Industry Clusters in Eastern Germany

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Foreword

2015 marks the 25th anniversary of German re-unification. On October 3, 1990, the German Democratic Republic (“East Germany”) ceased to exist, becoming part of the Federal Republic of Germany in accordance with constitution article 23 of the West German constitution. Together with the city-state of Berlin, the five re-established federal states – Brandenburg, Mecklenburg-Vorpommern, Saxony, Saxony-Anhalt, and Thuringia – joined the Federal Republic.

Rebuilding the “East” has been one of, if not the most important, political tasks of the Federal Republic of Germany since the start of the 1990s. Never before has there been a reconstruction and investment project of its size and scale. In the 25 years since reunification, Eastern Germany has established itself as a globally competitive industry and technology location. Innovative industry clusters and networks have been central to this recovery and reinvention. Reindustrialization has been and remains the motor driving economic growth in the region.
Today, Eastern Germany has the highest manufacturing gross value added share of the G7 countries after Japan (and Germany’s other federal states). By building on the traditionally strong industrial heritage of the region, Eastern Germany has become an international force in the technology fields of the future.

Research and development in the new federal states stands shoulder to shoulder with the world’s best. The region’s R&D share is higher than the European average, and almost equivalent to that of the USA. The success of the Eastern Germany reconstruction project can also be indirectly measured in inward investment terms: foreign direct investment (FDI) stock levels in the region have almost tripled during the past decade alone.

The courage, imagination, and capacity for reinvention of ordinary East German men and women have helped turn the new federal states into a model market economy.

I am not ashamed to say that I look back fondly on the period of time known as the *Wende* – the “Turning Point” – in our country’s history. However, any feelings of nostalgia I may have are outweighed by my excitement for the future. Today, the new federal states are not so much a region in transformation as they are a major transformative power, with innovative science and industry clusters showing the world the way forward.

The “three i’s” of “investment,” “innovation,” and “internationalization” have been and will continue to be instrumental to Eastern Germany’s regeneration. We will continue to invest, innovate, and internationalize so that the region remains a place where tomorrow’s ideas take hold and new business models can flourish.

Iris Gleicke, MdB
Parliamentary State Secretary at the Federal Ministry for Economic Affairs and Energy and Federal Government Commissioner for the New Federal States and for SMEs and Tourism
The New Federal States

Since reunification in 1990, Germany has been made up of 16 federal states. The region of Eastern Germany consists of six federal states (commonly referred to as the “new federal states”). These are Brandenburg, Mecklenburg-Vorpommern, Saxony-Anhalt, Saxony, Thuringia, and the city state capital of Berlin. The region is home to around 16 million of Germany’s 80 million plus population, of which more than 3 million live in Berlin alone.
Contents

6 Invest
8 The Reunified Germany – An Economic Wonder
9 Rebuilding the East – A New Beginning
10 Industry and Reindustrialization
11 Diversified Industry Landscape

12 Innovate
14 Innovation – The Key to Future Prosperity
15 Investing in Research and Education – Creating a Knowledge Economy

Germany’s Fundamental and Applied Research Institutes
16 Fraunhofer-Gesellschaft
17 Helmholtz Association
18 Leibniz Association
19 Max Planck Society

20 Internationalize
22 The Cluster Concept
22 Germany’s Cluster Policy
26 Europe’s Cluster Excellence Leader

Industry Clusters in Eastern Germany
28 Supraregional Clusters
30 Leading-Edge Clusters

Exemplary Clusters in the New Federal States
32 ICT, Media and Creative Industries – Berlin
34 Transport, Mobility and Logistics – Brandenburg
36 BioCon Valley – Mecklenburg-Vorpommern
38 Silicon Saxony – Saxony
40 SMAB – Saxony-Anhalt
42 OptoNet Photonics Network – Thuringia

44 About Us
46 Imprint
Invest

8 The Reunified Germany – An Economic Wonder
9 Rebuilding the East – A New Beginning
10 Industry and Reindustrialization
11 Diversified Industry Landscape
The Reunified Germany – An Economic Wonder

Today, just a quarter of a century after reunification, Germany’s economy is in excellent shape. Employment levels are at an all-time high, with unemployment rates continuing to fall and labor market developments making a real difference to income levels and the wider economy. All of which contributed to a gross domestic product (GDP) increase of 1.5 percent in 2014 (GDP total of EUR 2,903 billion); with the Federal Government forecasting a GDP increase of 1.8 percent for 2015 and 2016 respectively. Yet reunification burdened the German economy in unprecedented fashion and to such a degree that, for a time, Germany labored under the unfortunate tag of “Sick Man of Europe.” The first steps on the road to recovery were tentative, with annual economic growth averaging 1.2 percent for the period 1998 to 2005.

Germany is now the fourth-largest economy in the world, constituting around one fifth of total European GDP. Germany is also a leading export nation. In 2014, Germany exported goods to the value of more than EUR 1,133 billion – a 3.7 percent increase on 2013 export levels. According to the Organisation for Economic Co-operation and Development (OECD), Germany is the world’s largest exporter in value-added terms behind the United States. Germany is also innovative: accounting for around 12 percent of global trade volume of research-intensive goods.

Even the 2007/08 global financial crisis failed to dent a resurgent German economy; with the country emerging as Europe’s economic engine thanks to an innovation ecosystem conducive to high levels of R&D innovation according to the World Economic Forum (WEF). In a global competitiveness ranking, the WEF places Germany fifth in a ranking of 144 countries.

Historical differences between East and West in terms of quality of life and infrastructure have in many instances all but been eliminated, with per capita GDP growth recorded in Eastern Germany during the past 25 years comparable to that in West Germany during the Wirtschaftswunder (“Economic Miracle”) of the 1950s. Eastern Germany’s economy has been radically overhauled in the past two and a half decades, now being largely made up of internationally competitive small and medium-sized enterprises (SMEs).

Investment, innovation and internationalization provide the basis for the region’s course of sustained economic growth. Investment plays an instrumental role in Germany’s increased competitiveness, lasting prosperity and increased quality of life. Germany’s government has put an increase in public and private investment at the heart of its economic policy; with investment in education and research, infrastructure, and an improved environment for private sector investment central to its long-term strategy.

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Gross Domestic Product by Expenditure (price-adjusted)¹ (percentages changes from year earlier)

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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</thead>
<tbody>
<tr>
<td>Gross domestic product</td>
<td>0.1</td>
<td>1.6</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Private consumption²</td>
<td>0.8</td>
<td>1.2</td>
<td>2.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Government consumption</td>
<td>0.7</td>
<td>1.1</td>
<td>1.5</td>
<td>1.2</td>
</tr>
<tr>
<td>Gross fixed capital formation</td>
<td>-0.6</td>
<td>3.4</td>
<td>2.2</td>
<td>3.1</td>
</tr>
<tr>
<td>of which: Machinery and equipment</td>
<td>-2.4</td>
<td>4.3</td>
<td>2.8</td>
<td>4.3</td>
</tr>
<tr>
<td>of which: Construction</td>
<td>-0.7</td>
<td>3.6</td>
<td>2.1</td>
<td>2.8</td>
</tr>
<tr>
<td>Domestic demand</td>
<td>0.7</td>
<td>1.3</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Exports</td>
<td>1.6</td>
<td>3.9</td>
<td>4.7</td>
<td>4.5</td>
</tr>
<tr>
<td>Imports</td>
<td>3.1</td>
<td>3.4</td>
<td>5.7</td>
<td>5.1</td>
</tr>
</tbody>
</table>

¹Up to 2014 provisional figures from the Federal Statistical Office (February 2015)
²Including non-profit-making organizations
Source: Federal Ministry for Economic Affairs and Energy 2015

Per Capita Growth over a Quarter of a Century (percent by year)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Eastern Germany</td>
<td>3.3</td>
<td>3.2</td>
<td>3.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Western Germany</td>
<td>3.1</td>
<td>3.1</td>
<td>3.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Former socialist Europe *</td>
<td>3.1</td>
<td>3.2</td>
<td>3.3</td>
<td>0.9</td>
</tr>
<tr>
<td>Western Germany</td>
<td>3.1</td>
<td>3.1</td>
<td>3.3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

*Poland, Czech Republic, Slovakia, Hungary (arithmetic mean)
Source: KfW 2014
Rebuilding the East – A New Beginning

Rebuilding the “East” has been one of – if not the most important – political tasks of the Federal Republic of Germany since the start of the 1990s. The economy of the ailing East German state was in a parlous situation in the 1980s. The bankrupt country was unable to provide its own citizens with the basic, daily commodities they needed, and it did not manufacture innovative products for the international market.

A highly developed market economy has sprung up from the ruins of this failed planned economy. Change may have been swift, but the actual process of convergence took place over a number of phases: an initial phase in which the planned economy was transformed into a market economy; a second phase in which state-owned manufacturing sites were privatized and restructured; and a third phase during which new enterprises were set up and economic development supported by generous public subsidy.

Eastern Germany has grown faster than all of the transitioning economies of Central and Eastern Europe. The individual federal states are also better economically placed than all other former socialist states in the region, with international investment in eastern Germany for the period 2003-2013 more than doubling.

A massive program of investment in infrastructure has helped set the path for the steady growth being witnessed in the revitalized region today. According to the state-owned KfW banking group, public and private investment in Eastern Germany since 1991 equates at around EUR 1.6 trillion; during which time the bank itself financed one in every ten euros invested in Eastern Germany – providing EUR 100 billion in loans for SME investment alone.

Since 1991, approximately EUR 82 billion has been invested in federal railways, trunk roads and waterways, as well as local roads and commuter rail transportation as part of the Community Transport Financing Act. This is equivalent to around 36 percent of total federal spending for a region that houses 20 percent of the population and accounts for around 34 percent of the country’s total land mass. Significant and sustained investment in modern information and communications telecommunications (ICT) infrastructure has helped create a digital telecommunications network for optimal, cost-efficient IT and telecommunications provision.

