

SAXONY!



WIRTSCHAFTSFÖRDERUNG
SACHSEN

SAXONY!

A Place in Motion

RESEARCHING · PRODUCING · INVENTING ·
LIVING · RESEARCHING · DEVELOPING ·
WORKING · LEARNING · RESEARCHING ·
THINKING · INVENTING · TRANSPORTING · LIV-
ING · WORKING · LIVING · DEVELOPING · LEAR-
NING · TRANSPORTING · INVENTING · PRODUCING ·
OPING · LIVING · LEARNING · RESEARCHING ·



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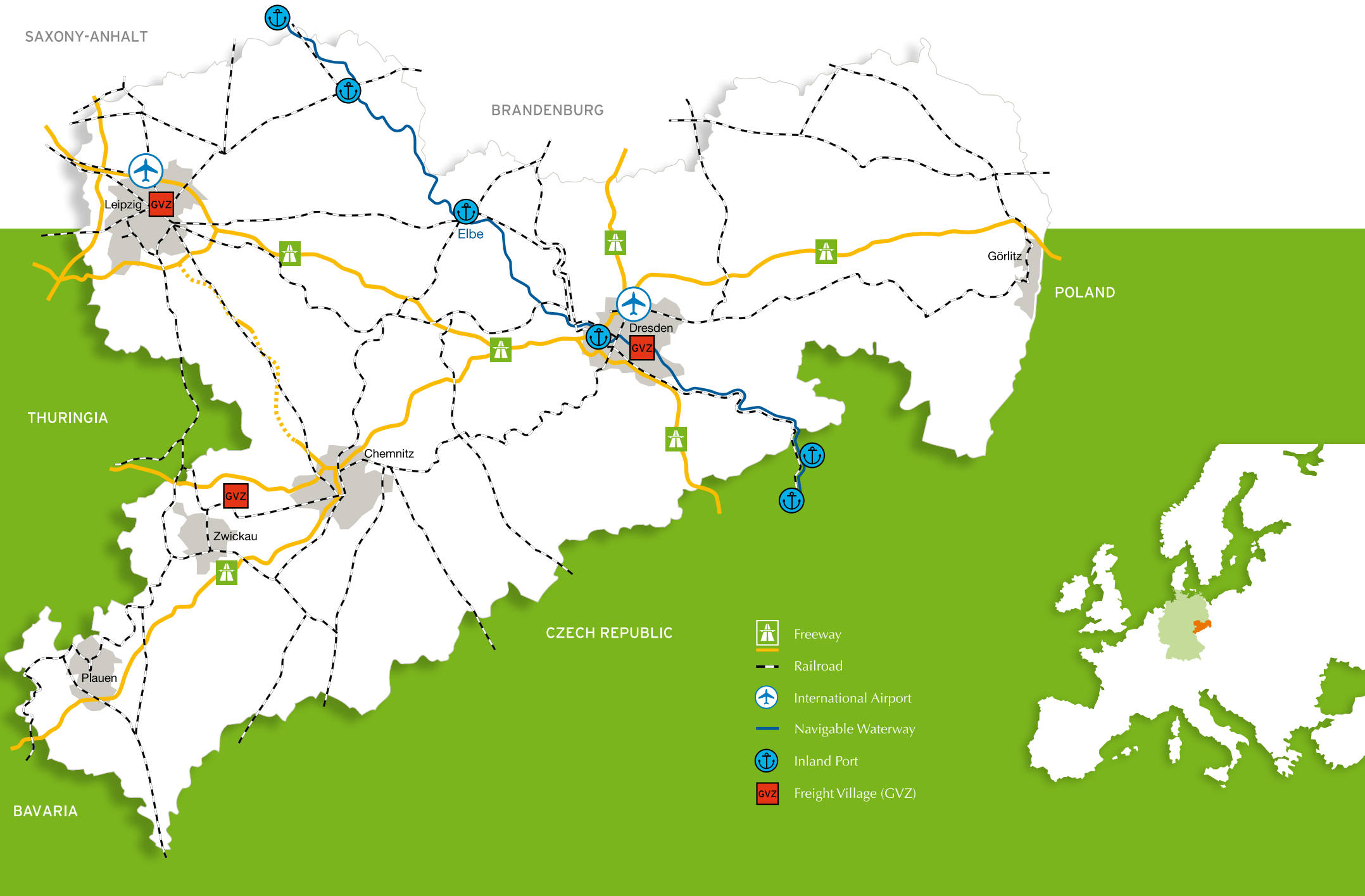


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Company/Institution

URL

Infrastructure & Location

DHL Leipzig Hub	www.dp-dhl.de/leipzig
Dresdner Verkehrsbetriebe AG	www.dvb.de
Flughafen Dresden GmbH	www.dresden-airport.de
Flughafen Leipzig/Halle GmbH	www.leipzig-halle-airport.com

Economy & Industry Sectors

ACTech GmbH	www.actech.de
Autoland Saxony	www.autoland.saxony.com
Automobilmanufaktur Dresden GmbH (Volkswagen's »Transparent Factory«)	www.glaesernemanufaktur.de
BMW AG, Plant Leipzig	www.bmw-werk-leipzig.de
Bombardier Transportation	www.transportation.bombardier.com
Eickhoff Group	www.eickhoff-bochum.de
GlaxoSmithKline Biologicals Dresden	www.glaxosmithkline.de
GLOBALFOUNDRIES, Fab 1 Dresden	www.globalfoundries.com
Heckert GmbH (Starrag)	www.starragheckert.com
Heliatek GmbH	www.heliatek.de
Infineon Technologies Dresden GmbH	www.infineon.de
»Invest in Saxony« – Saxony's Link for Investors	www.invest-in-saxony.com
Leipzig Trade Fair	www.leipziger-messe.de
NILES-SIMMONS-HEGENSCHEIDT Group	www.niles-simmons.de
Novald AG	www.novaled.com
Porsche Factory Leipzig	www.porsche-leipzig.com
Saxony Economic Development Corporation	www.wfs.saxony.de
Saxon Museum of Industry Chemnitz	www.saechsisches-industriemuseum.de
Silicon Saxony e. V	www.silicon-saxony.com
sunfire GmbH	www.sunfire.de
UNION Werkzeugmaschinen GmbH	www.union-machines.com

Education, Training & Qualification

Deutsche Telekom University of Applied Sciences for Telecommunications in Leipzig (HfTL)	www.hft-leipzig.de
Dresden International Graduate School for Biomedicine and Bioengineering (DIGS-BB)	www.digs-bb.de
Dresden International School (DIS)	www.dresden-is.de
Dresden University of Applied Sciences (HTW Dresden)	www.htw-dresden.de
Dresden University of Technology	www.tu-dresden.de
Freiberg University of Mining and Technology	www.tu-freiberg.de
Leipzig Graduate School of Management (HHL Leipzig)	www.hhl.de
Leipzig International School (LIS)	www.intschool-leipzig.com
Leipzig University	www.uni-leipzig.de
Zwickau University of Applied Sciences (WHZ Zwickau)	www.fh-zwickau.de

