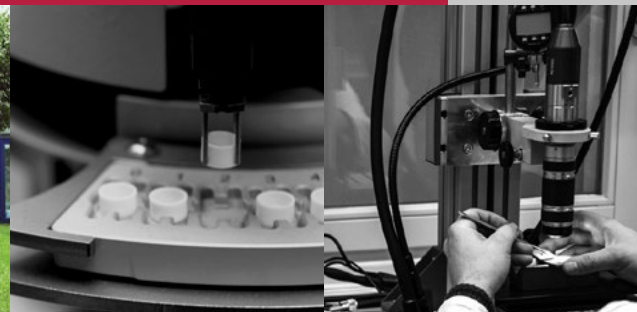
- > Virtual power plants
- > Water purification and waste water treatment
- > Energy efficiency from industrial and commercial properties as well as industrial manufacturing processes
- > High-tech recycling (such as in the recovery of rare metals, especially, from electronic waste)
- > Pre-treatment and processing of biomass

Clusters and network structures: Viable cooperative value adding structures are being built. In particular, the aim of the StoREgio Cluster for "The use of intelligent energy storage systems" is to provide integrated system solutions for the use of energy storage. The competence network Smart Grids addresses the same issue – its focus is on distributed intelligent power supply controls. The Ecoliance Rhineland-Palatinate is an environmental technology network with members from the business and scientific communities.

View from the inside of the underground heat collector for the external air supply at the Environmental Campus Birkenfeld



Environmental Campus Birkenfeld: Media Computer Science students combine subjects from applied computer science with modern communications media.



Autosampler for thermo-gravimetric mass spectrometry with ceramic crucibles



In German startup rankings,
Rhineland-Palatinate takes

2nd

place! That is significant!
Statistically, it means that of every 100
people of working age, almost two of them
will establish their own company!



»THE SIMPLE APPROACH«

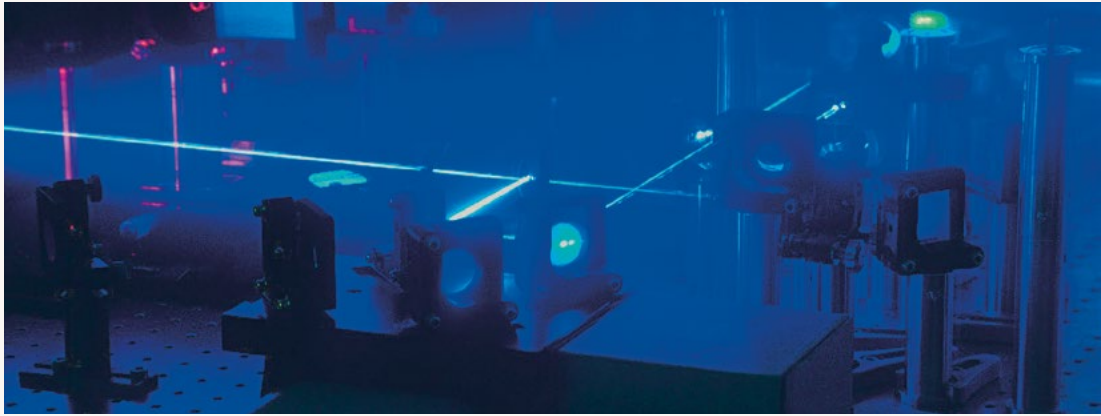
PROF. DR. CHRISTIANE ZIEGLER

Head of the Physics Department at Kaiserslautern University of Technology, Prof. Ziegler is also the scientific director of IFOS (Institute for Surfaces and Thin Film Analysis), co-founder of Nano S, and Ambassador for Nanotechnology, Deutsches Museum. She was previously employed from 1999 to 2006, as co-director of the Germany's Nanotechnology Center of Excellence, CC-NanoChem and CC-NanoBioNet (formerly, CC-NanoBioTech).



Prof. Ziegler, nearly everyone today has heard something about nanotechnology – You were dealing with the subject long before people started talking about it ... That's right! Nanophysics has fascinated me ever since completing my doctoral dissertation in 1991, when I was taking measurements with a scanning tunneling microscope (STM) and I saw atoms for the first time. At the nano level, objects often behave totally different than what classical physics predicts. We are increasingly able to use these properties: Nanotechnology is one of the key technologies of the 21st century.