Per Capita Gross Domestic Product 2013
(EU purchasing power standard = 100)

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>47</td>
</tr>
<tr>
<td>Romania</td>
<td>54</td>
</tr>
<tr>
<td>Croatia</td>
<td>61</td>
</tr>
<tr>
<td>Hungary</td>
<td>67</td>
</tr>
<tr>
<td>Latvia</td>
<td>67</td>
</tr>
<tr>
<td>Poland</td>
<td>68</td>
</tr>
<tr>
<td>Estonia</td>
<td>72</td>
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<tr>
<td>Lithuania</td>
<td>74</td>
</tr>
<tr>
<td>Portugal</td>
<td>75</td>
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<tr>
<td>Greece</td>
<td>75</td>
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<tr>
<td>Slovak Republic</td>
<td>76</td>
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<tr>
<td>Czech Republic</td>
<td>80</td>
</tr>
<tr>
<td>Slovenia</td>
<td>83</td>
</tr>
<tr>
<td>Eastern Germany</td>
<td>93</td>
</tr>
</tbody>
</table>

Source: KfW 2014

Concerted and forward-looking reconstruction and development policies involving both public and private partners at national and international levels have helped transform the economic landscape. Traditional economic sectors have been resurrected in some regions, with new economic sectors opening up in others. New federal state GDP levels have more than doubled in the intervening years (EUR 23,585 per capita in 2013 compared to just EUR 7,278 in 1991), with the region expected to achieve parity with the old federal states in less than a decade.

According to the KfW bank, GDP differences between the old and the new federal states are now comparable to regional differences encountered in other advanced economies like Canada, Japan, and the United States.

Today, a quarter of a century on from reunification, the rebuilt Eastern Germany numbers among the world’s most attractive and innovative investment and technology locations.
Research conducted by the KfW bank concludes that the reunified Germany is a country where regional differences of economic performance have largely been overcome, being no more pronounced than in other major industrialized nations – particularly in terms of productivity. This has not gone unnoticed by international investors; with the region proving particularly popular for foreign direct investments in the manufacturing sector (27 percent of all inward investment projects for the period 2008 to 2013).

The transformation of the former East Germany into a region with a strong knowledge-based industry has also been central to establishing the new federal states as a successful export force in international markets. According to the OECD, Germany’s manufacturing exporters continue to increase market share while expanding into new markets, thanks to improved price competitiveness and innovation in sectors where Germany has enjoyed a longstanding comparative advantage. At the federal level, Germany has embarked on a proactive industrial policy to provide the necessary infrastructure and frameworks to support emerging lead markets and technologies for the twenty-first century. The country is widely held up as an example of how a strong industrial sector, placed within a business-friendly framework and an enabling innovation policy can maintain and safeguard economic competitiveness on the international stage.

**Gross Domestic Product Industry Share by G7 Nation (in percent)**

<table>
<thead>
<tr>
<th></th>
<th>Germany-West</th>
<th>Germany-East</th>
<th>G7</th>
<th>UK (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.0</td>
<td>17.3</td>
<td>14.9</td>
<td>10.1</td>
<td></td>
</tr>
<tr>
<td>(max.)</td>
<td>Germany-East</td>
<td>G7</td>
<td>UK</td>
<td></td>
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</tbody>
</table>

Source: KfW 2014
Diversified Industry Landscape

The new federal states are home to a highly diversified industry landscape, reflecting the region’s industrial legacy and its role as the new home of a number of future industry sectors. Industrial operations in Eastern Germany are characterized by modern production facilities, effective management and a highly qualified workforce.

The privatization and restructuring of industry after reunification also saw a renaissance in the small and medium sized enterprise (SME) industry sector (Germany’s fabled Mittelstand). This has helped create a class of industrial SMEs who have subsequently established themselves as European or world leaders in a number of industry sectors as diverse as vehicle construction, polymer processing, wood and paper processing, and glass and ceramics production.

Industries in the new federal states are playing a major role in Germany’s ambitious Energiewende (“Energy Transition”) program; are a driving force in the country’s electric mobility revolution; and finding important medical-technology answers to address pressing population change questions. In the shortest of times, Eastern Germany has become an international byword for excellence in the fields of biotechnology, nanotechnology and new materials, microelectronics, optical technologies, and, of course, renewable energy provision. By building on its traditionally strong industrial heritage, the region has become a major international force in the technologies and markets of the future.
Innovate

14  Innovation – The Key to Future Prosperity
15  Investing in Research and Education – Creating a Knowledge Economy

Germany’s Fundamental and Applied Research Institutes
16  Fraunhofer-Gesellschaft
17  Helmholtz Association
18  Leibniz Association
19  Max Planck Society
**Innovation – The Key to Future Prosperity**

Germany is a major global innovation player, accounting for around nine percent of OECD member country total R&D expenditure. Public and private R&D spending is significantly above the OECD average – thanks to a progressive innovation policy and the country’s longstanding specialization in research-intensive industries. In 2015, a record EUR 14.9 billion in public R&D funding was made available – a EUR 261 million increase on the previous year’s spending and equivalent to a 65 percent increase on 2005 R&D public funding levels.

The new federal states are rightly recognized the world over as a highly competitive and innovative industry and technology location within Germany. Constant investment in innovation has been the key to sustained economic growth and international competitiveness. By building on the traditionally strong industrial heritage of the region, Eastern Germany has become an international force in the technology fields of the future.

Research and development intensity levels in the new federal states compare with the world’s best. Eastern Germany’s R&D GDP share of 2.5 percent is significantly higher than the EU-28 average, and almost equivalent to US R&D share of GDP. R&D spending levels in the new federal states are equivalent to the national R&D budgets of a number of central European countries. Public sector commitment to innovation in the region is further reflected in a public-private R&D spend ratio of 60:40.

As a country, Germany also belongs to the select first group of innovation leaders in the European Commission’s Innovation Union Scoreboard 2015 whose innovation performance is significantly above the European Union average (i.e. more than 20 percent). In 2014, German innovation performance was 22 percent higher than the EU average.

Home to a thriving Mittelstand of SMEs, Germany also leads Europe in terms of company innovation activities (both for science-based activities and non-R&D innovation activities including investments in advanced equipment and machinery); contributing more than one third of total EU business R&D and non-R&D innovation expenditure. Only China exports more research-intensive goods than Germany, with the country ahead of both the USA and Japan.

The high density of innovative networks, research organizations and academic institutes in the new federal states provides the foundation for a market-driven, knowledge-based economy which makes close working partnerships between science and industry possible. Optimized innovation management measures and partnerships with world-class research providers allow companies to significantly reduce their R&D costs. These factors, and an array of innovation-supporting instruments, have helped establish Eastern Germany as one of the world’s most attractive future-technology investment regions.

**Gross Domestic Expenditure – Research and Development**

<table>
<thead>
<tr>
<th>GERD</th>
<th>102,238 USD million PPP (2012) in Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>GERD Intensity and Growth</td>
<td>9.2% of total OECD (2012)</td>
</tr>
<tr>
<td>2.98% of GDP (2012) in Germany</td>
<td>+4.1% Annual Growth Rate (2007-2012)</td>
</tr>
<tr>
<td>2.40% of GDP (2012) for OECD</td>
<td>+2.0% Annual Growth Rate (2007-2012)</td>
</tr>
<tr>
<td>GERD Publicly Financed</td>
<td>0.86% of GDP (2011) in Germany</td>
</tr>
<tr>
<td></td>
<td>+6.3% Annual Growth Rate (2007-2011)</td>
</tr>
<tr>
<td></td>
<td>0.77% of GDP (2011) for OECD</td>
</tr>
<tr>
<td></td>
<td>+2.8% Annual Growth Rate (2007-2011)</td>
</tr>
</tbody>
</table>

Source: OECD Science, Technology and Industry Outlook 2014
Investing in Research and Education – Creating a Knowledge Economy

Central to the region’s dynamic transformation into an innovative industry economy has been the presence of an extensive scientific and research and development infrastructure. At last count Eastern Germany was home to 24 universities, 53 universities of applied sciences and around 200 non-university research institutions. The Higher Education Pact 2020 to promote higher education uptake has resulted in significantly increased university matriculation levels, with the new federal states (excluding East Berlin) recording an 118 percent increase in university enrolment levels during the period 1989 to 2012.

The federal government set aside more than EUR 7 billion in funding for the Higher Education Pact 2020 for the period 2011 to 2015, with complementary research funding of EUR 1.7 billion made available to universities through the German Research Foundation. Substantial non-university-research funding made available through the Pact for Research and Innovation, which enjoyed EUR 4.9 billion additional funding for the period 2011 to 2015, intensifies and accelerates the development of non-university research activity; allowing the country’s major applied and fundamental research institutions to consolidate their leading international positions.

Germany is committed to further strengthening working partnerships between universities and businesses. This will allow leading-edge clusters, future projects and comparable networks to expand their strategic cooperation activities with other innovative regions in the world.

Research and Development-Intensive Industry Sectors in Eastern Germany

Source: Germany Trade & Invest 2015 (based on Wirtschaft und Markt 2011, BMBF geobase data adaptation: Federal Agency for Cartography and Geodesy 011; Cartographic depiction: RISO 2012)
Germany’s Fundamental and Applied Research Institutes

“Eastern Germany is building on the know-how of its industrial past to create solutions for the industries of the future. As such, the new federal states are an important cornerstone of Fraunhofer-Gesellschaft activities in a number of innovative research areas.”

Prof. Dr. Reimund Neugebauer,
President of the Fraunhofer-Gesellschaft

The Fraunhofer-Gesellschaft is Europe’s largest application-oriented research organization. Founded in 1949, the research organization undertakes applied research that drives economic development and serves the wider benefit of society. Its services are solicited by customers and contractual partners in industry, the service sector and public administration.