Company/Institution

URL

Research & Cooperation

AZZURRO Semiconductors AG	www.azzurro-semiconductors.com
Center for Advancing Electronics Dresden (cfaED)	www.cfaed.tu-dresden.de
Chemnitz University of Technology	www.tu-chemnitz.de
Cluster »MERGE – Technologies for Multifunctional Lightweight Structures«	www.tu-chemnitz.de/MERGE
Comarch AG	www.comarch.de
ECEMP – European Center for Emerging Materials and Processes Dresden	www.ecemp.tu-dresden.de
Fraunhofer Institute for Electronic Nano Systems (ENAS)	www.enas.fraunhofer.de
Fraunhofer Institute for Nondestructive Testing (IZFP), Dresden branch	www.izfp-d.fraunhofer.de
Fraunhofer Research Institution for Organics, Materials and Electronic Devices (COMEDD)	www.comedd.fraunhofer.de
Fraunhofer Technology Center for Semiconductor Materials (THM)	www.thm.fraunhofer.de
Freiberger Compound Materials GmbH (FCM)	www.freiberger.com
Institute for Print and Media Technology at Chemnitz University (pmTUC)	www.pmTUC.de
Institute of Lightweight Engineering and Polymer Technology (ILK), Dresden University	www.tu-dresden.de/mw/ilk
Leading-Edge Cluster »Cool Silicon«	www.cool-silicon.de
Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG)	www.mpi-cbg.de
MgF Magnesium Flachprodukte GmbH	www.thyssenkrupp-mgf.com
Nanoelectronic Materials Laboratory gGmbH (NaMLab)	www.namlab.com
Zentrum Mikroelektronik Dresden AG (ZMDI)	www.zmdi.com

Culture, Nature & Recreation

City of Annaberg-Buchholz	www.annaberg-buchholz.de
City of Chemnitz	www.chemnitz.de
City of Dresden	www.dresden.de
City of Freiberg	www.freiberg.de
City of Görlitz	www.goerlitz.de
City of Leipzig	www.leipzig.de
City of Meissen	www.stadt-meissen.de
City of Riesa	www.riesa.de
Dresden Music Festival	www.musikfestspiele.com
Dresden State Art Collections	www.skd.museum
Dresden's Frauenkirche Church	www.frauenkirche-dresden.de
Erzgebirge Region Tourism Association	www.saechsische-schweiz.de
euro-scene Leipzig - Festival of Contemporary European Theater	www.euro-scene.de
Gewandhaus Leipzig	www.gewandhaus.de
International Dixieland Festival Dresden	www.dixieland.de
Leipzig Zoo	www.zoo-leipzig.de
Lusatian Lakeland	www.lausitzerseenland.de
MEISSEN Porcelain Manufactory	www.meissen.com
Saxon Elbe Region Tourism Association	www.elbland.de
Saxon Switzerland Tourism Association	www.erzgebirge-tourismus.de
Saxony's Palaces, Castles and Gardens	www.schloesserland-sachsen.de
Saxony's Tourism Association	www.visitsaxony.com
SILVER ROAD in Saxony and Bohemia	www.silberstrasse.de
Upper Lusatia	www.oberlausitz.com

SAXONY!

Welcome!

Saxony has many pictures which tell many tales and create lots of history: The digital heart of the microelectronics/ICT industry beats in Dresden. »Silicon Saxony e. V.« a network of more than 300 commercial enterprises and research institutions, is Europe's leading and the fifth largest micro-electronics cluster in the world. Geared towards the future, researchers and young entrepreneurs between Leipzig and Dresden are working hand in hand in the sectors life sciences and environmental technology.

The traditional heart of Saxony's economy is found in the Chemnitz-Zwickau region. Whether it be mechanical engineering or more than 100 years of »Autoland Saxony« – strong and highly efficient industries have evolved from smart ideas and intelligent solutions.

The commercial center Leipzig is a vibrant and bustling trade fair and media city; its airport is Europe's most modern air cargo hub providing 24/7 services.

To make a long story short: Saxony is a top location for such globally active enterprises as, for example, Volkswagen, BMW, and Porsche, GLOBALFOUNDRIES and Infineon, DHL and Bombardier Transportation, NILES-SIMMONS-HEGENSCHEIDT, and many more.

Curious to learn more? Then read on!



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SAXONY!

MOBILE

Infrastructure & Location

Picture left

The DHL hub Leipzig/Halle is the third hub in the global DHL network and, at the same time, also the most modern one. And when night falls, rush hour begins – on weekdays, about 60 planes take off and touch down here every night.

Picture below

Leipzig/Halle Airport is Germany's second largest cargo airport and provides direct links to the Transeuropean expressway and rail networks.

Due to its advantageous geographic location, Saxony is the ideal logistics location for distributing goods throughout Europe, regardless of the direction. The region around Leipzig is Germany's most dynamic logistics location and among the top 5 in Europe.

Its central location has proven to be a real geographical advantage for Saxony. Which is why the logistics giant DHL decided to relocate its European air cargo hub from Brussels to Leipzig. At Leipzig/Halle Airport, cargo liners can be handled 24 hours per day and 365 days per year; the best possible prerequisite for mastering the constantly increasing airfreight volume. Since March 2012, DHL has been operating a new flight route which connects Leipzig directly with Hong Kong and Los Angeles and, in turn, drastically reduces the delivery times of intercontinental shipments.

Saxony's road network is one of the best developed systems in all of Germany. Near Dresden, Europe's most important routes intersect – the E 40 (France – Kazakhstan) and the E 55 (Sweden – Greece).



Infrastructure - Facts and Figures

Road network	13,595 km
Proportion of federal expressways	531 km
Length of rail network	2,580 km
International airports	2 (Leipzig/Halle, Dresden)
Elbe River ports	3 (Dresden, Riesa, Torgau)



Rail transportation is one of Saxony's strong points. Germany's first long-distance train traveled from Dresden to Leipzig already back in 1839. Today, the region possesses one of Europe's densest rail networks. Three highly efficient Elbe River inland ports have been expanded into transportation interfaces of water, road, and rail. These ports connect Saxony with the North German seaports and, thus, with international maritime trade.

Custom-made Logistics

In 1999, the Volkswagen AG decided to build the »Transparent Factory« right in Dresden's city center. The prerequisite for its construction was the solution of a logistical problem. – Directly on site, there was virtually no storage capacity; VW's logistics center is located four kilometers away. Together with Dresden's public transport provider DVB AG, a truly unique solution was developed – the »CarGoTram«. Specifically designed cargo trams deliver the goods »just-in-time« to the assembly line in a way that is friendly to both regular traffic and the environment.

Picture left

In Dresden, modern commuter trains take travelers from the city center to the airport in only 22 minutes.

Pictures above

The VW CarGoTram (see picture above right) uses Dresden's normal tram system; its schedule is coordinated with the time tables of the passenger trams. Each of the two modern, blue, 60 meter long trains is capable of carrying up to 60 tons of freight to the »Transparent Factory« (see picture above left). Every trip, thus, relieves the city center of three truck deliveries.

