INDUSTRY OVERVIEW

The Electronics and Microtechnology Industry in Germany

ISSUE 2019/2020
Industry Innovation for the Digital Economy

“The vision and investment in Industrie 4.0 has started bringing together some very interesting vendors and concepts that we are convinced will play a big part of the future of the plant floor. Being an engaged part of this ecosystem was a major factor in founding our new German subsidiary.”

Ed Nabrotzky
CSO, Omni-ID

Germany is recognized world over as an innovative microelectronics production and research location. The country is by some distance Europe’s leading production and sales market. One in three chips produced in Europe today is made in Germany.

The country boasts an unparalleled density of renowned R&D institutes and world-leading manufacturers and suppliers for electrical and electronic materials, components, and equipment across the value chain. These range from microelectronic components to electrical household appliances, automation systems, electronic medical equipment, and automotive electronics. It enables companies to develop cutting-edge technologies that perfectly address tomorrow’s digitalization needs.

Germany will continue to strive to provide top-class technological performance through its outstanding infrastructure, prestigious international research facilities and dynamic investment climate. Investment opportunities are many and varied. Plug in and find out why Germany satisfies the essential conditions for market success in one of the world’s most dynamic industry sectors.
The German Electronics Industry in Numbers

Germany’s industry numbers speak for themselves and for a secure and successful investment in the country.

Europe’s Biggest Electronics Market
Germany is Europe’s number one electronics market in production and sales terms. Germany’s electronics & microtechnology (E&M) industry generated turnover of EUR 191.5 billion in 2017, with an export share of around 52 percent. Total industry turnover is forecast to grow to EUR 197 billion in 2018. Employing a workforce of more than 1.5 million at home and abroad, the E&M sector represents the second-largest industry segment in Germany in manpower terms.

Research and Development Leadership
Electronics and microtechnology in Germany is exemplified by its innovativeness: EUR 17.2 billion is invested in research and development (R&D) annually. As a result, companies generated almost one third of 2018 turnover from products less than three years old. As well as making provision for significant internal R&D expenditure, the German E&M sector spends about EUR 10 billion on external R&D – this is equivalent to almost half of the country’s external R&D investments. Research personnel within the German E&M industry is equivalent to around 29 percent of all R&D employees in German industry.

Technological Trends
The German electronics industry is increasingly focusing its activities in automotive and industrial electronics. This is being driven by megatrends including smart manufacturing (Industrie 4.0), e-mobility, and the German energy transition towards renewable energy.

Industry Sector Turnover in Germany in EUR billion

<table>
<thead>
<tr>
<th>Sector</th>
<th>2016</th>
<th>2017</th>
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<tbody>
<tr>
<td>Total Turnover</td>
<td>EUR 1.4 bn</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EUR 191.5 bn</td>
<td>298</td>
<td>308</td>
</tr>
<tr>
<td>EUR 26.5 bn</td>
<td>858,000</td>
<td></td>
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<tr>
<td>52% Export Share</td>
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Industry Sector Employees in Germany yearly average in thousand

<table>
<thead>
<tr>
<th>Sector</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Employees</td>
<td>5.3 m</td>
<td></td>
</tr>
<tr>
<td>EUR 851,000</td>
<td>854</td>
<td>858</td>
</tr>
<tr>
<td>52% Export Share</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Federal Statistical Office, VDMA 2018

*excluding information technology
Photonics and Optical Technologies

Germany boasts one of the world’s most thriving and innovative photonics sectors. German companies are world leaders in a number of photonics areas including laser technology, lighting, microscopy, and imaging.

Europe’s Photonics Leader
Germany is Europe’s leading photonics nation, with more than 41 percent of continental production. Since 2005, the photonics industry has grown at a rate double that of domestic and global GDP (between six and seven percent annually). Germany enjoys around six percent share of the global photonics market. An export quota rate of around 70 percent testifies to the international competitiveness of innovative photonics solutions made in Germany. Since 2011, domestic production volume has grown at an annual average growth rate of three percent – from EUR 27 billion to its current level of EUR 31 billion. This is forecast to rise to around EUR 39 billion in 2020 according to the VDMA (Mechanical Engineering Industry Association).