The Fraunhofer-Gesellschaft currently maintains 66 institutes and research units. The majority of the nearly 24,000 staff are qualified scientists and engineers who work with an annual research budget of more than EUR 2 billion. Of this sum, around EUR 1.7 billion is generated through contract research. More than 70 percent of the Fraunhofer-Gesellschaft’s contract research revenue is derived from contracts with industry and from publicly financed research projects. Almost 30 percent is contributed by the German federal and federal state governments in the form of base funding, allowing the institutes to work ahead on solutions to problems that will not become acutely relevant to industry and society until five or ten years from now.

The Fraunhofer-Gesellschaft plays a prominent role in the German and European innovation process. Through their research and development work, the Fraunhofer Institutes help to reinforce the competitive strength of the economy in their local region, and throughout Germany and Europe. They do so by promoting innovation, strengthening the technological base, improving the acceptance of new technologies, and helping to train the future generation of scientists and engineers. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.

The Fraunhofer-Gesellschaft has institutes and research establishments in all six of the new federal states. Highlights in the organization’s history include the integration of one thousand personnel from the research landscape in the former East Germany, and the creation of ten new Fraunhofer institutes and branch offices in the region during Max Syrbe’s presidency. Today, the Fraunhofer-Gesellschaft has 20 institutes as well as numerous branch offices in the new federal states. Fraunhofer-Gesellschaft received a “Top 100 Global Innovator” award from Thompson Reuters for the second year in succession in 2014. The Fraunhofer-Gesellschaft is a recognized non-profit organization that takes its name from Joseph von Fraunhofer (1787–1826), the illustrious Munich researcher, inventor and entrepreneur.

New Federal State Project Highlight – High Performance Center Micro- and Nanoelectronics (Dresden-Chemnitz)

Four Fraunhofer Institutes in Dresden have joined forces with the Technical Universities of Dresden and Chemnitz and around 20 companies in the field of microelectronics and microsystems to set up a High Performance Center for functional nano- and microelectronics integration. Extended function integration, miniaturization, and connected systems have a decisive role to play in INDUSTRIE 4.0 and the Internet of Things. As the home to a thriving landscape of innovative SMEs in the fields of sensors, actuators, semiconductors and mechanical engineering, Saxony provides an optimal location for the center’s research focus on microelectronic mechanical systems (MEMS) and system integration in industrial automation. Technology and development platforms form a first pillar of the center’s activities, complemented by application-oriented and industry-financed innovation projects for the commercialization of research results.

→ www.fraunhofer.de
“We are proud of our role in strengthening Eastern Germany’s research landscape. Our Helmholtz Centers in the east conduct important and groundbreaking work in fields as diverse as environmental research, geosciences, molecular medicine, radiation oncology, and new materials.”

Prof. Otmar D. Wiestler,
President of the Helmholtz Association

Established in 1995 as a successor organization to the Arbeitsgemeinschaft der Großforschungseinrichtungen (“syndicate of large-scale research institutes”), the Helmholtz Association is dedicated to pursuing the long-term research goals of society, and to maintaining and improving the quality of life of the population. In order to accomplish this, the Helmholtz Association carries out top-level research to explore some of the major challenges facing society, science, and the economy. Research work is covered in six strategic fields: Energy; Earth and the Environment; Health; Key Technologies; Matter; and Aeronautics, Space and Transport.

With nearly 38 thousand staff in 18 research centers and an annual budget of almost EUR 4 billion, the Helmholtz Association is Germany’s largest scientific organization. Around two thirds of funding is provided as institutional support by the federal government of Germany and the German states (in a 9:1 ratio between federal and state contributions). The individual Helmholtz Centers are responsible for attracting more than 30 percent of their research budgets from a variety of funding organizations and sponsors. Targeted funding policies have allowed the Helmholtz Association to develop and expand a number of prominent research institutions for the systematic promotion of research activity in the new federal states. The research landscape in Eastern Germany – for example in Leipzig, Dresden, Potsdam, and Berlin (Buch) – has been significantly enriched by the presence of Helmholtz centers as well as former East German research institutions incorporated into existing Helmholtz centers.

Working closely with international, national and domestic partners, the Helmholtz Association’s large-scale facilities and infrastructure are used to conduct research into complex systems to develop innovative applications and services. Helmholtz transforms scientific knowledge into market innovations, thereby contributing to create the technological basis for a modern and competitive society. The Helmholtz Association carries the name of the German natural scientist Hermann von Helmholtz (1821-1894).

www.helmholtz.de

New Federal State Project Highlight – Helmholtz-Zentrum Berlin für Materialien und Energie (HZB)

The Helmholtz Association has expanded and developed numerous research facilities in the new federal states since reunification. The Helmholtz-Zentrum Berlin für Materialien und Energie (HZB – Helmholtz Center Berlin for Materials and Energy) is meeting the materials and complex material systems challenges of the Energiewende (“Energy Transition”) head on. Energy and matter areas of research activity include the development of thin-film photovoltaics and the conversion of solar energy into chemical energy carriers (e.g. molecular hydrogen). Operating two large-scale research facilities (the neutron source BER II and the synchrotron radiation source BESSY II), the HZB provides a platform for interdisciplinary research and technology transfer. Each year, the HZB offers around 3,000 visiting international scientists from 35 countries access to its state-of-the-art facilities.
"The convergence of the science systems in Eastern and Western Germany counts as one of the great success stories of German reunification. The research landscape has helped create thousands of highly qualified jobs, countless innovations and real economic impetus in the new federal states."

Prof. Dr.-Ing. Matthias Kleiner
President of the Leibniz Association

The Leibniz Association is a non-profit association made up of 89 basic and applied science and research institutions. Non-profit organized in nature, the Leibniz Association promotes science and research objectives among its member institutions with specific significance accorded their scientific, legal and economic independence. Member activities include knowledge-based and applied basic research, scientific infrastructure maintenance, research-based service provision, and eight research museums.

German reunification saw the assimilation of notable East German research institutions into the "Blue List" of science and research organizations compiled by the Science Council. In 1990, the 81 institutions in total awarded "Blue List" status – in Eastern and Western Germany – formed the "Blue List Partnership" formally granting federal and state governments the constitutional right to cooperate on projects beyond regional and state boundaries and in the national scientific interest.

Renamed the "Gottfried Wilhelm Leibniz Science Association" (WGL) in 1997, but more commonly known as the Leibniz Association, the interdisciplinary association promotes partnerships between wholly autonomous research bodies including universities, other research organizations, and the public and private sectors at the domestic and international levels.

The creation of the Joint Initiative for Research and Innovation in 2006 provided significant financial stimulus allowing the Leibniz Association to establish an annual competition with EUR 30 million being made available to outstanding research projects and member institutions. Knowledge transfer is central to Leibniz Association activities, with members identifying areas of research focus for transmission to academic, policy maker, and public and private stakeholders.

Since German reunification, the Leibniz Association has helped numerous innovative business start-ups set up operations in the new federal states. With a workforce of around 18 thousand (including more than nine thousand researchers) in 2014, the Leibniz Association had a federal and state-allocated budget of more than EUR 1.6 billion for the same year.

www.leibniz-gemeinschaft.de

New Federal State Project Highlight – Leibniz Institute for Plasma Research and Technology (INP Greifswald)

The Leibniz Institute for Plasma Science and Technology (INP Greifswald) is the largest non-university institute in the field of low-temperature plasmas, their basics and technical applications in Europe. The institute has already established itself as an internationally visible research focal point in the comparatively young field of plasma medicine. Therapeutic cold plasma applications – largely in the area of skin diseases (e.g. "diabetic foot," pressure/decubitus ulcers, and fungal infections) – are being developed in cooperation with a number of university and clinical partners. The first cold plasma devices, developed in Greifswald, have already been approved for the market with a number of successful spin-off companies and start-ups also originating from the INP Greifswald.
"The rebuilding of Eastern Germany’s scientific infrastructure was a unique opportunity that sparked innovation in many fields of science. In the last 25 years alone, 20 new Max Planck Institutes with a considerable scientific reputation and significant international appeal have emerged. They attract scientists from all over the world.”

Prof. Dr. Martin Stratmann,
President of the Max Planck Society

The Max Planck Society (MPG) is an independent, publicly funded research organization focused on basic research. Established in 1948 as the successor organization to the Kaiser Wilhelm Society (founded in 1911), the Max Planck Society consists of 83 institutes and research facilities (including four institutes in other European countries and one Max Planck Institute in the USA). Each institute is assigned to one of three designated research areas: Chemistry, Physics and Technology; Biology and Medicine; and the Humanities.

The Max Planck Society counts among the world’s most successful research organizations, boasting 18 Nobel laureates from its ranks since the association’s inception. Max Planck Institutes (MPIs) focus on innovative research fields, as well as funding – and time-intensive research areas. New departments or institutes are established to address new and forward-looking areas of scientific inquiry. This process of ongoing renewal allows the Max Planck Society to quickly react to scientific and technological developments. Max Planck Institutes are built up solely around the world’s leading researchers. They themselves define their research subjects, operate in optimal working conditions, and have a free hand in the staff selection process.

More than 21 thousand people work and conduct research on behalf of the Max Planck Society, of which more than five thousand are contractually employed scientists. In 2014, around 7,600 junior and visiting scientists were working in Max Planck Institutes.

In 2014, the Max Planck Society had an annual budget in the region of EUR 1.6 billion. The financing of the Max Planck Society is predominantly comprised of basic financing from the public sector. In addition, third-party funding contributed to basic financing.