Picture right

March 2005 marked the launch of mass production at the BMW Plant in Leipzig. The plant manufactures five models. Up to 740 vehicles roll off the assembly line every day. Today, about 6,000 persons have their workplaces on the corporate premises. Currently, the Leipzig factory is being expanded into the first mass production site for electric cars in Germany.



SAXONY!

DYNAMIC

Economy & Industry Sectors

Already in the 18th century, the Industrial Age began in Saxony with the founding of the first machine construction companies. The region, thus, headed the field on the European mainland. The first locomotive to be designed and engineered in Germany, the first six cylinder engine, the centrally positioned gearshift lever in automobiles – all of these pioneering innovations come from Saxony.

In the mid-19th century, the industrial cities Chemnitz, Zwickau, and their suburbs were the region with Europe's highest per-capita income.

10 And the success story continues: Since 1990, about 6,000 companies have set up or purchased business premises in Saxony. Saxony's economy has increased by approximately 14 % since 2000; thus, exhibiting the highest economic growth of all federal states in Germany.

»Autoland Saxony«

With the six vehicle and/or engine plants of Volkswagen, BMW, Porsche, and NEOPLAN, »Autoland Saxony« is one of Germany's top automobile locations. This strong commitment is no coincidence. The experience dates back more than one hundred years to the time when the legendary August Horch founded the brands »HORCH« and, later, also »Audi« in Saxony.

»Autoland Saxony« – that's not just the renowned manufacturers. Approximately 750 supply companies with around 70,000 employees form the backbone of Saxony's automobile construction.

The automobile industry contributes about one fourth to the total turnover and almost 37 % to the foreign sales of Saxony's industry.

Picture below left

A true historic eyewitness: The halls with the prominent round arch façade were built as a machine tool factory around 1900. Here, the Saxon Museum of Industry Chemnitz has been showcasing numerous treasures from 200 years of Saxony's industrial history on 4,500 m² of exhibition space since 2003.

Picture below center

Specializing in »rapid prototyping« for castings, the Freiberg-based ACTech GmbH produces prototypes for more than 1,000 customers in 36 countries. With its innovative procedure, the company achieves time and cost savings of up to 80 % (the picture shows the steel casting of a mold in the company's own foundry).

Picture below right

The striking building of the Customer Center of Porsche Factory Leipzig can be seen from afar. Porsche's bestsellers are manufactured in the adjacent production halls – the SUV Cayenne and the sports sedan Panamera and, as of end 2013, also the new SUV model »Macan.« That's why the location is being expanded with an investment sum of approximately 500 million euros. Approximately 1,000 new employees will be hired.



Picture right
Headquartered in Chemnitz, the NILES-SIMMONS-HEGENSCHEIDT Group unites 180 years of experience in German and US American machine tool construction under its roof and is one of the 50 largest enterprises of the industry sector.

The Cradle of German Mechanical Engineering

Saxony can justifiably call itself the cradle of German mechanical engineering. The ingenious Chemnitz entrepreneur Carl Friedrich Bernhard returned to Saxony from a »business trip« to England with the spinning master and machine builder Evan Evans. With the help of Evans, Bernhard transformed the spinning mill of his family in Harthau into the world's largest mechanical spinning mill as of 1798. This marks the beginning of the triumphant start of industrialization and the virtually unparalleled success story of this industry sector in Saxony.

Still today, machines produced in Chemnitz enjoy an excellent reputation throughout the world. For example, such corporate groups as NILES-SIMMONS-HEGENSCHEIDT and Starrag are active in Chemnitz and on the global market. Germany's oldest still existing toolmaking factory – the UNION Werkzeugmaschinen GmbH in Chemnitz – is a leading manufacturer of boring mills and machining centers.

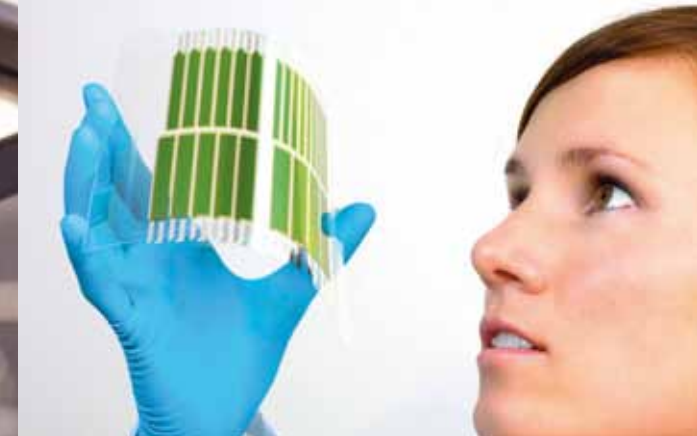
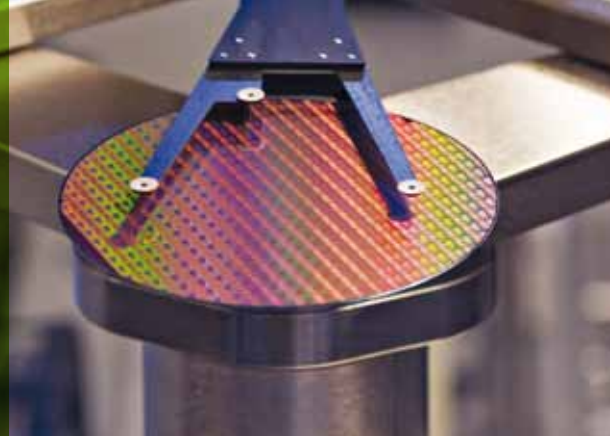
Prof. Dr. Hans J. Naumann »We've selected Chemnitz as our group's headquarters to send a clear signal. A signal that machines made in Saxony are world class. Competent employees, an excellent research environment as well as intelligent state support for innovations are all essential reasons in this.«

(Managing Partner, NILES-SIMMONS-HEGENSCHEIDT Group)



Economy - Facts and Figures

GDP	EUR 96,600 million
GDP per gainfully employed person	EUR 48,946
Industrial turnover	EUR 52,600 million
Export rate	38.8 %



»Silicon Saxony«

Every second chip produced in Europe bears the imprint »Made in Saxony«. GLOBALFOUNDRIES and Infineon Technologies have expanded and continue to expand their Dresden Fabs into the world's most modern semiconductor production sites. Saxony's companies and research institutions are the global leaders primarily in such innovative fields as »GreenIT«, organic & printed electronics, and next generation communication.

To make a long story short: »Silicon Saxony« is Europe's largest micro-electronics cluster; and the fifth largest worldwide. Approximately 2,100 companies with more than 51,000 employees develop, manufacture, and promote integrated circuits, serve the chip industry as materials and equipment suppliers, produce and distribute electronic products and systems based on integrated circuits, or develop and promote software.

Picture left

Dresden's NovaLED AG is a global leader when it comes to the production of highly efficient and durable organic light-emitting diodes (OLEDs). These ultraflat light sources permit entirely new display and lighting applications which are also very energy-efficient.