Technology for the Digital Transformation
Photonics have a pivotal role to play in the global digital transformation as key enabling technologies thanks to their tool, sensor and visual communication properties. Optical sensing and imaging, computer vision and optical communication, materials processing, and 3D printing are central drivers of digitalization. The digitalization of technologies, production environments and the world of work creates new and disruptive business models and networks. The image processing & measurement technology (22 percent share), medical technology & life sciences (19 percent), optical components & systems (18 percent), and production technology (15 percent) represent the major photonics subsector markets within the country. According to the VDMA, photonics is one of Germany’s most research-intensive sectors, with high R&D spending levels maintained since 2011. Average company R&D spending of nine percent of revenue underpins the importance of photonics to domestic economic growth and innovation.

German Photonics Production 2016 and Forecast 2020
in EUR billion

<table>
<thead>
<tr>
<th>Category</th>
<th>2016</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Processing &amp; Measurement Tech.</td>
<td>6.4</td>
<td>8.2</td>
</tr>
<tr>
<td>Medical Technology &amp; Life Science</td>
<td>6.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Optical Components &amp; Systems</td>
<td>5.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Production Technology</td>
<td>4.4</td>
<td>6.2</td>
</tr>
<tr>
<td>ICT, Displays</td>
<td>3.9</td>
<td>4.9</td>
</tr>
<tr>
<td>Light Sources</td>
<td>3.8</td>
<td>3.7</td>
</tr>
<tr>
<td>Photovoltaics</td>
<td>1.9</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Source: Optech Consulting 2017
Networks and Clusters

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 the country’s advanced level of industrial diversity, aligned to a sustained and forward-looking innovation policy. Generous R&D funding promotes innovation as part of a long-term roadmap for the photonics future.

Max Planck School of Photonics

The Federal Ministry of Education and Research (BMBF) has announced support for a new network of excellence under the lead of the Fraunhofer Institute of Applied Optics and Precision Engineering (IOF). The new Max Planck School of Photonics (MPSP) focuses the key strengths of the German photonics community and aims to provide world-class research support. The consortium aims to connect all major and innovative photonics communities to an interdisciplinary cluster. The MPSP will share in annual funding of EUR 9 million for an initial period of five years.

OptecNet Deutschland

The German optics and photonics industry is concentrated within several clusters and industry associations. Regional clusters are organized in OptecNet Deutschland – the association of the German Regional Competence Networks for Optical Technologies. Founded in 2000 as an initiative of the BMBF, OptecNet Deutschland is the supraregional association of the seven regional competence networks. OptecNet’s mission is to support the optical technologies as key technologies for Germany.

go-cluster Initiative

The Federal Ministry for Economic Affairs and Energy (BMWi) “go-cluster” excellence program brings together around 100 innovation clusters from across Germany. Cluster members are at the cutting-edge of innovation and represent the technological diversity with the country’s industry and technology sectors. The initiative provides financial stimulus – in the form of support for innovative services and funding for novel solutions – to optimize cluster management. Membership provides numerous advantages to innovation clusters, actors and partners. Of the 17 photonics clusters and networks recognized by the Clusterplattform Deutschland, 15 enjoy go-cluster status.

www.clusterplattform.de
Industry Spotlight: Additive Manufacturing

Germany is one of the world’s leading additive manufacturing nations. The country’s “Made in Germany” manufacturing renown is set to help it lead the way into the future along the value chain in materials, devices and applications.

Europe’s Additive Manufacturing Leader
Additive manufacturing, also commonly known as 3D printing, developed out of rapid prototyping and exceeded USD 6 billion according to the Wohlers Report 2017. The aerospace and automotive industries are the most promising additive manufacturing application industries according to a recent Ernst & Young study. Germany is a leader in both of these major industry sectors.