Max Planck Institutes are active in more than 4,200 cooperation projects with almost 5,600 partners across the world. The creation of international Max Planck Centers is further expanding the association’s research spectrum in close cooperation with global research partners. Max Planck Centers have been set up in Canada, USA, Great Britain, Denmark, Israel, India, South Korea, Japan, France, and Switzerland. The Max Planck Society is represented by Max Planck Institutes in all six new federal states.

www.mpg.de

New Federal State Project Highlight – Max Planck Institute for Evolutionary Anthropology (Leipzig)

Working with an international team, researchers at the Max Planck Institute for Evolutionary Anthropology in Leipzig, led by Prof. Dr. Svante Pääbo, identified the first genome sequence from the Neanderthal human form in 2010 – 30 thousand years after modern man’s genetic forefathers disappeared. The four-year-long analysis of four billion base pairs of Neanderthal DNA represents a pioneering scientific achievement and is very much typical of the long-term, technology resource-intensive research projects conducted by the Max Planck Society. The results obtained from this ground-breaking palaeogenetics research activity shed new light on the evolution of man – most amazingly, that one to four percent of modern human genetic material is derived from our Neanderthal antecedents.

Photos: Oliver Lang, Axel Griesch/MPG

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Photos: Oliver Lang, Axel Griesch/MPG
Internationalize

The Cluster Concept
Germany’s Cluster Policy
Europe’s Cluster Excellence Leader

Industry Clusters in Eastern Germany
Supraregional Clusters
Leading-Edge Clusters

Exemplary Clusters in the New Federal States
ICT, Media and Creative Industries – Berlin
Transport, Mobility and Logistics – Brandenburg
BioCon Valley – Mecklenburg-Vorpommern
Silicon Saxony – Saxony
SMAB – Saxony-Anhalt
OptoNet – Photonics Network – Thuringia
The Cluster Concept

Germany is home to an impressive number of regional and national networks and clusters. The rapid proliferation of science and industry clusters can be attributed to Germany’s advanced level of industrial diversity aligned to a sustained and forward-looking innovation policy.

Clusters are perhaps best understood as referring to a fixed geographical locus in which a complete industry supply or value chain can be found. As such, clusters represent self-sufficient networks made up of companies, research institutions and other public and private organizations joined by a set of shared objectives. Clusters can be industry, technology or innovation objective led, and follow a range of interaction models (science-science, science-industry, and industry-industry) subject to requirements. Geographical proximity and complementary area of activity help promote an interactive culture of mutually advantageous knowledge transfer between the different cluster actors. Cluster pooling of resources along the supply chain creates a competitive environment conducive to sustainable innovation and accelerates the commercialization process for improved “time-to-market.” In an age in which global markets govern, specialist industry clusters have a significant role to play in helping companies, technology locations, and even countries, secure a decisive competitive international advantage.

Germany’s Cluster Policy

Germany has embarked on a proactive industrial policy to provide the necessary infrastructure and frameworks to support lead markets and technologies for the twenty-first century. The country’s forward-looking cluster policy has its roots in the mid-1990s with the creation of a number of national and federal support programs (e.g. “BioRegio” Competition) to support productivity and innovation – particularly at the small and medium-sized enterprise level – through cooperation between regionally aligned value chain partners.

Eastern Germany is home to a diverse number of industry networks and clusters that act as important impulse givers in their respective sectors. The federal and state governments have launched a comprehensive raft of measures to support cluster development, based on each individual state’s respective industry, science and research strengths. The German federal government’s cluster strategy encompasses the following activities:

- Competition to promote exchange processes between universities and companies
- Region-specified measures to foster the development of clusters
- Measures to foster the development of clusters in individual fields of technology
- Cross-industry competence creation
- Cutting-edge cluster competition

High-Tech Strategy

Launched in August 2006, the “High-Tech Strategy” represents the first national concept to bring key innovation and technology stakeholders together in a common purpose of advancing new technologies. The initiative combines the resources of all government ministries, committing billions of euros annually to the development of cutting-edge technologies as part of a broader policy framework conducive to innovation. Specific focus is provided to supporting SMEs and innovative start-up companies in research-intensive industries. More than EUR 1.4 billion in funding was made available to SMEs for cutting-edge research purposes in 2013 alone, with SMEs enjoying a disproportionately high share – around half – of federal government R&D funding for industry.

New High-Tech Strategy

Building on the achievements of the High-Tech Strategy to date, the new High-Tech Strategy accords clusters a special role in attaining its stated objective of establishing Germany as a global innovation center and industry and export nation. Improving regional SME contact to international centers of growth and value creation is central to the new strategy, with the promotion of innovation in Eastern Germany likewise afforded special priority status.

The New High-Tech Strategy

Priority challenges with regard to value creation and quality of life

Networking and transfer

Transparency and participation

The pace of innovation in industry

Innovation-friendly framework

Source: Federal Ministry of Education and Research 2014
### Leading-Edge Cluster Competition

The most high-profile instrument of the Federal Government’s cluster promotion policy, the “Leading-Edge Cluster Competition” was officially launched in 2007 by the Federal Ministry for Education and Research (BMBF). Created within the broader framework of the Federal Government’s High-Tech Strategy, the Leading-Edge Cluster Competition was the first nationwide cluster-funding program open to all technologies. Fifteen Leading-Edge Clusters were identified during three rounds of competition held between 2007 and 2012. Individual winning clusters identified in the three rounds of competition receive up to EUR 40 million in funding over a five-year period. Of the three Leading-Edge Clusters located in Eastern Germany (“Cool Silicon,” “Solarvalley Mitteldeutschland,” and “BioEconomy”), two (Cool Silicon and Solarvalley Mitteldeutschland) have completed their competition-supported projects and are continuing their strategy by working with other clusters and already act as highly visible anchor sites in their respective regions. BioEconomy, the third Leading-Edge Cluster in Eastern Germany, successfully completed a preliminary evaluation in 2014 and will continue to receive funding through to 2017.

### Internationalization of Leading-Edge Clusters, Forward-Looking Projects, and Comparable Networks

Innovation through international cooperation between German clusters, networks and innovation regions is promoted through this follow-up competition measure foreseen for the period 2015 to 2021. On the basis of the internationalization concept, individual R&D partnership projects will be developed with partners from the prioritized international innovation regions. Joint activities with international partners will receive funding of up to EUR 4 million over the five-year duration of the three rounds of competition.

### go cluster

Launched in 2012, the “go cluster” excellence program brings together more than 100 innovation clusters from across Germany, with around one quarter of member clusters located in Eastern Germany. Cluster members are at the cutting edge of innovation and serve to represent the technological diversity within Germany’s industry and technology sectors. The program provides financial stimulus – in the form of support for innovative services and funding for novel solutions – to optimize cluster management allowing German clusters to position themselves as highly effective and visible international clusters.

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### Leading-Edge Cluster Competition Recipient Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Percent of Funding Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>20.6</td>
</tr>
<tr>
<td>SMEs</td>
<td>28.7</td>
</tr>
<tr>
<td>Non-university research facilities</td>
<td>11.5</td>
</tr>
<tr>
<td>Large corporations</td>
<td>33.0</td>
</tr>
<tr>
<td>Other players</td>
<td>6.2</td>
</tr>
</tbody>
</table>

Source: Federal Ministry of Education and Research (BMBF), Division for New Innovation Support Instruments and Programmes 2015

Needs-based services are provided to all cluster target groups in line with the stated program objectives to:

- support the transformation of the most efficient national innovation clusters into international clusters of excellence;
- promote new cluster services to stimulate cluster managers to offer new services;
- increase international visibility of participating innovation clusters;
- analyze international cluster policy trends to identify recommendations for Germany.

Compliance with go-cluster membership quality criteria also prepares clusters for European Cluster Excellence Initiative silver and gold excellence label certification. go cluster membership provides numerous advantages to innovation clusters, actors and partners. These include:

- Quality and efficiency certification (European quality standards)
- Eligibility to apply for funds
- Use of “go cluster” word mark and logo
- Participation and increased visibility in government initiatives
- Increased national and international visibility

A comprehensive overview of the German cluster landscape and activities at EU, federal and state levels is available online at Clusterplattform Deutschland.

www.clusterplattform.de
German innovation policy pays specific focus to the practical R&D needs and requirements of SMEs who do not ordinarily have access to the same resources as large enterprises. The “Entrepreneurial Regions,” “Central Innovation Programme for SMEs (ZIM),” and “INNO-KOM Ost” initiatives are just three programs making an important difference for SMEs in Eastern Germany.

**Entrepreneurial Regions Innovation Initiative**
The “Entrepreneurial Regions” innovation initiative promotes the formation of internationally competitive science–industry centers of excellence in Eastern Germany.

Entrepreneurial Regions consolidates six programs (Centres for Innovation Competence; Innovation Forums; InnoProfile; ForMaT; Twenty20 – Partnership for Innovation; and InnoRegio) in one closely integrated financial support instrument to promote the special character of innovation in Eastern Germany.

The initiative stands for innovation-oriented regional alliances which develop the region’s identified core cluster competences along market-specific lines. Its goal is the sustainable transfer of these competences to innovations, economic growth and employment. In following these objectives, the “Entrepreneurial Regions” development programs establish the basis for the creation of internationally competitive, regional economic clusters.

Central to each regional initiative is a clear innovation strategy geared towards the implementation of newly developed products, procedures and services in the competitive landscape.

**Central Innovation Programme for SMEs (ZIM)**
The Central Innovation Programme for SMEs (ZIM) is a nationwide funding program for SMEs and partner research establishments. ZIM has been open to all industry branches and technological sectors as a source of support for innovation efforts since 2008. The aim of ZIM is to sustainably increase the innovative capacity and competitiveness of SMEs including craft businesses and independent professions, and in doing so contribute to their growth and the generation of new jobs.

**Individual Project Funding:**
Funding may be provided for R&D projects undertaken by individual companies including small and medium-sized companies in accordance with the definition of an SME and other SMEs with up to 500 employees including affiliated or partner companies.

**Cooperation Project Funding:**
Funding may be provided for cooperation R&D projects undertaken by several companies or between companies and research institutes which are small and medium-sized companies in accordance with the definition of an SME; other SMEs with up to 500 employees including affiliated or partner companies; and public and non-profit-making private research institutes. Cooperation projects can receive funding covering between 35–50 percent of costs. Grants payable to research establishments can cover up to 100 percent of costs affiliated or partner companies; and public and non-profit-making private research institutes. Cooperation projects can receive funding covering between 35–50 percent of costs. Grants payable to research establishments can cover up to 100 percent of costs.