Picture above center

Infineon Technologies Dresden GmbH is one of the largest production sites of the Infineon Group. The company manufactures premium quality chips for innovative automotive and safety applications. About 80% of the current staff of approximately 2,000 employees come from the region.

Picture above right

The Dresden-based Heliatek GmbH is the technological leader for flexible, organic solar foils. Currently, the company holds the world record in organic solar cell efficiency with 12%.



Dr. Paul Rheinländer »In Eickhoff's more than 145 years of company history, Klipphausen was the first new business setup outside Bochum – and it has proven to be an excellent choice. Saxony's public authorities assisted us right from the start. That's why we were able to launch mass production only 18 months after the cornerstone ceremony. The well educated and highly skilled employees we found here are also an important aspect for us.«

(CEO, Eickhoff Group)



Picture right above

Located in Dresden, the sunfire GmbH develops and distributes power-to-gas and power-to-liquids systems featuring high temperature solid oxide electrolysis cells (SOECs). In 2011, sunfire merged with the Dresden-based staxera GmbH – the leading manufacturer of high temperature fuel cells (SOFCs) which are used already in the modern fuel cell heating systems made by the Vaillant corporation.

Picture right below

GlaxoSmithKline Biologicals, a leading producer of influenza vaccines for the global market, is located right in the heart of Dresden. In addition to the production of seasonal and pandemic influenza vaccines, the portfolio of the Dresden production site is complemented by filling and packaging other liquid vaccines. Approximately 700 employees work at this production site.

Environmental Technology and Life Sciences

In Saxony, the environmental and energy technology sector has become an important economic factor. Due to Saxony's long tradition as a mining region, the region's companies and research facilities possess considerable knowledge and expertise; primarily when it comes to the rehabilitation of post-mining sites, the removal of hazardous waste, and the reconstruction of wastewater systems. When it comes to renewable energy and increasing the efficiency of conventional and alternative energy systems and energy storage, Saxony is considered to be one of the competence centers in Germany.

Looking back on a 120 year success story in the pharmaceutical industry, Saxony is one of Germany's most dynamic life science regions today. Approximately 70 biotechnology, medical technology, and pharmaceutical companies – including GlaxoSmithKline with the flu vaccine center in Dresden – cooperate successfully with more than 30 research institutions focusing on the sectors regenerative medicine/therapies/ diagnostics, molecular bioengineering, bioinformatics, nano biotechnology as well as pharmacogenetics.





SAXONY!

FLEXIBLE

Education, Training & Qualification

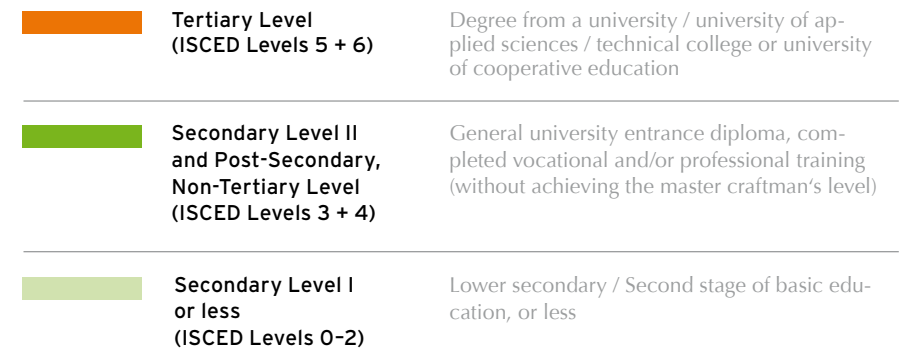
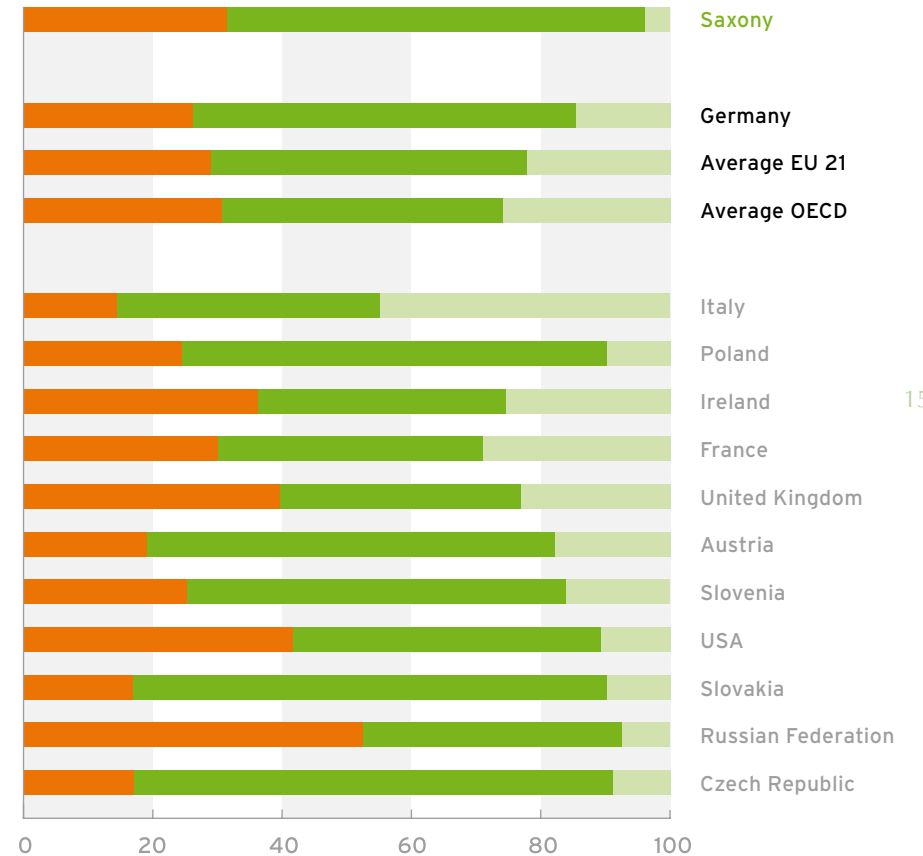
Picture left
Both young and old visitors of the »Night of Science« on the campus of the Freiberg University of Mining and Technology are fascinated: Totally independently, the two small robots in the lab of the Institute for Information Science seem to chase the small green plastic ball. The control technology which sets the robots in motion can also be used, for example, in medical technology.

Picture below
Education for the global citizens of the future: From initially 6 children at the time of its founding in 1992, the number of pupils at the Leipzig International School (LIS) has increased to more than 750 from about 60 nations. The standard language of instruction is English. This also applies to the Dresden International School (DIS).

Saxony has the brightest minds. 96% of the Saxons have earned at least a university entrance diploma or have completed vocational training. – For example, the OECD average amounts to »only« 76%.