Aerospace
The aerospace industry requires lightweight parts that are strong, geometrically complex and manufactured in small lot sizes. This has led to the sector becoming an early adopter of additive manufacturing. Germany is a main Airbus site, with 3D printing application largely driven out of Hamburg. Parts are already in the air in certain aircraft, achieving weight decreases of between 30 percent and 55 percent, and up to 90 percent energy efficiency increases across the entire production process.

Automotive
The automotive industry is already a major user of rapid prototyping equipment: additive manufacturing technologies are being applied for the manufacture of functional prototypes and for small and complex parts for luxury and antique cars. The automotive industry’s adoption of additive manufacturing is projected to increase from USD 365.4 million in 2015 to USD 1.8 billion in 2023 – equivalent to a 19.5 percent compound annual growth rate.

Machinery & Equipment
The machinery & equipment (M&E) industry is a traditional German stronghold. The M&E sector is the major application industry for additive manufacturing. Toolless manufacturing, increased efficiency for materials and freedom of design will all become reality thanks to additive manufacturing. Siemens in Berlin made a breakthrough in 2017 by successfully testing gas turbine blades that were 100 percent produced by additive manufacturing. The company also claims that it can build prototypes up to 90 percent faster than normal with this technology.

Current and Intended Company 3D Printing Adoption Rates *

<table>
<thead>
<tr>
<th>Industry</th>
<th>Experienced</th>
<th>Considering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>12%</td>
<td>37%</td>
</tr>
<tr>
<td>USA</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>UK</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>China</td>
<td>24%</td>
<td>14%</td>
</tr>
<tr>
<td>Rest of Western Europe</td>
<td>22%</td>
<td>8%</td>
</tr>
</tbody>
</table>

3D Printing for Tools and Machine Parts Construction/Production in 5 Years *

<table>
<thead>
<tr>
<th>Industry</th>
<th>Likely</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastics</td>
<td>22%</td>
<td>12%</td>
</tr>
<tr>
<td>Automotive/Aerospace</td>
<td>20%</td>
<td>11%</td>
</tr>
<tr>
<td>Electronics</td>
<td>40%</td>
<td>22%</td>
</tr>
<tr>
<td>Machinery &amp; Equipment</td>
<td>70%</td>
<td>23%</td>
</tr>
<tr>
<td>Pharma/Medical</td>
<td>70%</td>
<td>16%</td>
</tr>
</tbody>
</table>

* survey of 900 global companies
Supporting Innovation

A number of national alliances, initiatives and working groups have been established to support cross-industry additive manufacturing research and development activities. These allow potential users and development partners from industry to work together to develop additive manufacturing applications for a number of industry sectors.

VDMA AG Additive Manufacturing
Germany’s Mechanical Engineering Industry Association (VDMA) hosts more than 120 members in its Additive Manufacturing working group, providing an array of industrial 3D printing-related services to its members.

Fraunhofer Additive Manufacturing Alliance
The internationally renowned Fraunhofer Society Institutes are at the frontier of research activities in Germany and closely cooperate with industry players along the value chain. The Fraunhofer Additive Manufacturing Alliance encompasses 18 institutes that are located across Germany to form the entire additive manufacturing process chain; comprising the development, application and implementation of additive manufacturing methods and processes. Extensive experience in meeting industrial contract and research project requirements both nationally and internationally form the basis from which the alliance develops customized designs for clients and manages complex assignments.

Fraunhofer Society
The Fraunhofer Society ("Fraunhofer Society for the Advancement of Applied Research") is a German research organization with 72 institutes spread throughout Germany, each focusing on different fields of applied science. With over 25,000 employees (mainly scientists and engineers) and an annual research budget of around EUR 2.3 billion, it is the biggest organization for applied research and development services in Europe.