**Cooperative Network Project Funding:**
Grant funding is made available to cover share of network management personnel costs. This is equivalent to up to 90 percent of eligible costs in the first phase (up to one year) and phase two (with 70 percent in first year followed by 50 percent and 30 percent in years two and three respectively).

Revised ZIM guidelines were published in April 2015. Applications can be submitted continuously through until 31 December 2019.

Public cluster funding operates at two levels: at the federal level with funding largely provided by the Federal Ministry for Economic Affairs and Energy (BMWi) and the Federal Ministry of Education and Research (BMBF); and at the individual federal state level. Cluster support programs operating at the state level typically support emerging clusters. Federal level funding generally provides dedicated research and development funding to the most competitive clusters like those identified as part of the Leading-Edge Cluster Competition.

**Public Cluster Funding**

Public cluster funding operates at two levels: at the federal level with funding largely provided by the Federal Ministry for Economic Affairs and Energy (BMWi) and the Federal Ministry of Education and Research (BMBF); and at the individual federal state level. Cluster support programs operating at the state level typically support emerging clusters. Federal level funding generally provides dedicated research and development funding to the most competitive clusters like those identified as part of the Leading-Edge Cluster Competition.
Small companies in the new federal states may be eligible for...

- 45% funding for individual projects
- 50% funding for coop. project
- 55% funding for international coop. project with international partners

Small companies in the old federal states may be eligible for...

- 40% funding for individual projects
- 45% funding for coop. project
- 55% funding for international coop. project with international partners

Mid-sized companies may be eligible for...

- 35% of their individual projects funded
- 40% of their coop. project funded
- 50% funding for international coop. project with international partners

Other mid-sized companies may be eligible for...

- 25% funding for individual projects
- 30% funding for coop. project
- 40% funding for international coop. project with international partners

Source: Federal Ministry for Economic Affairs and Energy 2015

**INNO-KOM Ost ("Innovation Competence East")**

In order to hold their own in international competition, small and medium-sized enterprises need access to research facilities whose R&D activities are specifically tailored to suit their needs, and the results of which can be quickly implemented and transferred. The objective of the INNO-KOM Ost program is to strengthen Eastern Germany’s innovative power through support activities designed to promote the innovative performance capability of the region’s non-profit industrial research institutions.

**Promoting SME Cluster and Network Partnership**

During the period 2008 to 2013, the share of SMEs working with universities rose from over 16 percent to almost 43 percent. The number of SMEs partnering with non-university research institutes increased from over 15 percent to almost 40 percent.
### Europe’s Cluster Excellence Leader

According to the European Secretariat for Cluster Analysis (ESCA), maturity levels within the German cluster landscape allow German clusters to consistently exceed European average levels in terms of cluster structure; typology, governance and cooperation; financing; and strategy, objectives, services. This is reflected in the high number of German clusters awarded Gold, Silver and Bronze Labels as part of the European Cluster Excellence Initiative (ECEI).

Eastern Germany’s mature cluster landscape adheres to the philosophy that common standards for excellent cluster management return a healthy dividend of increased efficiency, improved competitiveness for cluster members, and increased return-on-investment for investors.

### European Cluster Excellence Initiative (ECEI) Indicator Performance – Clusters in Germany

| Structure of the cluster                  |  
|------------------------------------------|---|
| Committed cluster participation         | ![bar_chart] |
| Composition of the cluster participants | ![bar_chart] |
| Number of committed cluster participants in total | ![bar_chart] |
| Geographical concentration of the cluster participants | ![bar_chart] |

| Typology, Governance, Cooperation       |  
|-----------------------------------------|---|
| Maturity of the cluster management      | ![bar_chart] |
| Human resources available for cluster management | ![bar_chart] |
| Lifelong learning aspects for the cluster management team | ![bar_chart] |
| Stability and continuity of human resources of the cluster management team | ![bar_chart] |
| Stability of cluster participation     | ![bar_chart] |
| Clarity of roles – involvement of stakeholders in decision making processes | ![bar_chart] |
Financing

Prospects of the financial resources of the cluster organization

Share of financial resources from private sources

Strategy, Objectives, Services

Documentation of the cluster strategy

Working groups

Achievements, Recognition

Recognition of the cluster in publications, press, media

Success stories

- Clearly above the European average and fully in line with the requirements of ECEI
- Minimal criteria for good practice in cluster management according to the ECEI are not met
- European average and partly fulfilling the requirements of ECEI

Source: Cluster Management Excellence in Germany: German clusters in comparison with European peers, European Secretariat for Cluster Analysis (ESCA), 2013
Supraregional Clusters

Eastern Germany is also home to a small group of supraregional industry clusters with a presence in more than one state. Showcasing the diversity of industry in the new federal states, they range from the region’s thriving clean technology sector and its resurgent automotive industry to new chemicals synthetics technologies.

Automotive Cluster Ostdeutschland (ACOD)

The Automotive Cluster of East Germany (ACOD) is an initiative of the new federal states for the sustainable development of the automobile industry in Eastern Germany. Established in 2004 by the automobile manufacturers who had newly located to the region, the cluster platform now counts suppliers, service providers, research institutes, and trade associations responsible for revenue in the EUR 38 billion region and a workforce of more than 180 thousand among its members. ACOD strives to pool regional activities, promote synergies and establish a competitive automotive supplier industry within the automotive sector in the new federal states. Working within a number of competence areas (from lightweight design to energy-efficient production), ACOD members benefit from access to research institutions and associations not typically available to SMEs, allowing them to provide services to both OEMs and other direct suppliers. Four state initiatives – automotive BerlinBrandenburg e. V., automotive Mecklenburg-Vorpommern, MAHREG Automotive, and Saxony Automotive Supplier Network (AMZ) – directly interact with ACOD through the Cluster Hub coordination platform.

www.acod.de
Cleantech Initiative Ostdeutschland – CIO (Cleantech Initiative Eastern Germany)
Set up by the Federal Ministry of the Interior (BMI) in February 2011, the Cleantech Initiative Ostdeutschland (CIO) was created in order to bundle the significant potential in the “clean technology” sector within a sustainable network of companies, research institutes and other actors that transcend industry and federal state boundaries; and to implement environmentally friendly, energy-efficient, and resource-efficient management in all areas. According to the Ifo Institute – Leibniz Institute for Economic Research, cleantech potential, measured as a share of the overall economy, is higher in the new federal states than in the west of the country. Building on these strengths – by integrating these competences in a meaningful and sustainable way – is the goal of the Cleantech Initiative Ostdeutschland. The significant economic potential available in the cleantech sector in the region was most recently underpinned by a KPMG study (2013) putting turnover among the three thousand-plus companies active in the sector’s six lead markets in the EUR 31 billion region. The initiative is currently made up of around 80 active members from the manufacturing and service sectors. By providing a platform for cleantech activity in Eastern Germany, the Cleantech Initiative Ostdeutschland brings together different industry actors to strengthen the region’s position as an international center of clean technology excellence. Committed to establishing Eastern Germany as a major cleantech hub, the CIO network is represented in the states of Berlin, Brandenburg, Saxony, Thuringia, and Saxony-Anhalt.

CeChemNet – Central European Chemical Network
Five of Eastern Germany’s chemical site operators – BASF Schwarzheide GmbH, ChemiePark Bitterfeld-Wolfen GmbH, Dow Olefinverbund GmbH, InfraLeuna GmbH and Infra-Zeitz Servicegesellschaft mbH – have joined forces to create CeChemNet (Central European Chemical Network). The partnership is complemented by the participation of the north-east regional association of the Verband der Chemischen Industrie e. V. (“German chemical industry association”). The different chemical sites are characterized by specific areas of expertise that have arisen from the different privatization models and the transformation process in the chemical industry in Eastern Germany. All operating companies are distinguished by a special professional competence in dealing with complex restructuring processes as well as highly individualized performance spectra and site conditions. Also of particular note is the interlinking of the different sites and companies through a complex feedstock integration of pipelines and logistics networks. Within the framework of CeChemNet the partners follow an objective of developing the existing chemical sites further and to increase their competitiveness while safeguarding and creating jobs. Existing value chains are optimized together in terms of downstream industries. Chemical site networking is intensified within the feedstock networks. CeChemNet provides a basis for mutual experience exchange and contact management in the region and with national and international partners.

www.cechemnet.de

www.cleantech-ost.de
Leading-Edge Clusters

Fifteen Leading-Edge Clusters have been identified within the framework of Germany’s High-Tech Strategy in Germany. Science and industry work in tandem in industry-specific clusters that enjoy substantial public-private partnership R&D funding. Those clusters identified as “Leading-Edge Clusters” receive public funding of up to EUR 40 million over a five-year period.

Of the three Leading-Edge Clusters located in Eastern Germany (Cool Silicon, Solarvalley Mitteldeutschland, and BioEconomy), two (Cool Silicon and Solarvalley Mitteldeutschland) have completed their competition-supported projects and are continuing their strategy by working with other clusters and already service as highly visible anchorage sites in their respective regions. BioEconomy, the third Leading-Edge Cluster in Eastern Germany, successfully completed a preliminary evaluation in 2014 and will continue to receive funding through to 2017.