No wonder. Since Saxony has the most efficient educational system of all German federal states. This is the result – already for the seventh time in a row now – of the Education Monitor, a comparative study conducted by the Cologne Institute for Economic Research (IW). According to this study, Saxony’s specific strong points primarily include its support infrastructure, overall school quality, internationalization, reduction of educational disadvantages, and the so-called MINT qualifications, i.e. mathematics, informatics, natural sciences, and technology.

And on top of all that: The excellent education and training of the people in Saxony comes along with exceptional motivation and commitment. Every year, Saxons work 81 hours longer than the German average – voluntarily and solution-oriented. Innovative companies from all around the world appreciate that.





16 **Universities with Tradition**

Saxony has the third highest university density of all German federal states. But this shouldn't come as a complete surprise. Leipzig University – founded in 1409 – is Germany's second oldest university, and the Freiberg University of Mining and Technology is the world's oldest educational institution focusing on mining and geosciences. The Dresden University of Technology today is one of the ten largest universities in Germany.

Exceptional Studies

Saxony's universities and colleges provide more than the usual standard: Since 2012, for example, the Dresden University of Technology has been providing a globally unique program of studies – the master's program in »Organic and Molecular Electronics.« In an entirely new, practically oriented instructional approach, the disciplines physics, chemistry, electrical engineering, and materials sciences are closely tied to one another.

The Freiberg University of Mining and Technology applies its more than 240 years of materials competence to instruction. For example, those who graduate from the program of studies »Electronic and Sensor Materials,« which is unique in all of Germany, are in high demand among semiconductor companies. Since 1994, the University of Applied Sciences Zittau/Görlitz has been providing the program of studies »Ecology and Environmental Protection.« This program provides an interdisciplinary education for its students – not only in ecological and economical fields, but also in legal, technical as well as management-related disciplines.

Practice-Oriented Vocational Training

Companies rely on skilled employees from Saxony – and they train and educate them here as well: Since 1991, the Volkswagen Bildungsinstitut GmbH, a vocational training institute headquartered in Zwickau, is responsible for the practical professional education on behalf of Volkswagen Sachsen and many other companies in the region. Currently, more than 800 young people are being trained in a total of 22 specific occupations at the institute's three locations in Saxony.

Picture above left
 Within the Uni-Wind Freiberg e. V. initiative, students at the Freiberg University develop small wind turbines of the third generation which are to supply individual households with electric power. The implementation and research results form an integral part of the instructions.

Picture above center
 When it comes to education, the Dresden University of Applied Sciences (HTW) places great emphasis on applying knowledge to solve real world problems. And the students of the chemical engineering program at the Faculty of Mechanical Engineering also complete internships in the university labs and in regional companies.

Picture above right
 The annual ranking of the German CHE Center for Higher Education regularly attests the HfTL Leipzig top positions in electrical engineering, information technologies, and information science. The HfTL scores points specifically in the Bachelor Practical Check and with students graduating within the standard period of studies (depicted here: EMC test series in the HfTL's absorber chamber).



Picture above left

The Center for Vehicle Electronics at the Zwickau University of Applied Sciences (WHZ) houses, for example, a shielded, futuristic hall. It is actually a vehicle lab which can be used for research and instruction to carry out electromagnetic compatibility tests – this is unique among all German universities.

Picture above center

The Leipzig Graduate School of Management (HHL) is Germany's oldest business management university and one of Europe's leading business schools today. And – those who study at the HHL are the most satisfied students in all of Germany. This was, once again, the outcome of a survey conducted among more than 20,000 students.

Picture right

The »Dresden International Graduate School for Biomedicine and Bioengineering (DIGS-BB)« educates the best young scientists from the Dresden University of Technology in the sectors cell biology, biomedicine, biophysics, and bioengineering and assists them in earning their doctoral degree.



The University of Applied Sciences for Telecommunications in Leipzig (HfTL) is a private institution supported by the Deutsche Telekom AG. Currently, about 1,000 students are being educated in direct, dual, or specific work and study programs as TCI and ICT specialists.

The dresden chip academy (dca) provides general and continued education and training in the sectors mechatronics, microtechnology, electronics, as well as in industrial and precision mechanics. Applications from eligible school graduates at the dca result in cooperative apprenticeship contracts with such companies as Wacker Chemie Nünchritz, GLOBALFOUNDRIES, or Infineon Technologies Dresden.



SAXONY!

ACTIVE

Research & Cooperation



Picture left
 More than 300 axolotls live in the amphibian breeding plant at the Max Planck Institute of Molecular Cell Biology and Genetics Dresden (MPI-CBG). By re-searching these masters of regeneration, it is possible to discover how precisely the replaced limbs are regrown. This is to help optimize the reproduction of human tissue in the lab.

Picture below left
 At the initiative of »Auto-Uni,« Audi AG, and VW AG, the Chemnitz University of Technology has developed the world's first modular age simulation suit (»MAX«). With lead weights connected to the belt and joints, shoes as stiff as ski boots, ear muffs, and blurred glasses, it is possible to examine how car driving changes as one ages.

Picture right
 The Fraunhofer Research Institution for Organics, Materials and Electronic Devices Dresden (COMEDD) is Europe's leading center for research on technologies based on organic semiconductor materials. (Picture: transparent solar cells as a module on a glass substrate)

Saxony's physicians and biotechnologists are learning from the »axolotl« – that's a nocturnal Mexican salamander – how diseased organs and limbs can be regrown. Just one of the many spectacular projects which make Saxony a leading global research venue for high tech industries.