Showcase Fraunhofer Additive Manufacturing Alliances

Selected Additive Manufacturing Players in Germany
Category: Research & Development

1. Direct Manufacturing Research Center (DMRC)
2. Laser Zentrum Nord
3. Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM
4. Fraunhofer Institute for Factory Operation and Automation IFF
5. Fraunhofer Institute for Ceramic Technologies and Systems IKTS
6. Fraunhofer Institute for Laser Technology ILT
7. Fraunhofer Institute for Manufacturing Engineering and Automation IPA
8. Fraunhofer Institute for Production Systems and Design Technology IPK
9. Fraunhofer Institute for Production Technology IPT
10. Fraunhofer Institute for Mechanics of Materials IWM
11. Fraunhofer Institute for Machine Tools and Forming Technology IWU
12. Fraunhofer Institute for Industrial Engineering IAO
13. Fraunhofer Institute for Material and Beam Technology IWS
15. Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT

Source: Germany Trade & Invest, 2017
MARKET OPPORTUNITIES

Microelectronics and Sensors

Germany is a major microelectronics force, securing its place at the top of the international table as Europe’s leading semiconductor production location.

Europe’s Semiconductor Leader
With one in three chips produced in Europe being German-made and accounting for more than half of European microelectronics production, Germany has established itself as an international leader in sensors systems, energy-efficient electronics and chip-based security. Increased levels of automation in passenger vehicles and the ongoing digitalization of industry are creating increased demand for advanced electronics and sensor technologies.

Automotive Electronics
Semiconductors account for around 80 percent of innovations in modern vehicles. Mobile internet access, digital operating controls and electronic assistance systems – once the sole preserve of the premium vehicle segment – are slowly finding their way into all vehicle segments. The sector is driving increased chip demand, with digitalization and electrification fueling semiconductor growth of 103 percent for the period 2000 to 2016. It is also the semiconductor sector’s main industry sector client, accounting for around 44 percent of domestic industry demand. Germany expects to dominate the European market and occupy the second place internationally, in terms of per capita microelectronics consumption for vehicles; with a forecast of USD 9.6 billion in 2021 putting it only behind China (USD 11.4 billion).

Industrial Electronics
Microelectronics has a decisive role to play in the ongoing digitalization of industrial production. Microelectronics and microsystems are central to Germany’s Industrie 4.0 project to establish the country as an integrated industry lead market and provider. Industry also recorded growth in semiconductor demand, recording an increase of 49 percent during the period 2000 to 2016. The industry sector is the second largest semiconductor segment, with a 24 percent semiconductor share.

Worldwide Usage of Microelectronics for Vehicles in USD billion

Source: ZVEI 2017
Leading Clusters

Germany’s microelectronics sector is organized into strong regional clusters that form a complete industry value chain network responsible for developing the smart, integrated systems required to meet industry’s changing needs. In the east, the Free State of Saxony – home to the Silicon Saxony cluster – enjoys a reputation as Europe’s biggest micro- and nanoelectronics location. The microTEC Südwest cluster in Baden-Württemberg counts as a major European competence and cooperation network for intelligent microsystem technology solutions in the fields of production, mobility, health, and energy. The it’s OWL cluster in OstWestfalen-Lippe is playing a leading role in developing automation and mechatronics technologies to make Industrie 4.0 a reality.

Research Fab Microelectronics Germany

Eleven institutes within the Fraunhofer Group for Microelectronics and two institutes from the Leibniz Association have developed a concept for a cross-location micro- and nanoelectronics research factory. The “Research Fab Microelectronics Germany” initiative will consolidate the country’s global position in semiconductors and electronics in four future-relevant technology areas (“silicon-based technologies,” “compound semiconductors and special substrates”, “heterointegration,” and “design, testing and reliability”). Industry clients, SMEs and research institutes alike will enjoy access to the complete micro- and nanoelectronics value chain from a single source. As the world’s largest pool for smart system technologies and intellectual property rights, the initiative will strengthen German and European competitiveness in the field. The BMBF has made total funding of EUR 350 million through to 2020 available for the project.