BioEconomy (Halle)
The vision of the BioEconomy cluster is to establish the world’s first bioeconomy on a regional scale (“The future of the bio-based economy begins in Central Germany”). Activities focus on the development, upscaling and application of innovative technological processes for the sustainable use of non-food biomass, especially beech wood, to generate materials, chemicals, products made from new materials, and energy sources. The cluster combines the expertise of over 100 research and industry partners conducting research in 45 joint and about 145 sub-projects along the wood and chemical value chains. The promotion of close interworking between the core wood, chemicals and plastics industry sectors for the first time allows a cross-industry value chain to be created. Cluster participation is open to all companies and organizations seeking to create new value chains and market potential. Cluster partners include the Fraunhofer Center for Chemical Biotechnological Processes (CBP), the German Biomass Research Center (DBFZ), and the Helmholtz Centre for Environmental Research Leipzig – UFZ (Leipzig) as well as companies including Linde Engineering, Ante-Holz, Homatherm, ThyssenKrupp Industrial Solutions and Global Bioenergies.

www.bioeconomy.de
Cool Silicon (Dresden)
Located in the state of Saxony, the Cool Silicon cluster in Dresden was set up to develop energy-efficient – and even zero energy – solutions in the three ICT focus areas of computing, broadband wireless and sensor networks. Key competences in the region’s “Silicon Saxony” network are micro- and nanotechnologies and their related fields of application. Saxony has established itself as a major semiconductor technology force and enjoys far-reaching competences in broadband wireless systems and sensor networks technologies. More than 100 companies and research facilities are hard at work developing climate friendly ICT solutions as the cluster seeks to establish itself as one of the world’s leading locations for energy-efficient ICT solutions.

www.cool-silicon.de

Solarvalley Mitteldeutschland (“Solar Valley Central Germany”)
Providing a platform for interdisciplinary, cross-sector cooperation, Solarvalley Mitteldeutschland brings actors from business, science and education together for the development and creation of sustainable energy solutions. The new federal states of Saxony, Saxony-Anhalt and Thuringia enjoy the highest density of photovoltaics (PV) companies in Europe. Science and industry partners are working together to optimize PV products and production technologies. Milestones already recorded to date include grid parity of PV-generated power in 2012. Solarvalley Mitteldeutschland is made up of 35 companies, nine research facilities and four universities. Since 2009, more than 100 projects endowed with a budget of EUR 120 million have been concluded within the cluster. New PV activities are being conducted on four levels (research and development; science and education; extension of cross-state network; and evaluation of the innovation process) within the framework of the SMART ENERGY Eastern Germany strategy concept. Internationalization is also high on the cluster agenda, with framework conditions and innovations for the European PV sector agreed and put in place with 15 partners from nine European countries as part of the EU SOLARROK (“Solar Regions of Knowledge”) initiative.

www.solarvalley.org
Berlin’s ICT, Media and the Creative Industries cluster is one of five dynamic, interstate clusters set up as part of the Innovative Capital Region consisting of Brandenburg and Berlin. The five designated areas of interstate cluster activity (energy technology; life sciences and healthcare; ICT, media and the creative industries; photonics; and transport, mobility and logistics) concentrate the respective strengths of innovative industries in the two states, and are intended to strengthen the German capital region in international competition. With annual overall turnover of EUR 30 billion, the cluster is an essential part of the capital region economy.

The German capital enjoys an international reputation as a place where creative ideas can be realized. Future industries like the ICT sector find a proper home in Berlin, which provides the right mix of internationality and innovation necessary for success in global markets. Domestically, Berlin’s creative sector generates turnover of nearly EUR 8 billion – equivalent to around 8.5 percent of the gross value added of the city’s economy.

The ICT, Media and the Creative Industries cluster in Berlin and Brandenburg is a by-word for above average growth rates, with more than EUR 28.3 billion turnover generated by a 238 thousand-strong workforce active in more than 46 thousand companies – running the gamut from advertising and media agencies to software developers and ICT providers. Twelve technology parks and 29 start-up centers provide support services to technology-oriented businesses.

**Facts and Figures**

<table>
<thead>
<tr>
<th>Number of companies</th>
<th>Workforce</th>
<th>Number of research institutions (university and non-university)</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>46,920</td>
<td>238,287</td>
<td>100*</td>
<td>EUR 28.3 billion</td>
</tr>
</tbody>
</table>

*total number within the Innovative Capital Region of Berlin and Brandenburg


IT research is well served by the presence of the Hasso-Plattner Institute in neighboring Potsdam; seven Fraunhofer Institutes; the Ferdinand-Braun Institute for Microwave Engineering; the Zuse Institute Berlin; and the Institute of Microelectronics in nearby Frankfurt (Oder).
Cluster management services are provided by the State Senate of Economics, Technology and Research and the Brandenburg Economic Development Board (ZAB). Berlin Partner for Business and Technology supports cluster management and is responsible for numerous activities in specific action fields within the cluster. Berlin Partner also provides business and technology promotion services for companies, investors and science institutes in Berlin. With carefully tailored services and excellent links to research, Berlin Partner’s experts provide a comprehensive range of services to help companies launch, innovate, expand and secure their economic future in Berlin.

Cornel Pampu
Head of Division Digital Economy, Media, Creative Industries, Senate Department for Economics, Technology and Research

What do you consider to be the advantages of Berlin as an industry and technology location?
Berlin’s uniquely high concentration of application-based non-university and university research and teaching makes it a rich source for new ideas, technologies and solutions – which are applied in various ways in different industry sectors. Berlin is truly international and a magnet for creative and highly qualified people. Education, research, start-ups and established companies are linked together in a targeted way at our “Future Locations” [Berlin locations identified as potential sites for science-based network structures between science and industry]. Combined with Europe’s leading tech start-up and creative economy ecosystem, many cross-innovation solutions are developed here.

How can international companies benefit from being part of the ICT, Media and Creative Industries cluster?
Cluster development is actively supported by the states of Berlin and Brandenburg via cross-state cluster management. Berlin’s business development policy in the ICT, Media and Creative Industries cluster has enjoyed an exceptionally high share of funding available in the ProFIT [Investitionsbank Berlin] and “Joint Task – [commercially] Improving Regional Economic Structures – GRW” [Federal Ministry for Economic Affairs and Energy] funding programs as well as from technology and creative economy venture capital funds. Companies in the cluster received EUR 74 million in funding in 2014 alone. This is equivalent to almost 60 percent of total funding subsidies of EUR 132 million in 2014. But it’s not just subsidies that have a role to play. The cluster supports companies in their regionalization as well as their internationalization strategies. Joint exhibition stands allow companies to take part in important trade fairs at home and abroad. And last but by no means least: We bring all of the different actors together. Using our “Old Meets the New Economy” and “Advertising Meets Business” formats we are able to target and match different actors in and beyond the cluster to create new partnerships.

What are the most notable project successes you have had in the cluster to date?
Our cluster management has already been awarded two prizes – that makes us proud. The Design Transfer Bonus program has been recognized across Europe as a best practice example for cross-cluster promotion. More than 100 projects have received assistance; projects from which more than 250 applications have been developed. With our excellent structures of networks and multipliers we are able to make sure that program and competition calls are heard in the scene. Effective communication is particularly important in the start-up phase of a new program, as there are no available points of reference and the conditions are similarly new. All of the actors involved have pulled together to create a Europe-wide best practice example. Or look at joint exhibition stands at exhibitions and trade fairs. When it comes to own trade show presence, small and medium-sized companies can quickly reach their financial and organizational limits. Yet it is participation at exactly these trade fairs that is so important to helping open up new markets.

Thanks to the close cooperation of cluster actors, over 200 companies were present at more than 20 trade shows in Germany and overseas in the last year alone.
Brandenburg’s Transport, Mobility and Logistics (VML – Verkehr, Mobilität und Logistik) cluster is one of a number of dynamic, interstate clusters belonging to Brandenburg and Berlin. The VML cluster has been set up to specifically address the challenges of sustainable mobility – of both people and goods – in the global age. Established in May 2011, the VML cluster represents an agreement between the two states to promote and follow a growth-oriented and resource-saving cluster policy.

The VML cluster comprises the aerospace; automotive; logistics; rail transport engineering; and traffic telematics industries. International companies – including Rolls-Royce, Mercedes Benz, ZF and Bombardier – in all of these sectors have successfully settled in the state. Brandenburg counts among Europe’s main developers of state-of-the-art aircraft turbines. Practically every vehicle out and about on Germany’s roads incorporates parts made in Brandenburg.

The German capital region has also established itself among the top three logistics locations in Germany. Companies embedded in the network of Europe’s most important transport corridor benefit from excellent infrastructure and access to nearly all European growth markets within one day’s truck drive. All of the leading logistics companies are represented in the region.

Highly interdisciplinary in nature, the VML eschews the conventional focus on one mode of transportation in favor of an investigation of the transportation, mobility and logistics interactions that occur across industry sectors. Building on existing networks, the VML cluster optimizes the region’s competence profile by adhering to a policy of continual development and delivers important contributions to future transport systems in a number of joint projects. The VML cluster enjoys the pooled resources of around 200 thousand people working in more than 17 thousand companies and over
What do you consider to be the advantages of Brandenburg as an industry and technology location?
Brandenburg is the broad industrial belt surrounding Germany’s capital Berlin. Industry and technology – particularly in the areas of transportation, mobility and logistics – have been experiencing a major upswing in the region for some years. Businesses benefit from Europe’s modern transportation corridors (that go right through Brandenburg), commercial real estate in the best locations, and – very important – access to highly trained personnel. Brandenburg’s specialist personnel services accord the state a pioneer economic development role in Germany. This pays off: Brandenburg now counts among Germany’s leading logistics locations. Logistics in the region is enjoying a real boom, particularly in the freight centers around Berlin.

The region has also established itself as a leading engine technology location, with renowned global players including Rolls Royce and MTU taking their place alongside a highly innovative Mittelstand of small and medium-sized enterprises. Automotive companies are also investing sustainably in the state. Berlin-Brandenburg is also developing a supplier landscape – originating with ZF Brandenburg and taking in everything from Mahle and Schaeffler to the VW Design Center Potsdam – around OEM flagship Mercedes.