Vibrant Research

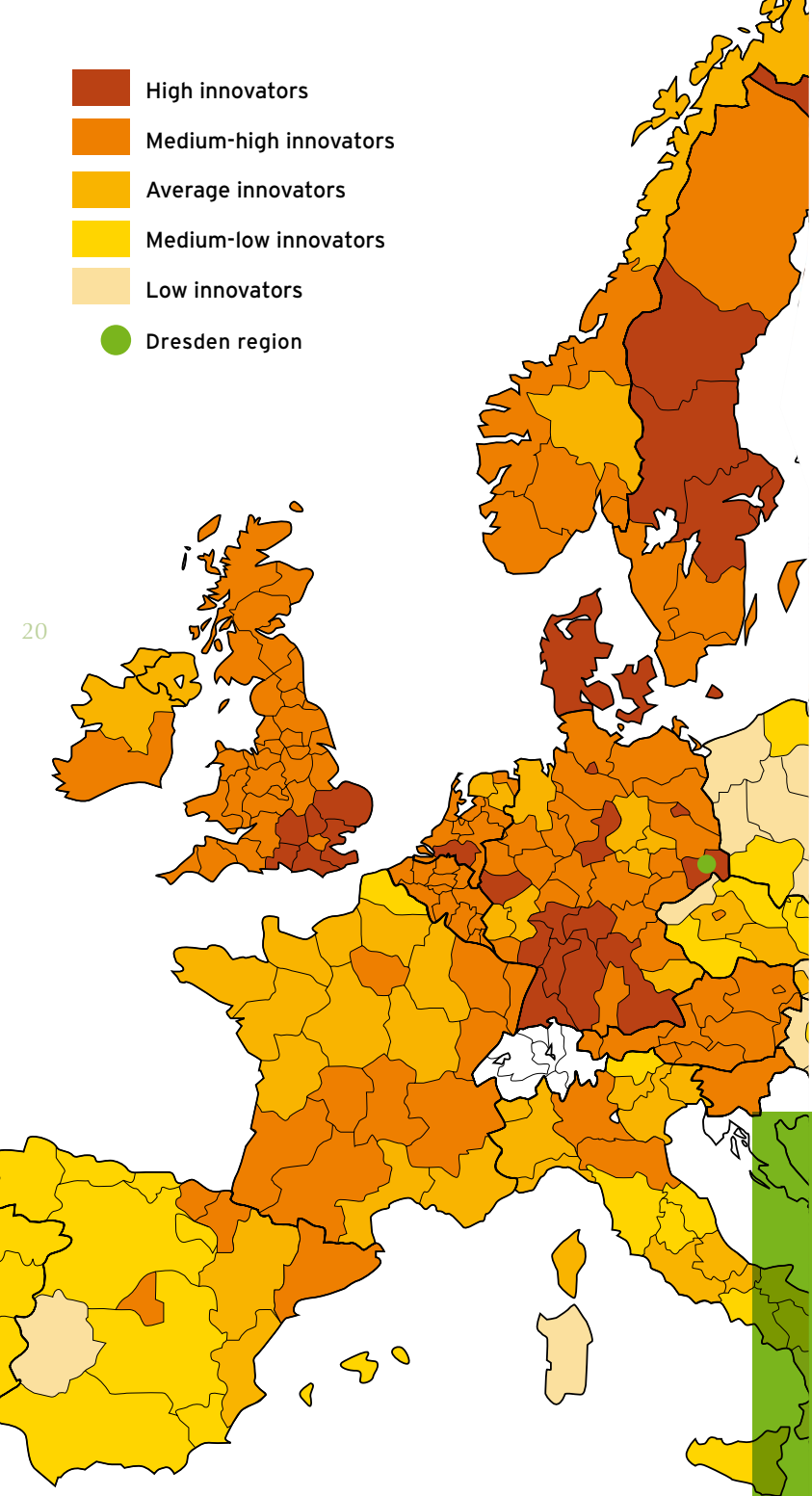
Saxony's particular strong point is its very unique and compact research infrastructure. Saxony is the German federal state with the second most dynamic trend in innovation, the second highest increase in expenditures for research and development, and even the leader in growth regarding the number of employees active in research.

In addition to the universities, countless non-university research associations and societies are also active in Saxony – including 22 industrial research facilities. In particular, the Fraunhofer Society is strongly committed in Saxony and has turned Saxony's state capital Dresden into its largest research center in all of Germany with a total of 11 institutes just here alone.



Science - Facts and Figures

Universities	6
Universities of applied sciences, art academies, universities of cooperative education	26
Fraunhofer institutions	17
Max Planck institutes	6
Leibniz institutes	6
Helmholtz institutions	3



Excellent University Research

It was officially announced in July 2012: The Dresden University of Technology is a »University of Excellence.« This title is bestowed by the German government and the scientific community to outstanding German research universities. Dresden's University was able to score points with its holistic concept for the future, two clusters of excellence, and one graduate school. One of the clusters of excellence is the »Center for Advancing Electronics Dresden (cfAED).« And the Chemnitz University of Technology is »excellent« as well – with its cluster »MERGE – Fusion Technology for Multi-Functional Lightweight Structures.« Throughout Germany, MERGE is the only interdisciplinary cluster for lightweight construction which is one of the key technologies of the future.

Research as an Incentive for Investments

Often, Saxony's topnotch research is the reason why innovative companies decided to set up business in the region: In 2011, AZZURRO Semi-

Diagram

Among the EU regions (NUTS 2), the Dresden region is one of the most powerful locations for innovation. This is confirmed by the European Innovation Scoreboard (EIS) issued by the EU Commission »Enterprise and Industry«.

Picture below right

Five professors from Chemnitz University of Technology also participate in Dresden's Cluster of Excellence »cfAED.« For their research work, they use the clean room at the Center for Microtechnologies (ZfM) where, for example, the optical control of wafers can be carried out.

The »Center for Advancing Electronics Dresden (cfAED)« pools the research expertise of 57 scientists from the universities of Dresden and Chemnitz, and of 9 non-university research institutes with the objective of researching entirely new technologies for the electronic information and data processing of the future in a globally unique, comprehensive, and interdisciplinary approach. On the basis of novel materials – for example, silicon nanowires, carbon nanotubes, organic materials –, new structural elements are being created which help construct innovative information processing systems.



Picture below left

At its Dresden production site, AZZURRO Semiconductors AG develops and produces GaN-on-Si wafers. Compared to conventional GaN wafers, AZZURRO wafers can be processed further on standard production lines of the semiconductor industry which, in turn, results in substantial cost savings.

Picture below center

Compared to conventional production, the innovative casting-rolling process of the Freiberg-based MgF GmbH can actually use lower-priced source materials and has considerably fewer process steps; thus, providing a better output.

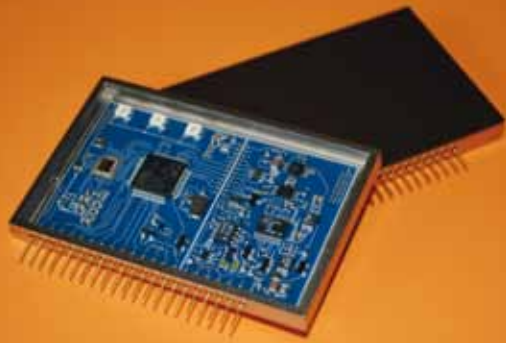
Picture right

40 professorships from universities in Dresden and Freiberg as well as eight non-university research institutions all participate in the Cluster of Excellence »ECEMP – European Center for Emerging Materials and Processes Dresden«. The scientists are developing composite materials for such future fields as lightweight construction, energy and environmental technology.

conductors AG decided to set up a production site for innovative 150 mm silicon (Si) wafers with gallium nitride (GaN) coatings in Dresden. Together with the Dresden-based Nanoelectronic Materials Laboratory gGmbH (NaMLab), an associated institute of the Dresden University of Technology, AZZURRO goes one step further and conducts research on the development of 200 mm GaN-on-Si wafers. NaMLab also works on pure wafers (which actually come without a silicon disk substrate) in cooperation with Freiberg Compound Materials GmbH (FCM), the Freiberg University of Mining and Technology, the Fraunhofer Technology Center for Semiconductor Materials (THM) in Freiberg, and other partners.

Magnesium is the lightest metallic construction material; it, thus, possesses a high potential for lightweight vehicle construction. That is why ThyssenKrupp Stahl AG founded the Freiberg-based MgF Magnesium Flachprodukte GmbH in 2001. Together with the Freiberg University of Mining and Technology, the company develops technologies for the profitable production of magnesium sheets. A hot rolling mill for magnesium flat products was put into operation in November 2010.





