In this innovative market, companies get the opportunity to test, define and introduce new industry standards for this next-level PV world market. This new market will not only guarantee Germany’s leading role in market volume but also consolidate its attractiveness for new business and investment opportunities - such as downstream services, systems for storage, smart grid and smart home technologies - and broaden partnership opportunities with German project developers, specialized utilities, and R&D institutes.
THE GERMAN PV MARKET AND INDUSTRY AT A GLANCE

WORLD’S LARGEST MARKET

Germany is the world’s strongest PV market with 32.4 GWp of cumulated installations in 2012. This is equivalent to 31.7 percent share of the world market, making Germany home to almost a third of the solar modules in operation worldwide. Capacity of 7.6 GWp was installed in 2012 alone.

Total electricity consumption share of more than four percent (28 billion kWh) was produced with more than 1.2 million PV systems in 2012. PV energy has recorded the highest growth rates among all renewables in recent years, making it the third largest renewable electricity source after wind and bioenergy.

GERMANY – COMMITTED TO PV GROWTH

The German federal government has made a commitment to a total feed-in tariff-supported installation level of 52 GWp. This volume is expected to be reached within the next three years. The estimated PV share of total electricity consumption is expected to reach ten percent by this time.

HOLISTIC INDUSTRY CLUSTER

Germany is Europe’s leading PV manufacturer. In many other market segments – such as inverter production – Germany is the largest producer worldwide. High-tech PV technologies (wafer-based, thin-film, and organic PV) are developed, produced and made commercially available in Germany.

Leading global PV players, innovative small and medium-sized enterprises (SMEs), renowned research institutes, and equipment and material suppliers help form the most innovative and most holistic industrial PV cluster in the world. Germany is home to around 60 manufacturers of silicon, wafers, cells, and modules. In addition, there are over 100 PV material and equipment suppliers, more than 100 balance-of-system (BOS) component manufacturers, more than 50 PV research institutes and hundreds of project development, system integration and installation companies. The German PV industry currently employs a workforce of around 100 thousand people.

Germany Trade & Invest regularly updates its PV fact sheets which provide a detailed and up-to-date profile of the PV environment. These can be downloaded from the Germany Trade & Invest website: www.gtai.com/pv
GERMAN PV MARKET DRIVERS

THRIVING RESIDENTIAL MARKET
In 2012, Germany installed 7.6 GWp with 184,298 PV systems. The thriving German PV market will continue to receive further momentum in the coming years as PV-produced electricity achieves price parity with grid electricity prices in various customer segments. The private consumer segment with system sizes below 5 kWp and the industrial and commercial segments above 100 kWp are already growing due to the increase of own consumption. The potential PV-suitable area in Germany would allow an installed capacity of more than 400 GWp.

THE RENEWABLE ENERGY SOURCES ACT – FRAMEWORK FOR MARKET SUCCESS
The Renewable Energy Sources Act (EEG) is the jewel in the crown of Germany’s ambitious green policy framework. Green sector growth is underpinned by long-term feed-in tariffs which guarantee the production of CO₂-free electricity. The act’s proven success has led to the implementation of similar legislation in more than 50 countries worldwide. The EEG guarantees owners of PV installations a fixed feed-in tariff for 20 years subject to type and size of system. A total installation commitment of 52 GWp is supported with tariffs, with following installations retaining unlimited priority feed-in. As part of the new tariff and incentive scheme, rooftop systems as well as PV systems combined with batteries are especially promoted in order to provide further growth potential and support for decentralized and distributed renewable power generation.

PRIVATE DEMAND FOR PREMIUM PRODUCTS
Rooftop systems represent the largest segment by far. These are mainly owned by private users who express a stated preference for high-quality, premium products with a local manufacturing presence. As such, manufacturers located in Germany are able to market a “Made in Germany” product for significant competitive advantage.