Is your research at TU Kaiserslautern aimed at the possibilities of some specific use? Our research work is highly application oriented – in many fields, from IT to medicine. A number of spinoff companies from the university illustrate the broad range of possible uses: from everyday objects like the golf balls with improved construction and nano coatings to deliver exceptional flight characteristics that I helped to develop, to companies that develop laser and camera technologies. That's not even mentioning the many IT startups!



The labs of Rhineland-Palatinate universities are developing new ideas for applications from cutting edge research such as the laser system shown in this photonics lab.

You said that nano objects often behave quite differently than expected – are you ever surprised by anything else? Absolutely! For example, I was positively surprised at how my ideas were so well received here in Rhineland-Palatinate. I was able to introduce a new degree program in biophysics within just two years. The program ensures that young scientists will have an outstanding education in this interdisciplinary field, which is closely related to nano science. And, in the context of technology startups involving professors, I saw how stones in our path and even larger obstacles were most expediently eliminated in a very natural and matter of course manner.

What do you think is the reason for this natural cooperative support? In Rhineland-Palatinate, the principle of the simplicity applies. If, for example, I want to speak with someone from a government ministry about pursuing a new idea, the process moves quickly

and is completely unproblematic. There is a great openness, even for the unusual, and throughout the process there is a pleasantly relaxed mood.

You give the impression that you are very comfortable here ... There is a saying about Kaiserslautern: "If you can find it, you'll find that you like it." I especially like the framework conditions for research and the way people treat each other. And, there are other things: I can get everywhere on foot or by bike. The forest is only a short distance away for walking my dog and for me – the broad expanse of nature is the perfect balance for my work with the tiniest objects that humans can manufacture.

As the state's only technical university, many of the degree programs at the University of Kaiserslautern offer a combination of the natural sciences and the engineering disciplines



... in the automobile and commercial vehicle industry

Significance: The development of sustainable mobility systems is of major economic and environmental importance worldwide. Next to the chemical industry, the automobile and commercial vehicle industry is Rhineland-Palatinate's most important sector by revenue. The responses to address issues in mobility, climate change, energy use, and communication are being developed in this area.

Sectors (selected):

- > Vehicle manufacturing
- > Glass & Ceramics
- > Optics
- > Electrical engineering
- > Metals
- > Plastics

Application markets (selected):

- > Energy efficiency in automobile and commercial vehicle industry
- > Vehicle reliability and safety
- > Alternative drives
- > Alternative materials
- > Forming systems
- > Intelligent and functionally networked vehicles

Clusters and network structures: In addition to a collaborative effort on specific technical and technological issues and exploring new fields of technology, the clusters and networks cooperate in the areas of location marketing and the development of export markets. For instance, the Center for Commercial Vehicle Technology, Fraunhofer's DNT Innovation Cluster (Digital Commercial Vehicle Technology), and the Commercial Vehicle Cluster Southwest (CVC) have all come together to form the joint Commercial Vehicle Alliance (CVA) network. The Rhineland-Palatinate Vehicle Initiative, founded in 2013, further intensifies the networking and exchange of key industry topics.

From Rhineland-Palatinate to the world:
Trucks such as the Mercedes-Benz truck shown here being loaded with goods leave Wörth for delivery to about 150 countries.



Cluster and network structures facilitate exchange and cooperation.

... in information and communication, software systems

Significance: The sectors in this high potential area are among the key drivers of innovation: in Germany, the majority of the innovation in this area is happening in the automotive, medical technology, and logistics sectors. This is where various social challenges like communication, mobility, security, energy, and healthcare are being addressed. In addition to the substantial research expertise in Rhineland-Palatinate, there are also many, very innovative medium sized enterprises (known as the *German Mittelstand*).

Sectors (selected):

- > Information and Communication Technologies
- > Software
- > Numerous ICT application areas

Application markets (selected):

- > Enterprise software
- > Ambient intelligence
- > IT safety and security technologies
- > Digital models for the automotive industry/
Energy grid management

Clusters and network structures: Rhineland-Palatinate is an important partner in Europe's largest leading edge cluster for the digital enterprise, the "Software-Cluster". The primary focus of this cluster is on enterprise software, specifically, on forming individual software solutions from multiple vendors into a single software product.