»Cool Silicon« In this leading-edge cluster in Saxony, more than 100 partners from research and industry are developing solutions together which significantly reduce the energy consumption in the ICT sector. The results of their work are quite impressive. Thanks to the innovative HKMG-CMOS technology, for example, the life cycle of laptop batteries was increased from 8 hours to more than 10 hours. An innovative power amplifier decreases the energy demand of mobile devices by 15 % and of base stations by 30 %. And jointly developed monitoring sensors for airplanes save up to 25 tons of kerosene on transatlantic flights.



Picture above left

Within the scope of the Cluster of Excellence »Cool Silicon«'s flagship project »CoolSensornet«, energy-autonomous and wireless sensor systems were developed which are designed, for example, for monitoring aircraft wing materials. The complete electronics for the evaluation of sensor signals were manufactured by the Dresden-based ZMDI AG according to the specifications of the Fraunhofer Institute for Non-destructive Testing (IZFP), Dresden Branch.

Picture above right

InEco® consists of steel-CFRP hybrid components. They unite the best properties of both materials, for example, the low weight of CFRP and the malleability of steel. This creates components which are not only extremely lightweight, but can also absorb a lot of impact energy in a crash.

Picture right

The summer highlight in Dresden's cultural life are the »Movie Nights along the Elbe River«, Germany's largest open air cinema festival. With a panoramic view of the baroque »Old Town« quarter, cinema enthusiasts enjoy a multifaceted program of concerts and movies.

Focusing on the Future

The latest development of the Institute for Print and Media Technology at the Chemnitz University of Technology (pmTUC) are loudspeakers which can be printed on standard paper with the flexo printing procedure. This development was created within the scope of the »Plastic Acoustics (PACU)« project whose participants include, among others, the Robert Bosch GmbH and the Chemnitz-based Fraunhofer Institute for Electronic Nano Systems (ENAS). And it isn't just the sound quality of the paper-thin, but robust loudspeakers which is remarkable. They can actually be produced at low cost, printed in color, and come in any shape imaginable. In the future, this will permit not only new, attractive forms of advertising or even sound wallpapers for living rooms at home. Even such technical applications as, for example, distance sensors are imaginable as well because these papers also work in the ultrasonic range.

Such key technologies as lightweight construction and electromobility are joined in an exceptional manner by the scientists at the Institute of Lightweight Engineering and Polymer Technology (ILK) at the Dresden University of Technology. Together with the Leichtbau-Zentrum Sachsen GmbH and ThyssenKrupp corporations, the scientists are developing an ultralight electric car which can be mass-produced. InEco®, that's the name of the project car, stands for »innovation – electromobility – composite.« InEco® is to weigh less than 900 kilograms and attract primarily the interest of commuters and short-distance drivers in urban, metropolitan centers. The intelligent mixture of steel and carbon-fiber-reinforced plastic in the body and chassis of the InEco® is considered to be particularly innovative. This approach makes this project vehicle so unique.



SAXONY!

VIVACIOUS

Culture, Nature & Recreation



Picture left

The »Golden Horseman« is one of Dresden's most famous monuments. It depicts »August the Strong« (1670 – 1733). Saxony's Elector and King of Poland was one of the most dazzling figures in Saxony's history.

Picture above center

Nestled amidst a picturesque historic old town, the Annaberg Christmas Market is one of Germany's most beautiful markets captivating people with its good cheer and quaint charm.

Picture above right

For more than 250 years now, the Gewandhaus Orchestra and the Gewandhaus concert hall in Leipzig have made a vital contribution to the development of classical music; they are both a hallmark of the city and are famed around the world today.

The 18th century court festivals of Saxony's Elector »August the Strong« are legendary. And Saxony continues to be a little baroque even today. That is, when it comes to enjoying life.

Where Classic Meets Cult

The many festivals and festivities are expressions of the Saxon joie de vivre: The Dresden Music Festival, the euroscene Leipzig festival of contemporary European theater, the Dixieland Festival, the wine festivals in the Elbe River valley as well as the traditional Christmas markets in the Erzgebirge region – whether it be traditional or high culture, there is something for everyone.



Picture above left

In the »Zoo of the Future« Leipzig, visitors may experience the animals (almost) in their natural habitat. For example, in the »Kiwara Savannah« where diverse species live together peacefully – among them zebras, giraffes, gazelles, and ostriches.

Picture above center

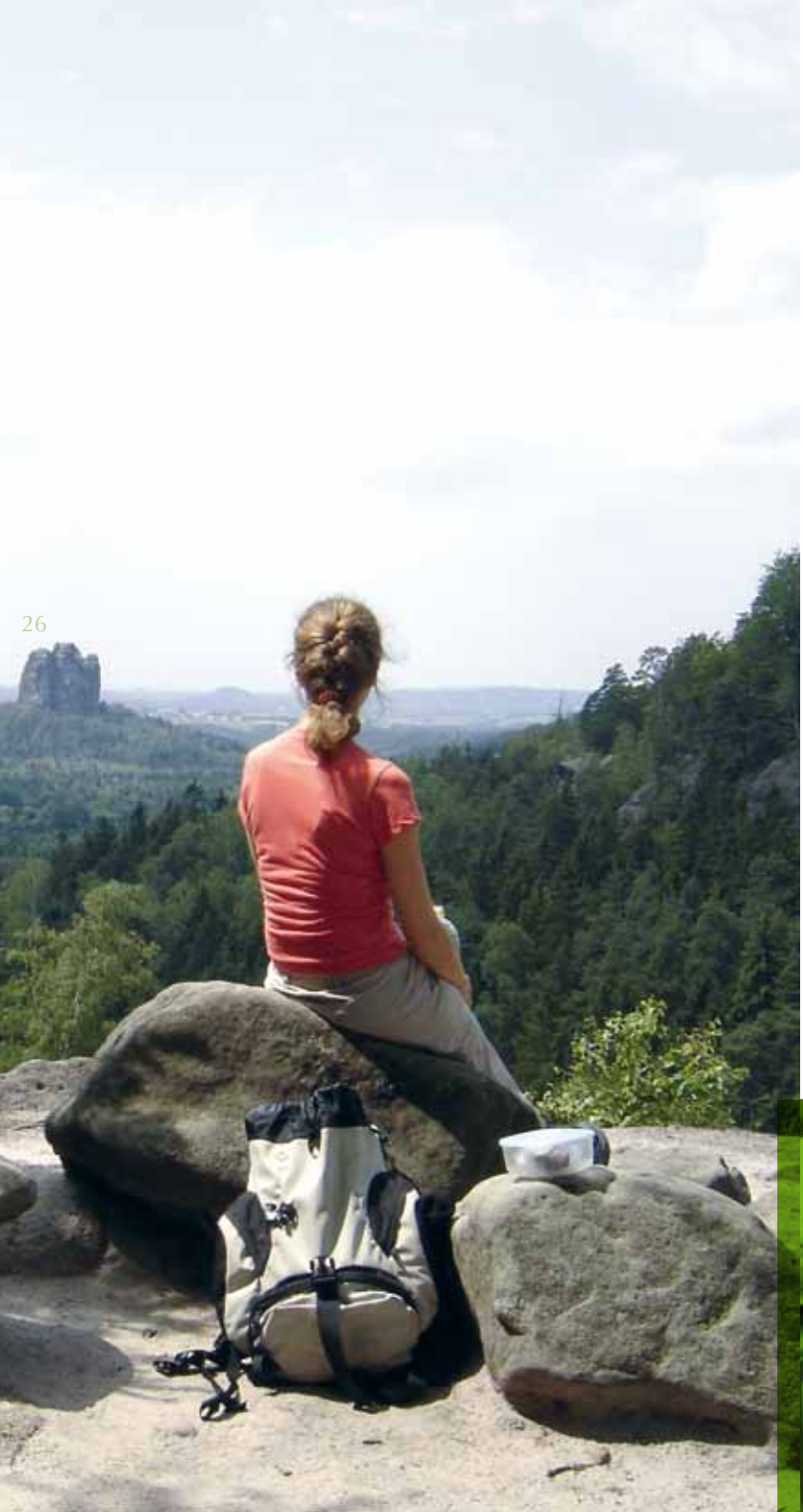
Almost 4,000 architectural monuments spanning 500 years of European building history can be experienced in Görlitz. – For example, during a walk through the Weißstraße in the historic old town quarter.