How can international companies benefit from being part of the Transport, Mobility and Logistics (VML) Cluster?
The state government’s “Strengthening Strengths” promotion policy supports the development of strong clusters. Investments are supported with up to 40 percent for small companies and up to 20 percent for large companies. A comprehensive range of coordinated instruments are available for innovation purposes – from innovation vouchers to joint projects. Especially attractive: Brandenburg supports the recruitment of skilled personnel. Brandenburg’s business development agency, the Brandenburg Economic Development Board (ZAB), has set up a special department (“ZAB Arbeit” – “ZAB Employment”) especially for this purpose. This pays off for the economy. Last year alone, 114 companies invested more than EUR 800 million connected to more than three thousand jobs. Over and above this, the cross-state cluster management offered by Brandenburg and Berlin opens up the doors to a highly concentrated university and research landscape – unparalleled in Germany – in the capital region.

What are the most notable project successes you have had in the cluster to date?
As the leading location for engine technology, a network between science and industry, particularly in the areas of testing and simulation, has been created. The resulting expertise – developed by global players including Rolls-Royce, MTU and AneCom AeroTest – enjoys international renown. A major EU-wide research project (“Shift2Rail”) built around international transportation specialist Bombardier’s facility in Hennigsdorf has been set up to provide a cooperation platform to drive innovation in the next years. And so the Brandenburg transport, mobility and logistics success story continues.
BioCon Valley is the central contact point for life sciences and the health economy in Mecklenburg-Vorpommern. Established in 1996 as one of the German Bio-Regions identified in the German federal government’s BioRegio competition, the BioCon Valley initiative represents the interests of its approximately 150 members in northeastern Germany.

Concentrating the region’s life sciences and health economy players in one network, BioCon Valley supports the development of the national and international profile of the cluster’s biotechnology and health economy competence areas.

With offices in the university cities of Greifswald and Rostock, BioCon Valley bundles Mecklenburg-Vorpommern’s considerable life sciences and health economy strengths in the form of a unique public-private partnership. Cluster services provided include network management; regional, national and international networking; marketing initiation; and project group management as well as public relations measures and expert meeting and convention event organization.

Since its launch, BioCon Valley has been active as an initiator and partner in a multitude of research and networking projects representing the full range of life sciences and health economy sector activity in the region. Activities include participation in national and international clusters like BIOKATALYSE 2021 (industrial biotech), SUBMARINER Network (marine biotech) and HICARE (infection control, health innovation and medtech) as well as the establishing of a nationally renowned Center of Competence for Diabetes Mellitus.

BioCon Valley also hosts the National Conference on Health Economy held annually in Rostock; an established platform for the health sector that has grown in international renown in recent years.
Michael Sturm
Managing Director,
Invest in Mecklenburg-Vorpommern GmbH

What do you consider to be the advantages of Mecklenburg-Vorpommern as an industry and technology location?
The first thing that comes to mind is the clear commitment to the health economy as a focal point for regional development by the Federal State of Mecklenburg-Vorpommern. A good example here is the Board of Trustees for the Health Economy bringing together politics, economy, and science – in a manner unparalleled in Germany – to foster the development of the health economy location. In addition, a Strategy Council for Economy and Science has been active for years in strengthening the profile of the region as a research and technology location. Some EUR 168 million in European funds have been allocated for economically oriented research and development through to 2020. Productive universities, modern infrastructure and a highly qualified workforce are providing a capable basis for this. The state’s central position between Berlin, Hamburg, Szczecin, and Copenhagen adds extra points.

Lars Bauer
CEO, BioCon Valley GmbH

How can international companies benefit from BioCon Valley network membership?
As a central point of contact, the BioCon Valley initiative is connecting politics, economy, and science – bringing together the sectors with their stakeholders and activities. BioCon Valley is generating visibility – regionally, nationally, and internationally – a significant factor for the region with its mostly small and medium-sized companies and institutions. As one of the German BioRegions and a co-founding member of the ScanBalt BioRegion network, BioCon Valley has been both initiating and partnering numerous national and international projects; thereby contributing to the networking process of regional science and industry, boosting international cooperation, and providing access to new markets.

What are the most notable project successes you have had in the BioCon Valley network to date?
If I could just name a few concrete examples.

PlantsProFood
BioCon Valley initiated and coordinated an “Innovative Regional Growth Core” in order to make proteins and fiber from domestic blue lupine available for widespread use in the food industry. This led to the formation of the Prolupin company in 2010. The company was awarded the “German Future Prize” by Federal President Joachim Gauck in 2014.

HICARE
The “HICARE Action Alliance against Multi-Resistant Organisms” was selected as one of five German “Health Regions of the Future.” The project partners are searching for ways to hinder the further spread of multi-resistant bacteria. BioCon Valley operates the project office and contributes to the “Transfer” work package.

SUBMARINER
Up until 2013, some 19 institutions from eight Baltic Sea states cooperated to identify new applications for marine resources. BioCon Valley coordinated the Mecklenburg-Vorpommern work packages. The partners have continued the work in the SUBMARINER Network for growth in the blue bioeconomy. BioCon Valley and the region also successfully participate in EU funding calls, for example through the “HealthShare” and “Blue Biotech Alliance” consortia.

INTERNATIONALIZE

BioCon Valley has also established strategic partnerships with other globally competitive health economy and biotechnology regions (e.g. Denmark, Finland, Norway, Poland, Sweden and the Baltic Sea Region as a founding member of the ScanBalt BioRegion network). More recently, BioCon Valley has also been focusing activities on member nations of the Gulf Cooperation Council (GCC) and Vietnam as well as evaluating cooperation with emerging markets including Turkey. Through its activities, BioCon Valley is a strategic partner of the German federal state of Mecklenburg-Vorpommern represented by the Mecklenburg-Vorpommern Ministry for Economic Affairs, Construction and Tourism.

www.bioconvalley.org
Silicon Saxony was established as a network for the semiconductor industry by a group of 20 partners in 2000. Today, the 300-plus member strong initiative counts as one of Europe’s most successful semiconductor, electronic, microsystems, and software industry trade associations.

Set up to strengthen the sustainability of the business region as an information and communication technology (ICT) location domestically and internationally, Silicon Saxony operates as a communication and partnership platform for its members. Knowledge transfer and intra-company synergies are created as a result of close cooperation within the network, further consolidating the region’s reputation as a center of ICT excellence.

The association also promotes the development of new technologies – including for example, cyber-physical systems like those used in INDUSTRIE 4.0 – and procedures through its working groups which provide a platform for dialogue between members and specialists.

Silicon Saxony counts as the biggest high-tech network for the microelectronics, smart systems, photovoltaic, software, and applications sectors in Europe. Silicon Saxony works closely with network partners at the national and international levels, and as coordinator of the strategic Cluster Alliance Silicon Europe, plays a major role in strengthening the European nano- and microelectronics landscape. Silicon Saxony was awarded the GOLD label of the European Cluster Excellence Initiative (ECEI) for excellent cluster management in 2012, putting it among the first three clusters in Europe to receive the award.

www.silicon-saxony.de
What do you consider to be the advantages of Saxony as an industry and technology location?
Saxony has counted among the most innovative economic regions in Germany for some time now. Thanks to a smart business location policy, Saxony has developed to become one of Europe’s leading microelectronics locations. As the only ICT cluster, we have kept up with the competition from Asia. Moreover, science and business are extremely interconnected [in Saxony]. The almost legendary Saxon ingenuity also comes combined with enormous motivation levels. That is why the fourth industrial revolution [INDUSTRIE 4.0] is being significantly driven and shaped by Saxony.

How can international companies benefit from being part of the Silicon Saxony cluster?
Our members remain informed about industry focal points, identify the newest trends and find cooperation partners through our numerous events and cluster channels and, as such, are supported in the implementation of innovative ideas. We help them to enter new markets by organizing joint trade fair booths and business trips. We help connect our members across different sectors, thereby opening up the potential for innovation at the interfaces of a number of different high-tech industries. We work closely with industry networks in order to act with one voice at the regional, national and European policy levels. In addition, we also provide support to educational establishments and are active on behalf of the next generation of skilled workers.

What are the most notable project successes you have had in the cluster to date?
Cool Silicon, the Federal Ministry of Education and Research (BMBF) Leading-Edge Cluster, is successfully conducting energy-efficiency research in 47 projects with 112 partners. Total project funding of EUR 140 million funding (50 percent subsidy) was made available for this purpose. The very first cross-sectoral and intraregional cooperation was set up with the “CoSi4” project. Innovative ideas at the intersection between optics and microelectronics were generated in four priority areas.

The EU-funded “C3-Saxony” project has identified 44 project ideas in the overlap between biotechnology (with a specific focus on medical technology and personalized medicine) and microelectronics. Of these, 21 have been qualified further, with the three best projects receiving an “Emerging Industries” special prize.

With support from the BMBF, we have developed “smart city” ideas in interdisciplinary workshops with administrators, arts and culture sciences, and the ICT sector. A final selection was then presented to a broad Dresden public for further discussion. Thanks to a public-private partnership we have also been able to send a cluster ambassador to the leading US semiconductor region in order to initiate cooperation and technology-transfer projects on behalf of Saxon companies and research establishments.
Mechanical engineering is one of the most important industry sectors in Saxony-Anhalt. High technological standards and great innovative potential act to secure system leadership in the fields of fluidized bed processes, conveyor technology and innovative software solutions.

Industry focal points include equipment and mechanical engineering, robotics, smart production (i.e. INDUSTRIE 4.0), process development, efficient and intelligent manufacturing techniques, and environmental systems as well as resource efficiency and recycling. One in five of Saxony-Anhalt’s manufacturing industry employees work in the mechanical engineering sector, responsible for generating around 10 percent of total manufacturing industry turnover in the state. The industry is also one of Saxony-Anhalt’s top export business sectors.

SMAB – Sondermaschinen- und Anlagenbau (“Special-Purpose Machine and Plant Engineering”) supports companies in developing interlinked system solutions, energy-efficient systems and manufacturing technologies as well as medical technology products and services. Thanks to stable partnerships with research institutes and strong networks, companies are able to pool their expertise, develop an attractive technological base, and thus improve their national and international market opportunities. Mechanical engineering counts among Saxony-Anhalt’s top export business sectors.