IESE /Concept Car – open research and training platform for embedded systems



Detail view of server



Network cables (fiber optic)

... in the areas of materials and surfaces

Significance: The research and development activities ongoing at companies and institutes are a driving force for industrial product development in various sectors. Rhineland-Palatinate is home to many sectors with significant strength and relevancy to a wide range of applications with most opportunities in mobility, energy, and healthcare.

Sectors (selected):

- > Chemicals
- > Glass & Ceramics
- > Optics
- > Vehicle manufacturing
- > Metals
- > Recycling
- > Plastics
- > Medical technologies

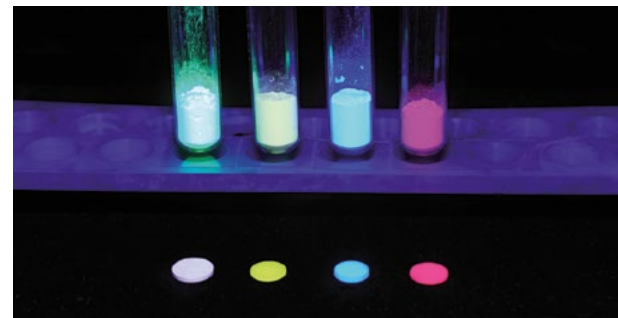
Application markets (selected):

- > Composite materials
- > Functional surface applications
- > Material composite systems and substitution
- > Joining technologies
- > Material processing and coating in connection with shaping capabilities
- > Filter systems

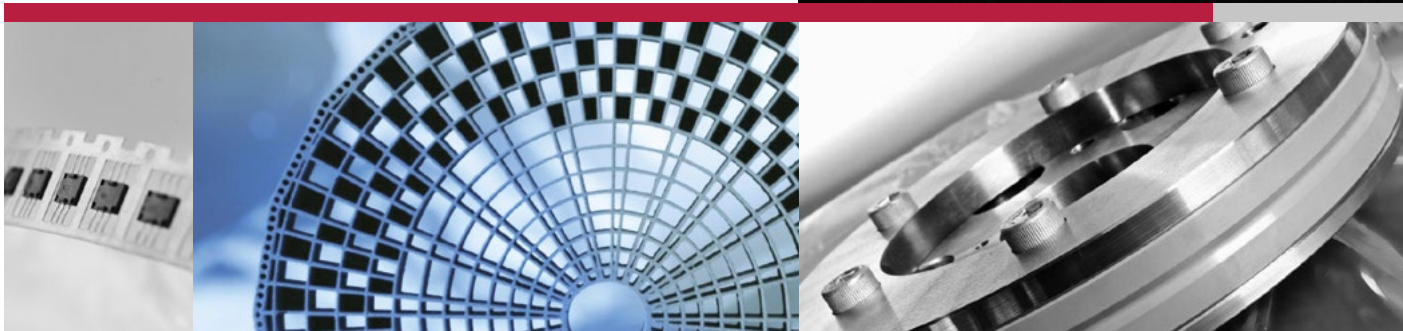
- > Refractory systems
- > Technical ceramics

Clusters and network structures: The "Innovation Network for Metal-Ceramic-Plastic" (IMKK) and its member research institutes, TIME (Technology Institute for Metals & Engineering) and Research Institute for Inorganic Materials – Glass/Ceramics (FGK), supplies networking of the regional innovation potential and the sector-related expertise and R&D capabilities of the SMEs. This benefits, for example, the market-ready development of hybrid materials made of metals, ceramics, and plastics. The Competence Network for Plastic Technology (Kom-K-Tec) situated in the southwest part of the state brings together producers and processors, tool makers, engineering service providers, and the research and development community.

FGK Research Institute: Development of optical and luminescent ceramics for high performance LEDs (www.fgk-keramik.de)



Ceramic structure model, 3-D ceramic printing (www.bauer-technologies.eu)



Plastic-coated electronic components (www.dr-boy.de)

Rolling mill drive pulley, metal-ceramic composite (www.tekowe-gmbh.de)



Did you know, ...

the export rate is

56%

in Rhineland-Palatinate?