EXCELLENT EXPORT BASE
Foreign markets are a main driver of the PV industry in Germany. The country’s excellent export conditions allow it to play a major role in meeting global PV demand. A number of contributory factors are central to this success. Chief among these are Germany’s central location at the heart of Europe and rapid access to major and emerging markets. Market forecasts confirm Europe’s continued dominance as the world’s leading PV market, especially in the own-consumption segment, with Germany as the leading sales platform.

INTEGRATED MARKET STRUCTURE
The presence of a number of highly experienced project developers, system integrators, and installers provides the necessary backbone for the mature sales structure imperative for rapid market growth. High installation numbers are responsible for creating the fastest project realization times and the lowest installation and BOS costs in the world. Industry-specialized banks and state funding programs also help safeguard long-term demand for PV technology in Germany. The country’s excellent infrastructure and its quick and transparent feed-in tariff application and building permit processes allow the German market to maintain a high level of demand with short project realization times.

Electricity Production from Renewable Energies in Germany 2012

- Wind Energy: 33%
- Biomass: 12%
- Biogas: 15%
- Hydro Power: 15%
- Photovoltaics: 20%
- Waste: 4%
- Others <1%

Total 135 GWh

Source: BDEW 2013
GRID PARITY AGE - PV MARKET 2.0

Thanks to a sharp fall in PV rooftop system prices in recent years, many electricity customer segments in Germany (e.g. private households and SMEs) are now able to produce PV electricity more cheaply from their roofs than buying electricity from the grid. Today, the FIT for a rooftop project is already below the level of domestic household electricity prices. This makes it financially more attractive for the PV system owner to directly consume the solar electricity generated than make use of the FIT (please see example below). At the same time, energy storage becomes increasingly attractive as customers intend to use their low-cost PV electricity beyond daytime. To this end, the German government therefore introduced a new incentive scheme in May 2013 which supports the installation of batteries along with PV systems with up to 30 percent of battery costs. Germany offers an own-consumption potential of 76 TWh per year which equals an installed capacity of around 80-100 GWp.

Feed-in Tariffs Leading the Way to Grid Parity

Example: With a system price of 3.30 EUR/Wp (right ordinate), the investor will require a feed-in tariff of 0.35 EUR/kWh (left ordinate) in order to receive an (ROI) of 6%. As the feed-in tariff is lower than the retail price of electricity, own consumption becomes more attractive.

* Model calculation for rooftop systems >30 kWp, <100 kWp; based on 802 kWh/kWp (Frankfurt/Main), 100% financing, 6% interest rate, 20 year term, 2% p.a. O&M costs
GRID PARITY AND OWN CONSUMPTION – THE FUTURE

DOMESTIC AND GLOBAL OWN-CONSUMPTION MARKET OUTLOOK
From a manufacturer perspective, the own-consumption customer segment is highly attractive as it mainly consists of energy end-users. In this B2C market environment, PV competes with end-consumer electricity prices rather than with utility electricity purchase prices. Accordingly, the price pressure in this B2C segment is not necessarily as high as is the case with B2B target groups - with marketing, brand, quality, and proximity to the customer possibly more important than price.

The German market is not alone in heading in this direction: globally, the own-consumption segment is expected to rise to more than 350 GWp and account for around 50 percent of total PV market installations by 2020 – half of which will be installed in Europe. Germany therefore has an excellent opportunity to establish itself as the pioneering market in this segment with the opportunity for companies to test, define and introduce new industry standards for this future world PV market.

OWN-CONSUMPTION TARGET GROUPS IN GERMANY
Achieving price competitiveness could provide a boost to the entire German PV market. However, the first group to enjoy grid parity benefits will be private electricity customers. The segment is currently the fastest growing, and with the new EEG 2012 as well as the new battery incentive program launched in May 2013, Germany is specially promoting this segment to provide further incentive to this promising target group.

Target groups for own consumption will diversify as it becomes more financially attractive in a number of electricity customer segments, e.g. public buildings, SMEs, and even larger industries. This guarantees high price elasticity and great growth potential for this segment in Germany in the future. With the own-consumption and PV storage model growing successfully in Germany, the German PV sector is about to develop a customer base independent of feed-in tariff-based subsidy schemes.