Picture right

The Dresden State Art Collections (SKD) are among the most important museums in the entire world. A total of 12 museums provide singular highlights – such as, for example, the »Green Vault« as one of Europe's most precious treasure chambers, or Raffael's »Sistine Madonna« which celebrated its 500th anniversary in the »Old Masters Picture Gallery« in 2012.

Vibrant Cities

Those who have admired the Canaletto views of Dresden in the Old Masters Picture Gallery can view the original, baroque »Florence on the Elbe River« just a few steps away and can pay a visit to the reconstructed Frauenkirche Church as well as the Zwinger Court and the Royal Palace. But the large cities of Leipzig, Chemnitz, and Dresden not only excel with their luminous past; as scientific and business centers, they also attract many young people with new ideas today. Even Saxony's smaller cities are well worth discovering: Riesa, the city of sports; Meissen, the city with a thousand years of history; Freiberg, the site of the world's oldest mining university; or Görlitz and Polish Zgorzelec, the twin cities which rehearsed the united Europe.



(Cultural) Landscapes

Saxony enchants. As the Number 1 cultural destination in Germany – but also with marvelous landscapes: These include Saxon Switzerland with its bizarre rock formations, the rolling slopes of the vineyards surrounding Dresden and Meissen, the meandering meadows along the Elbe River, the captivating mountains of the Erzgebirge region, and the dreamy moors and ponds of Upper Lusatia. German and Slav cultural elements converge in East Saxony. Even today, Sorbian influences and customs such as the traditional Easter Ride on horseback are part and parcel of life during all seasons.

Saxony is a land full of (hi)stories and contrasts: Be cast back into the Middle Ages in historic mines along the »Silver Road« and fast forward into the future at Volkswagen's »Transparent Factory« in Dresden. Or listen to the story of the alchemist who accidentally invented the world famous Meissen Porcelain in an attempt to create gold.

Picture left

Following the trails of Caspar David Friedrich, Ludwig Richter, and other artists, the »Painter's Route« in Saxon Switzerland leads hikers to many a breathtaking panorama. – As seen here from the Affensteine rocks to the Falkenstein rock.

Picture below center

More than 300 years of success: Founded in 1710, the MEISSEN porcelain manufactory continues to excel with premium quality grounded in perfected craftsmanship even today. For example, the most popular décor from Meissen, the »Blue Onion Pattern«, has been painted carefully by hand for over 270 years now.

Picture below right

The 55 km long »Saxon Wine Trail« from Pirna via Radebeul and Meissen all the way to the idyllic »Wine Villages« nestled along the Elbe River combines historic points of interest with a charming landscape. For more than 850 years now, vines have been cultivated in Saxony.



Pictures below

Pure nature – this is what the Lusatian Land of Lakes stands for. 23 artificially created lakes characterize and define the landscape. Perfect conditions for any kind of water sports. But guests may also discover and experience the unique natural landscape on many kilometers of superb trails created specifically for cycling and horseback riding.

Picture right

The Altenberg bobsled, luge, and skeleton track (length: 1,413 meters) is one of the most challenging artificial ice tracks in the world. So far, it has been the site of six world championships for bobsled, luge, and skeleton in addition to numerous national championships.

From Water to Winter Sports

Regardless of whether you prefer a leisure hike or a passionate free climb, whether you love skiing or sailing, horseback riding or playing golf, you'll find plenty of diversions here. Discover Saxony's athletic side from its 1,100 climbing rocks in Saxon Switzerland, or its many miles of cross-country ski trails in the winterly Erzgebirge region. And in order to warm up after your fun in the snow, you're cordially invited to soak in adventure pools and relax in wellness spas. Of course, you can also watch athletic records being broken at the international bobsled championships in Altenberg, or follow the sumo wrestling contests in Riesa, the city of sports.





SAXONY!

PASSIONATE

You've read a lot already. Got to know a lot of Saxony's stories. But we don't want to deprive you of a very special one:

Virtually no other object illustrates the Saxon mentality better than Dresden's Frauenkirche Church, its emergence, and its transformation over the course of time. Saxons have always wanted to tackle big projects head-on, to do no less than their very best, and to apply their practical inventive spirit to attain each and every goal.

When it was built in the 18th century, Dresden's Frauenkirche Church was the product of Dresden's self-confident citizenry who had also financed the unique edifice. With the Saxon master builder George Bähr, they had found an architect who had a visionary concept of how to express the self-confident Protestant belief in stone. His idea: An impressive dome made

entirely out of stone, in the form of a bell. Yet Bähr was actually a carpenter. He was the first of his trade to later bear the title architect.

His masterpiece in stone was not expected to last a long time, though. But since its consecration in 1734, the Frauenkirche Church has managed to survive a lot; even a cannonball attack by the Prussian army in 1760 during the Seven Years' War. The cannonballs bounced off the church dome. A frustrated King Frederick II of Prussia supposedly said with a dismissive wave of his hand: »Let the damned thing stand.« It was almost 200 years later that the city's landmark was reduced to rubble during the bomb attack at the end of World War II.

The reconstruction was a new masterpiece. With the ambition of resurrecting the ruined structure in all of its former splendor, the master builders and construction workers picked up the tradition and learned

the old crafts anew. At the same time, ultramodern technologies were used to perfect the static of Bähr's construction and to make the construction efforts more effective. The most prominent example was the huge protective roof which, thanks to a specifically designed hydraulic system, kept increasing its height in line with the construction progress. This roof permitted unimpeded construction even in the winter.

In 2005, Dresden's Frauenkirche Church was reconsecrated. Since that time, the image of its new magnificence and splendor has been going around the globe and has become the new landmark of the City of Dresden and Saxony. Today, it ranks among Germany's most popular attractions.

And when can we do something spectacular for you?

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