Local companies think global and
have international experience.



»THE CONCENTRATION OF SOFTWARE COMPETENCE«

DR. THOMAS ENGEL

Since 2014, manager of Technology Innovation Strategy, Dr. Engel was formerly the head of the Intelligent Solutions Group at the John Deere European Technology Innovation Center. The Center develops technological solutions that are of value to the customer and is responsible for all development in the areas of Information & Communication Technology and E-Mobility for John Deere. After earning his Ph. D., Dr. Engel taught and performed research as a Junior Professor in the application of electronics and software to support sustainable agriculture. As a product manager at Claas, he introduced the first practical products for precision farming. He joined John Deere in 2000.



Dr. Engel, Deere & Company has multiple locations in Germany. Why was Kaiserslautern chosen in 2010 as the site for the European Technology Innovation Center? We chose Kaiserslautern for a number of reasons. Of course, the proximity to our Mannheim and Zweibrücken locations played a role. The decisive factor, however, was the Science Alliance Kaiserslautern. In particular, what convinced us was the concentration of software competence – with the Technical University, Fraunhofer Institutes, Max Planck Institute

and the German Research Center for Artificial Intelligence. Another large influence was the existence of the local leading edge cluster that brings together research and industry in the field of commercial vehicle design.

The possibility for strategic alliances made the difference? Yes, in the area of Information and Communication Technologies and software systems, we perform scientific research on future oriented



Driver's compartment control panel with apps for precision farming.

technologies in collaboration with local partners, for example, in the areas of automation and digitization. We are also closely involved in the integration of the automobile and commercial vehicle sectors.

Could you give an example of the cooperation in the software industry? Automation and driver assistance software is increasingly complex and important for agricultural equipment, which is why we seek to benefit from the local expertise and optimize our systems software architectures. Furthermore, in the leading edge cluster we are developing new methods to make the user interface more intuitive. Especially in agriculture, because there are many and often quickly changing conditions and factors, we want them to be able to adapt to the situation and context.

You are working closely with the Commercial Vehicle Cluster. How do you manage to deal with direct competitors? The commercial vehicle cluster is an association of many companies that all face similar kinds of problems as John Deere. There are many areas where we can all learn and mutually benefit from one another. Since no direct competitor of John Deere is involved, the cooperation presents no problems for us from the competitive engineering and antitrust perspectives. The platform provides an open, fair, and trusted exchange for the benefit of all partners.

John Deere
European Technology
Innovation Center
in Kaiserslautern



... and, in microsystems, sensor technologies and automation

Significance: Social challenges in the areas of communications, security, energy, and healthcare characterize the focus of this high potential area. Rhineland-Palatinate is host to several highly renowned research institutes, a fact made possible by the early investments by the state in a central R&D infrastructure for the many manufacturers and users based in the state.

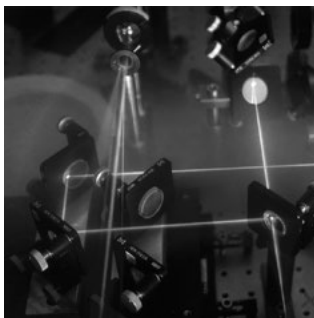
Sectors (selected):

- > Chemicals
- > Equipment manufacturing
- > Vehicle manufacturing
- > Process measuring and control technologies

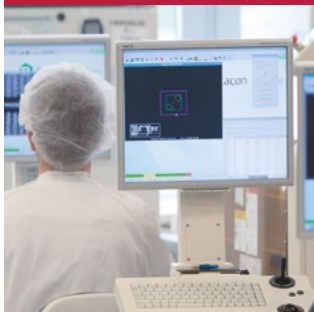
Application markets (selected):

- > Automotive
- > Medical technologies
- > Optical systems
- > Information and communication technologies
- > All areas of application in which magnetic sensors play a key role
- > Laser components
- > Laser material processing
- > Measuring systems
- > Embedded systems
- > Industrial IT (digital automated production, or *Industrie 4.0*)

Clusters and network structures: The network partners in the Germany-wide innovation platform INNOMAG (Innovation Platform for Magnetic Microsystems) in Mainz represent the entire added value chain of magnetic microsystems: from sensors to components to various applications in other fields like automotive, life sciences, and energy. The Smart Factory technology initiative is Europe's first multivendor demonstration and research platform for innovative industrial production systems (*Industrie 4.0*).