### Own-Consumption Market Potential in Germany

<table>
<thead>
<tr>
<th>Segment</th>
<th>Total electricity demand in the sector</th>
<th>Potential own consumption with PV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential: 29%</td>
<td>Total: 140 TWh</td>
<td>Family homes: 37.4 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Apartments: 3.6 TWh</td>
</tr>
<tr>
<td></td>
<td>Total PV Potential: 41 TWh</td>
<td></td>
</tr>
<tr>
<td>Commercial: 18%</td>
<td>Total: 133 TWh</td>
<td>Retail: 7.8 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Office buildings: 6.2 TWh</td>
</tr>
<tr>
<td></td>
<td>Total PV Potential: 24 TWh</td>
<td>Agricultural: 1.8 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Public buildings: 3.4 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hotels, restaurants, etc.: 5 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Construction: 3 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Producing companies: 4.8 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other: 4.8 TWh</td>
</tr>
<tr>
<td>Industrial: 4%</td>
<td>Total: 251 TWh</td>
<td>Mechanical engineering: 2.2 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food/beverages: 1.8 TWh</td>
</tr>
<tr>
<td></td>
<td>Total PV Potential: 10 TWh</td>
<td>Automotive: 1.3 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Plastics: 1.3 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy intensive: 4.8 TWh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other: 4.8 TWh</td>
</tr>
</tbody>
</table>

Total: 14%  
Total electricity demand: 542 TWh  
Total own-consumption potential: 76 TWh

Source: UBS 2013
Independence from subsidies will help make the PV market even more stable in the future. New PV sales strategies, system configurations, and integration processes required in the future grid-parity environment are intrinsic components of the specialist expertise currently being developed in Germany.

NEW INNOVATIONS, NEW OPPORTUNITIES
With the German PV market reaching grid parity in more and more electricity customer segments, the German PV industry is full of opportunities and innovation potential. Pioneering utility business models, innovative financing and leasing concepts, energy trading, and PV plant management will play an increasingly important role in the service sector, while technological innovations are spurred on by the integration of decentralized storage and smart home technologies into the system. Flexible demand-side-management, power-to-heat and innovative energy storage technologies as well as smart grid technologies are already being tested in several pilot projects across Germany. It is to be expected that this development will continue and that the first commercial markets for these new technologies to integrate renewable energies into the German grid will soon open.

GERMANY - SUPPORTING PV INNOVATION
A new solar storage incentive program launched by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) in cooperation with the state-owned KfW bank on May 1, 2013, provides interest reduced loans and a repayment allowance up to 30 percent of battery costs and EUR 660 per PV capacity (kWp) respectively eligible for the purchase of batteries in conjunction with PV systems smaller than 30 kWp. With the German legal framework enabling own-consumption and the direct sale of electricity to third parties as well as the new energy storage support schemes, Germany now offers an attractive chance to test new business models in a grid-parity market environment and provides opportunities to design and implement new industry standards for global PV solutions beyond the subsidy age.

### Germany’s New Incentives Scheme for PV Batteries

**Program requirements:**
- PV systems up to 30 kWp
- Batteries providing min. seven years present value guarantee
- Inverter must have an open interface
- Disclosure of electronic interface for battery management system
- Max. PV output at grid connection point must be reduced by 40%

**Program conditions:**
- Eligible cash incentives up to 660 EUR/kWp (as repayment allowance for KfW loan)
- Possible loan promotion rate: up to 100% of net investment
- 5/10/20 year loan with 1/2/3 years of free redemption
- Fixed interest rates
- Application through client’s bank (financing investment)

**CALCULATION SCHEME:**

\[
\text{Cost of battery [EUR]} \times 0.3
\]

\[
\text{PV capacity [kWp]} = \text{max. 600 EUR/kWp (newly installed)}
\]

\[
\text{PV capacity [kWp]} = \text{max. 660 EUR/kWp (retro-fit)}
\]