Semiconductor Investment

The BMBF “Microelectronics from Germany – Driver of innovation for the digital economy” initiative will see public funding in the region of EUR 1 billion invested in the country’s chip industry through to 2020. Additional industry investment of around EUR 2.3 billion should also be generated over the same period as part of efforts to strengthen Germany’s already thriving semiconductor sector.
Dynamic Labor Market

A Tradition of Quality
Germany enjoys a long and successful tradition in mechanical engineering and manufacturing. Researchers, companies and employees alike continue to profit from the country’s global know-how. The "Made in Germany" quality seal has long been recognized as a sign of engineering excellence and precision across the globe.

Engineering Excellence
According to the German Federal Statistical Office, Germany has a particularly high academic uptake rate. In the academic year 2018/2019, some 508,800 students – at 429 institutions of higher education – embarked on a course of academic study. Germany’s share of university students in the sciences, mathematics, computer sciences, and engineering is the highest in the EU, with more than 21 percent of all students.

Dual Education System
In order to secure the economy’s demand for highly qualified personnel, Germany developed a dual system in vocational training – combining the benefits of classroom-based and on-the-job training over a period of two to three years. In close cooperation with the German government, the German Chambers of Industry and Commerce (IHKs) and the German Confederation of Skilled Crafts (ZDH) ensure that exacting standards are rigidly adhered to, guaranteeing the quality of training provided across Germany. One in five German companies take part in the dual vocational training system, thereby turning apprentices into specialists who fit each company’s needs. Most apprentices receive an employment contract after training. Companies participating in vocational training usually take more than 70 percent on as employees, underlining the importance of the training system. More than 1.3 million young people are currently in vocational training in Germany.

Competitive Labor Costs
High productivity rates and steady wage levels make Germany an extremely attractive investment location. Since 2007, wages in the manufacturing sector have risen in most European countries (EU-28), with the growth rate averaging 2.5 percent. While some countries – particularly in Eastern Europe – experienced a rise of more than five percent, Germany recorded one of the lowest labor cost growth rates (2.2 percent) in the manufacturing sector within the EU. Highly flexible working practices such as fixed-term contracts, shift systems, and 24/7 operating permits contribute to enhance Germany’s international competitiveness as a suitable investment location for internationally active businesses.

![Workforce in Germany by Level of Professional Education 2015 percent of total workforce](image)

- Unskilled: 17%
- University graduates: 21%
- Skilled craftsmen (dual education apprentices): 52%
- Vocational college graduates and technicians: 10%

![Growth of Labor Costs in Manufacturing 2007-2017 annual average growth in percent](image)

- Greece: -0.6%
- Spain: 2.0%
- France: 2.1%
- Germany: 2.2%
- Netherlands: 2.3%
- UK: 2.4%
- European Union: 2.5%
- Czechia: 4.3%
- Slovakia: 4.8%
- Hungary: 5.3%
- Poland: 5.4%

Source: Eurostat 2018
Creating Investment Stability

Open and Transparent Markets
The German market is open for investment in practically all industry sectors, and business activities are free from regulations restricting day-to-day business. German law makes no distinction between Germans and foreign nationals regarding investments, available incentives or the establishment of companies. The FDI legal framework in Germany favors the principle of freedom of foreign trade and payment. Generally, there are no restrictions or barriers to capital transactions or currency transfers, real estate purchases, repatriation of profits, or access to foreign exchanges.

Sound and Secure Legal Framework
According to the World Economic Forum (WEF), Germany is one of the world’s best locations in terms of planning and operating security. Germany is also one of the world’s leading nations in terms of intellectual property protection and protection from organized crime. German regulatory authorities are highly professional in their operations. The German legal system also counts as one of the world’s most efficient and independent. Social, economic, and political stability provides a solid base for corporate investment projects. Contractual agreements are secure and intellectual property is strictly protected in Germany.

First Choice Business Location
Ernst & Young’s European Attractiveness Survey 2018 confirms Germany’s reputation as one of the most attractive business locations in the world. International decision makers ranked Germany first within the EU in the “most attractive business location” category. A substantial 66 percent of the 502 plus international managers surveyed consider Germany to be western Europe’s foreign direct investment (FDI) magnet. The AmCham Business Barometer 2018 highlights the positive regard in which US companies active in Germany hold the country. Asked about their opinion on the German business environment, 91 percent of US company respondents expressed satisfaction. Eighty-three percent are convinced that Germany will either improve or maintain its competitive edge in the future.