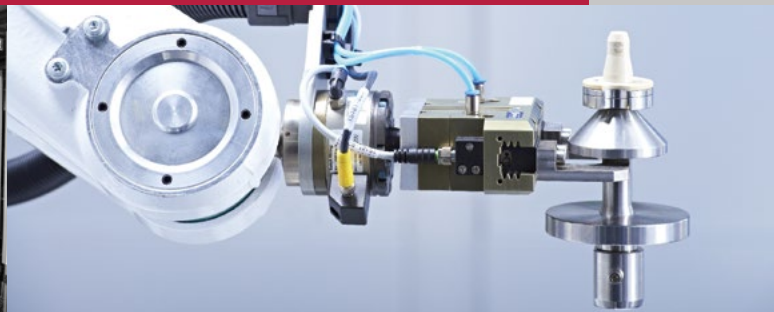
Laser operations with ultrashort laser pulses developed for use in manufacturing systems.



iC-Haus manufactures integrated circuits and microsystems for, among other things, magnetic sensors.



World's first manufacturer independent *Industrie 4.0* plant at the SmartFactory KL Living Lab



Plant automation technology for components and systems for the medical technologies sector

HAVE WE AWAKENED YOUR INTEREST IN RHINELAND-PALATINATE?

Today, Rhineland-Palatinate is an exceptionally innovative and very popular location – this is evident from the facts and figures presented in this brochure ...

Really exciting, however, are the developments coming in the next few years: Our state innovation strategy guarantees that the maximum number of market participants will benefit from new discoveries and applications. New impulses for growth are continuously being created.

Always a priority for our actions is the support to small and medium size enterprises: They represent a substantial contribution to the economic vitality of Rhineland-Palatinate. We continue to promote various networking structures for businesses and research institutes through the use of well-coordinated tools and professional services.

Would you like to be a part of our success story? Get in touch with us now!

Do you have the impression Rhineland-Palatinate is the place where you can realize your vision? Do you believe your product or your company would be a good addition to one of the networks or clusters? Are you active in one of the sectors included among our high potential areas? Do you want to set up high-tech operations in Rhineland-Palatinate? Contact us for more detailed information – learn more about the diverse funding options from the state's own Investment and Economic Development Bank of Rheinland-Pfalz (ISB).

BUSINESS PARTNER

**Ministry of Economic Affairs,
Transport, Agriculture and Viniculture
(MWVLW)**

Department of Innovation

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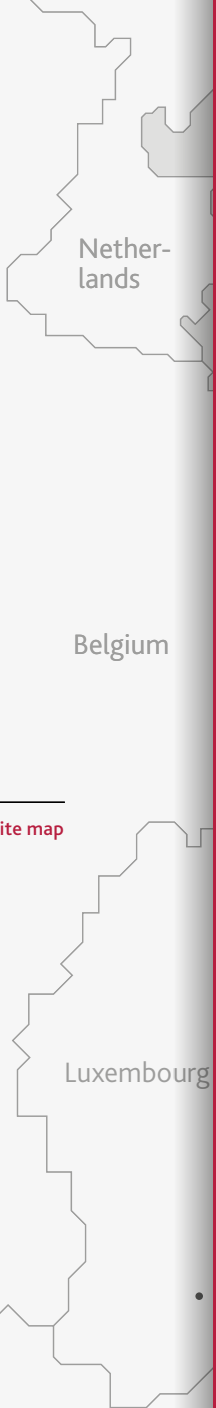
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More details and information about Rhineland-Palatinate are provided online at:
www.rlp.de

Learn more about our innovation strategy at:
www.mwvlw.rlp.de/innovation

Information of interest to investors is summarized and provided at: www.isb.rlp.de

More about tourism in the Rhineland-Palatinate is available at: www.gastlandschaften.de

EDITORIAL NOTES

Published by Ministry of Economic Affairs, Transport, Agriculture and Viniculture (MWVLW)
State of Rhineland-Palatinate in cooperation with
the Investment and Economic Development Bank of Rhineland-Palatinate (ISB)