Cluster activities support the companies in their competences and help establish and promote national and international product development cooperation, R&D projects and manufacturing partnerships.
Dr. Günter Ihlow  
Chief Executive, tti Magdeburg GmbH

What do you consider to be the advantages of Saxony-Anhalt as an industry and technology location?
The machine and plant engineering sector in Saxony-Anhalt celebrates its 200th anniversary this year. Once a center for heavy engineering, Saxony-Anhalt is now a high-tech location; and one that ranks among the technology leaders in the fields of special and tool mechanical engineering, interlinked systems, and fluidized bed technology. An engineering-oriented research landscape with universities and private technology centers form the basis for the high technical and technological level [in Saxony-Anhalt]. The excellent networking of industry and research institutions is intensified by industry-led cluster initiatives and federal state promotion as part of the Regional Innovation Strategy.

How can international companies benefit from being part of the SMAB cluster?
The Special-Purpose Machine and Plant Engineering (SMAB) cluster is effectively a “virtual company extension” along the value chain. As such, all of the characteristics of a large enterprise are made available to the companies in the cluster: from R&D to construction and production as well as human resources and internationalization activities. This allows companies to focus on their core business. Thanks to the cluster, small and medium-sized companies – typical of the region – are able to react to and respond to customer demands with a greater degree of flexibility than would otherwise be the case. As a result, all companies are able to handle even the most complex jobs.

SMAB enjoys partnerships with a number of complementary industry clusters including the automotive, chemicals/plastics, and renewable energy networks in the region. Saxony-Anhalt also boasts a number of complementary machine and plant engineering clusters and networks.

What are the most notable project successes you have had in the cluster to date?
The companies in the cluster are specialized in special-purpose engineering, production of metal products, and the repair and installation of machinery and equipment. Cluster management supports business and operational development issues with EUR 8 million annually as well as promoting startups. Another focus is the development of product-specific networks (such as the production of special industrial valves), the development support for REMAN technologies in large engines, pumps, conveyor technologies and rail vehicles, and the implementation of new products in the field of self-sufficient energy generation. The SMAB cluster also organizes an annual mechanical engineering conference covering high-performance machining, equipment for nuclear power plant decommissioning, and energy efficiency in manufacturing. Another important area of activity is participation in international trade fairs and matchmaking events. The universities and research institutions – as well as the state government – are our partners in all of these activities. A new activity focal point is the intensification of cooperation with the newly established Medical Technology cluster.

According to a report carried out by the Federal Ministry for Economics Affairs and Energy (BMWi), SMAB belongs to the select group of excellence innovation clusters in Germany, affording the cluster a unique value proposition within Saxony-Anhalt. Cluster management services are provided by the tti Technologietransfer- und Innovationsförderung Magdeburg GmbH company (“tti Technology Transfer and Innovation Support Magdeburg”). The company is responsible for promoting the economic development of the northern part of Saxony-Anhalt within the framework of European innovation and technology transfer projects carried out in the federal state.

INTERNATIONALIZE
OptoNet e. V. represents the interests of around 100 actors in Thuringia’s thriving photonics cluster – one of the world’s leading locations for light technologies – providing a lively platform for expert exchange as well as promoting member networking and partnership.

The cluster follows the objective of promoting optical technologies in the region – with specific focus attached to Thuringia and the cities of Jena, Erfurt, Ilmenau and Gera – in order to improve competitiveness and optimize cluster visibility both nationally and internationally.

Around 175 companies and numerous research institutions of international repute active in the field of optics/photonics are concentrated in the technology region, with around one in ten German photonics companies located in the Free State of Thuringia. As well as classical optics manufacturers, the cluster also numbers image processing, measuring and sensor technology, laser technology and laser material processing, optoelectronic component and systems providers and manufacturers, and companies from the medical technology and life sciences sectors.

Beyond internationally renowned companies like ZEISS, JENOPTIK, SCHOTT and Jena-Optronik (Airbus Group), OptoNet e. V. includes a large number of small and medium-sized technology company members whose products and services also play a leading or decisive world market role. Research community members number three Fraunhofer Institutes (including the Fraunhofer Institute for Applied Optics and Precision Engineering – IOF), the Leibniz Institute of Photonic Technology (IPHT), and numerous institutions of higher education.

### Facts and Figures

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<thead>
<tr>
<th>Number of companies (life science sector)</th>
<th>Workforce</th>
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<tr>
<td>175</td>
<td>15,200</td>
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<tr>
<th>Number of research institutions (university and non-university)</th>
<th>Turnover</th>
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<tr>
<td>9</td>
<td>EUR 2.85 billion</td>
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Source: OptoNet e. V. and State Development Corporation of Thuringia
All told, the region boasts a research workforce of 1,300 active in university and non-university research institutions. The density of companies and research institutions over a relatively small geographical area is characteristic of Thuringia’s “Optics Valley” and a major location advantage over other photonic centers in Europe.

An impressive export rate of around 66 percent speaks for the cluster’s high level of international engagement and the competitiveness of the products produced.

www.optonet-jena.de
www.invest-in-thuringia.de/en/top-industries

Dr. Klaus Schindler
Chief Executive, OptoNet e. V.

What do you consider to be the advantages of Thuringia as an industry and technology location?
Of particular relevance for the photonics industry is one thing: Thuringia can look back on a more than 100-year tradition as an optics location. Many newly grounded companies were able to build on this after 1990, and enter the world market with innovative products and technologies. The high concentration of stakeholders – from industry, science and education – located in a relatively small geographical area is an important location advantage for photonics from Thuringia and, simultaneously, the basis for a particularly productive partnership culture.

How can international companies benefit from being part of the OptoNet cluster?
For many small and medium-sized companies it’s first and foremost about having a stable representation of their interests. To be perceived as an innovative, high-performance industry with national and international appeal is essential in the competition for qualified personnel. Over and above this we also provide companies with a partnership platform, organize national and international trade fair presence, and actively support joint R&D projects. Technology workshops and conferences allow us to promote the specialist development of the region. Small and medium-sized companies benefit in particular from our diverse networking activities and contacts. Our subsidiary company helps secure concrete R&D project funding and provides innovation management consultancy services.

What are the most notable project successes you have had in the cluster to date?
We are extremely delighted to have been named as a winner in the Federal Ministry of Education and Research’s “Internationalisation of Leading-Edge Clusters, Forward-Looking Projects, and Comparable Networks” competition. Our winning “Global Power: Photonic Solutions for Questions for the Future” project is creating a mid- to long-term road map for the internationalization of cluster activities as well as up to three R&D projects with selected clusters in the USA, Canada, Japan, and South Korea.

In addition, international exchange programs, the internationalization of the workforce and start-up activity support play a key role. This project will allow OptoNet to raise its international activities to a completely new level, to further professionalize and offer new services to our members. Other successful projects amongst others include the OptoNet-coordinated fo+ (freeform optics plus) growth core, in which 10 leading cluster representatives are working on the development of innovative freeform optics. Our OptoNet MASTER+ project is helping promote the next generation of researchers: highly motivated and high-achieving students in optics-related Master’s study programs are prepared for a career in the Thuringian photonics sector as part of a one-year excellence program. Company working conditions are also becoming increasingly important in the competition for skilled specialists. As part of our “GAP – Gesunde Arbeit in Pionierbranchen” (“Healthy Working in Innovative Industries”) project, we are working closely together with scientists and occupational physicians to develop recommendations for improving the working environment in the INDUSTRIE 4.0 age.
Germany Trade & Invest

Germany Trade & Invest (GTAI) is the economic development agency of the Federal Republic of Germany. The company helps create and secure extra employment opportunities, strengthening Germany as a business location. With more than 50 offices in Germany and abroad and its network of partners throughout the world, GTAI supports German companies setting up in foreign markets, promotes Germany as a business location and assists foreign companies setting up in Germany.

Investment Location Services
- Market and industry reports
- Market entry analyses
- Business and tax law information
- Business and labor law information
- Funding and financing information

Business Location Services
- Legal and tax-related project support
- Funding and financing advisory services
- Site visit organization
- Local partner and network matchmaking
- Public and private partner coordination

GTAI’s teams of industry experts will assist you in setting up your operations in Germany. We support your project management activities from the earliest stages of your expansion strategy. We provide you with all of the industry information you need – covering everything from key markets and related supply and application sectors to the R&D landscape.

Foreign companies profit from our rich experience in identifying the business locations which best meet their specific investment criteria. We help turn your requirements into concrete investment site proposals; providing consulting services to ensure you make the right location decision. We coordinate site visits, meetings with potential partners, universities, and other institutes active in the industry.

Our team of consultants is at hand to provide you with the relevant background information on Germany’s tax and legal system, industry regulations, and the domestic labor market. GTAI’s experts help you create the appropriate financial package for your investment and put you in contact with suitable financial partners. Incentives specialists provide you with detailed information about available incentives, support you with the application process, and arrange contacts with local economic development corporations. All of our investor-related services are treated with the utmost confidentiality and provided free of charge.
Powerhouse Eastern Germany

The activities that market Eastern Germany as a business location to the world’s most important economic nations are bundled together under the “Powerhouse Eastern Germany” umbrella brand. Prospective international investors are advised about market opportunities available in the new federal states.

Germany Trade & Invest’s Powerhouse Eastern Germany team promotes the benefits of doing business in the new federal states to international investors as well as seeking to increase the opportunities of Eastern German businesses in the international marketplace. International business delegation and exchange trips play a central role in achieving this dual objective. Powerhouse Eastern Germany branded conference and trade fair visits and special events help communicate the message that the regenerated region has established itself as one of Europe’s most attractive and innovative production and service locations. Particular focus is attached to the region’s strong and dynamic industry sectors including the renewable energies, chemical, mechanical engineering, automotive, biotechnology, and service sectors. All international companies interested in locating in Eastern Germany are supported by Germany Trade & Invest and the responsible economic development agencies of the respective new federal states.

For more information contact: eastern-germany@gtai.com
About Us
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