Reliable Logistics Infrastructure
Germany’s infrastructure excellence is confirmed by a number of recent studies including the Swiss IMD’s World Competitiveness Yearbook and various investor surveys conducted by institutions including the WEF and Ernst & Young. The 2018 Logistics Performance Index of the World Bank ranked Germany first worldwide for its logistic proficiency; singling out Germany’s quality of trade and transport infrastructure. Accumulated in this score for Germany are high marks for the quality of roads and air transport, excellent railroads and port infrastructure, as well as its information infrastructure.

TOP 10 Electronics FDI Destination Countries in Europe

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<tbody>
<tr>
<td>Germany</td>
<td>53</td>
<td>72</td>
<td>49</td>
<td>56</td>
<td>31*</td>
<td>230</td>
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<tr>
<td>United Kingdom</td>
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<td>Netherlands</td>
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<td>Russia</td>
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<td>8</td>
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<tr>
<td>Hungary</td>
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<td>Finland</td>
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<tr>
<td>Turkey</td>
<td>9</td>
<td>4</td>
<td>7</td>
<td>17</td>
<td>8</td>
<td>45</td>
</tr>
</tbody>
</table>

* preliminary data
Source: fDi Markets 2019

FDI in the German Electronics Industry
- No. 1 destination for investments in the electronics industry within the European Union, with 56 new projects in 2017 alone.
- 3rd most attractive electronics FDI destination worldwide after the USA and China (277 new investment projects in the electronic industry between 2013 and 2017)
- Most projects from China (58 projects), USA (41 projects) Switzerland (22 projects), Japan (19 projects), and the UK (14 projects)
- 17 percent of all FDI projects within the last five years established a manufacturing site in Germany.
Financing & Incentives in Germany

Incentives programs in Germany are available through different public funding instruments and for different funding purposes. The individual funding requirements may, for example, result from investment projects, research and development activities, personnel recruitment, working capital needs or other specific purposes. The different incentives instruments including grants, loans and guarantees are generally available for all funding purposes and can ordinarily be combined; thus matching the different business activity needs at different development stages of the company.

Investment Project Financing by Private Equity
Technologically innovative start-ups in particular have to rely solely on financing through equity such as venture capital (VC). In Germany, appropriate VC partners can be found through the Bundesverband Deutscher Kapitalbeteiligungsgesellschaften e.V. (BVK – German Private Equity and Venture Capital Association). Special conferences and events like the Deutsches Eigenkapitalforum (German Equity Forum) provide another opportunity for young enterprises to come into direct contact with potential VC partners. Public institutions such as development banks (publicly owned and organized banks which exist at the national and state level) and public VC companies may also offer partnership programs at this development stage.

Investment Project Financing by Bank Loans
Debt financing is a central financing resource and the classic supplement to equity financing in Germany. It is available to companies with a continuous cash flow. Loans can be provided to finance long-term investments, working capital and operational costs (R&D, personnel) and for bridging temporary financial gaps. Besides offers from commercial banks, investors can access publicly subsidized loan programs in Germany. These programs usually offer loans at attractive interest rates in combination with repayment-free start-up years, particularly for small and medium-sized companies. These loans are provided by the KfW federal development bank and also by regional development banks.

Investment and R&D Incentives
When it comes to setting up production and service facilities, investors can count on a number of different public funding programs. These programs complement investment project financing. Most important are cash incentives provided in the form of non-repayable grants applicable to co-finance investment-related expenditures such as new buildings, equipment and machinery. R&D project funding is made available through a number of different incentives programs targeted at reducing the operating costs of R&D projects. Programs operate at the regional, national, and European level and are wholly independent from investment incentives. At the national level, all R&D project funding has been concentrated in the High-Tech Strategy to push the development of cutting-edge technologies. Substantial annual funding budgets are available for diverse R&D projects.