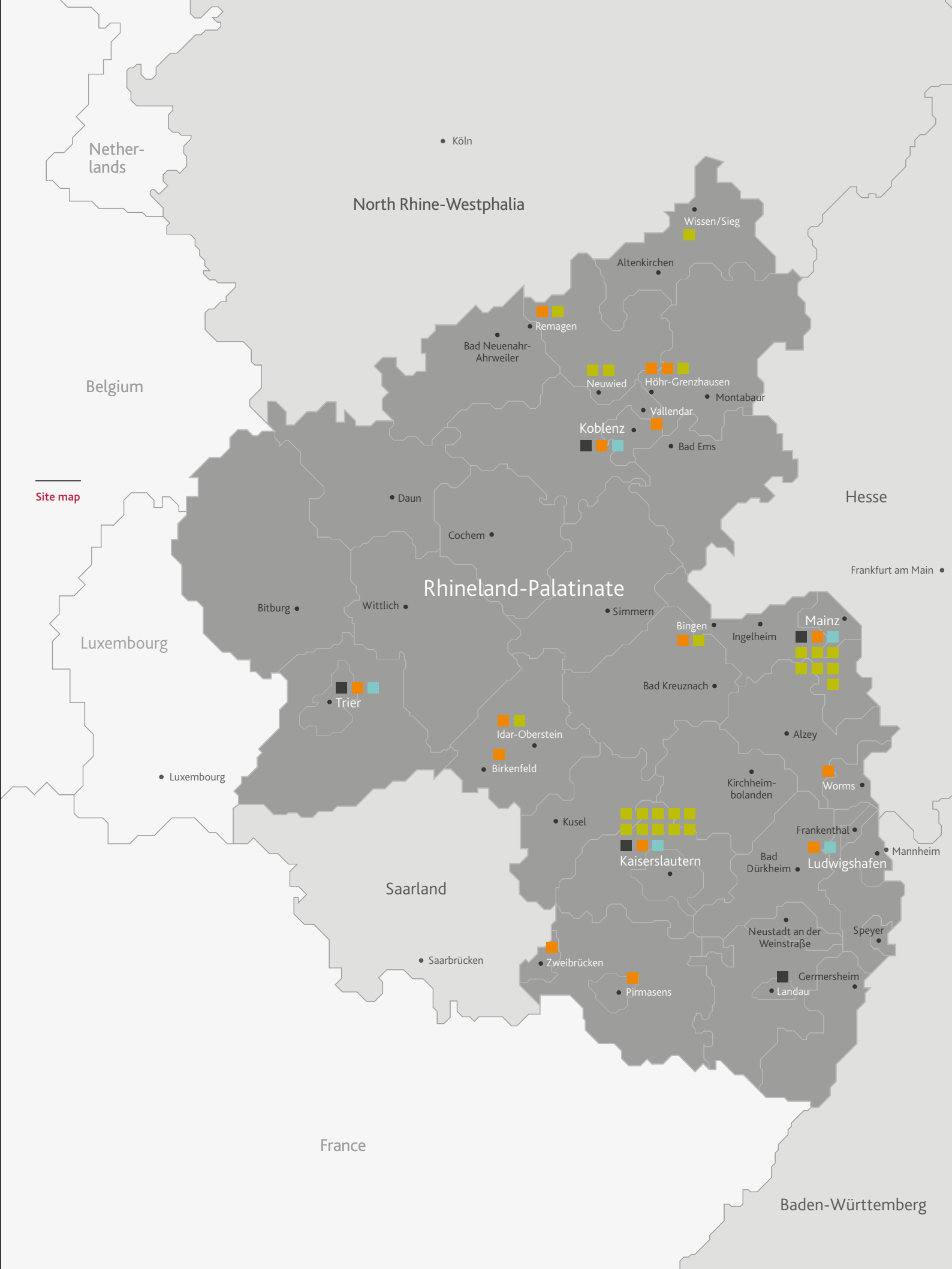
Layout Hilger & Boie Design

Edited by Sabine Eigenbrod in collaboration with MWVLW and ISB

Circulation 3,500 copies

Date July 2016

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Gutenberg University, Mainz

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ISB | Investment and
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Rheinland-Pfalz

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