Labor-related Incentives
After the location-based investment has been initiated or realized, companies can receive further subsidies for building up a workforce or the implementation of R&D projects. Labor-related incentives play a significant role in reducing the operational costs incurred by new businesses. The range of programs offered can be classified into three main groups: programs focusing on recruitment support, training support, and wage subsidies respectively. Labor-related incentives play a significant role in reducing the operational costs incurred by new businesses.

Incentives in Germany

<table>
<thead>
<tr>
<th>Funding purposes</th>
<th>Investments</th>
<th>Working Capital</th>
<th>Research &amp; Development</th>
<th>Specific Purposes</th>
<th>Personnel</th>
</tr>
</thead>
</table>

Financing supported by any of the following public funding instruments (combinations of instruments usually possible)

<table>
<thead>
<tr>
<th>Public funding instruments</th>
<th>Grants</th>
<th>Loans</th>
<th>Guarantees</th>
<th>Equity Capital</th>
<th>Mezzanine Capital</th>
</tr>
</thead>
</table>

Please visit our website for more incentives information: www.gtai.com/incentives
Liaoning Julong Financial Equipment Corp.

Germany Trade & Invest (GTAI) provides a range of inward investment-related services to international investors. After careful consultation with the individual investor, a support program of consultancy and information services is provided to help set the stage for investment success. Here we provide a typical example of the types of services we provided to a recent investment project.

Company Information

- Liaoning Julong Financial Equipment Corp., established in 1998 in Anshan, Julong, China
- The company is specialized in banknote handling and processing. Liaoning Julong Financial Equipment Corp. also manufactures parts on an OEM basis for major international companies.

Product Information

- Banknote handling and processing machines (such as currency counters, sorters, and ATMs)

Location Requirements

- The company wanted to set up a base in Germany to investigate international markets, support distributors, and manufacture/service products.
- Proximity to European financial sector and European Central Bank key to site selection decision
- Central European headquarters with ready access to European markets

Project Information

- Investment volume: EUR 1 million
- Jobs to be created: 40–70 within the first three years
- Location: Headquarters in Frankfurt (Main) with satellite offices in major German cities

Germany Trade & Invest Support

- Site selection
- Market and business development services
- Staff recruitment services
- Tax & legal information

Creating New Business in Record Time

Liaoning Julong’s decision to establish activities in Germany immediately paid off dividends, with the company being awarded a major contract from the largest French bank after the new company was founded.

“The services offered by the experts at Germany Trade & Invest were extremely valuable to us during the investment process. That’s why the process took only six months – from the planning phase to completion.”

Bai Li, Managing Director, Julong Europe GmbH

Julong Europe places great value on the professionalism, diligence, and high level of education of its German employees. The availability of highly trained professionals was one of the company’s most important selection criteria. The strategic focus on R&D and product quality improvement means that the German subsidiary performs more than a sales market role; being responsible for R&D repair team creation, the setting up of a proprietary assembly plant, and the implementation of Julong’s international strategy.

The Julong Group contacted the official investment promotion agencies of several different countries with its European investment project and conducted a number of site visits prior to selecting Germany as its ultimate investment location.
Our support services for your investment project

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**Location consulting/Site evaluation**

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Investor Consulting

Jerome Hull is the senior manager for electronics & microtechnology technologies in Germany Trade & Invest’s Mechanical & Electronics Technologies team. An acknowledged industry expert, Jerome has successfully accompanied numerous investment projects from North America, Asia and Europe.

Max Milbredt is responsible for electronics and photonics at Germany Trade & Invest. He consults international companies on establishing a business in Germany and actively promotes Germany as a business location. Max has been involved in over thirty projects, ranging from large multinationals to start-ups, that have helped create more than 650 new jobs in Germany.

For questions on how to establish your business in Germany please contact Jerome Hull at jerome.hull@gtai.com or Max Milbredt at max.milbredt@gtai.com.

For more information about the automotive industry in Germany, please visit our website: www.gtai.com/electronics

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About Us
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. All investment services and related publications are free of charge.

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