**Example for a new 5 kWp PV system:**
- Battery costs (in EUR)
- Cash incentives (in EUR)

Source: KfW, BMU 2013
INVESTMENT OPPORTUNITIES

OPPORTUNITIES FOR MANUFACTURERS

Local manufacturers profit from direct access to the world’s largest PV markets. This guarantees flexible reaction times, eliminates lengthy and expensive transportation and long-term inventory, and allows foreign exchange rate hedging. The concentrated presence of the whole PV value chain has created highly developed sales channels facilitating distribution and easy access to the end customer. Companies active in Germany can take advantage of leveraged brand awareness afforded by the “Made in Germany” quality seal – an attribute with special importance in the own-consumption segment. Other European and international PV markets are served by Germany’s sophisticated distribution infrastructure. To support these structures and networks, the German government provides excellent export conditions especially designed for the renewable energy sector (e.g. special export credit insurances).

FUTURE ENERGY STORAGE MARKET POTENTIAL

PV storage systems are forecast to grow by an average of more than 100 percent a year over the next five years, reaching nearly 7 GWh in 2017. The global market for PV energy storage is expected to reach USD 19 billion in 2017 - up from less than USD 200 million in 2012. Germany will account for nearly 70 percent of storage installed in residential PV systems worldwide in 2013. During the next five years, Germany is expected to lead the residential storage segment with installed storage capacity of 2 GWh, this being mainly driven by the solar storage incentive program introduced in May 2013.

### Investment Opportunities for Manufacturing Companies

<table>
<thead>
<tr>
<th>Industry segment</th>
<th>Segment-specific benefits</th>
</tr>
</thead>
</table>
| Energy storage device production (e.g. batteries) | - High demand through growing own consumption.  
- PV storage incentive program launched in May 2013.  
- Chemical industry and material science infrastructure and expertise.  
- Strong material supplier presence.  
- Lower transportation costs and reduced long-term transport inventories.  
- Marketing and distribution partnership opportunities. |
| Module production | - Direct link to customer (e.g. “transparent factory” concept).  
- Reduced price risks due to Eurozone.  
- Easier customization (e.g. BIPV) and distinction against competitors at home.  
- Smaller carbon footprint.  
- Swift market reaction time, just-in-time delivery.  
- Access to automation expertise and customized equipment suppliers.  
- Optimized supply chain: excellent supplier base of materials, chemicals and glass. |
| 3rd generation PV production (OPV) | - Chemical industry and material science infrastructure & expertise.  
- Chemical company partnering opportunities.  
- Specialized venture capital companies. |
| Glass production | - Largest module manufacturing cluster in Europe.  
- Sand pits with low iron sand.  
- Excellent power and gas infrastructure. |
| Other module material & component production | - Foils: highly developed chemical infrastructure.  
- Semiconductor materials: materials expertise, largest semiconductor hub in Europe.  
- Cables & junction boxes: plastics and electronics expertise.  
- Frames: excellent metal sourcing conditions. |
| Inverter production | - Power electronics, system integration and smart grid knowledge base.  
- Own consumption drives introduction of innovative products (e.g. integration of storage, smart home and monitoring systems). |
| PV mounting system production | - Metal & plastics processing infrastructure.  
- Excellent material sourcing conditions.  
- System integration knowledge base. |
| Equipment production | - Strong and diversified client base with constant innovation need.  
- Excellent tooling, machine component, and material supplier infrastructure & expertise.  
- Easy access to and transfer of technologies and processes from traditionally strong industries (e.g. automotive, chemicals and microelectronics). |
MANUFACTURING KNOW-HOW AND FULL SERVICE INFRASTRUCTURE

Close proximity to and cooperation with world-class R&D institutions, universities, and leading material and equipment suppliers helps manufacturers optimize production technologies and processes. The ready availability of superior facility and process engineers also helps save time and slash costs during ramp-up and maintenance phases. The existence of a complementary SME landscape in all PV technologies provides excellent opportunity for joint product development, with cluster participants enjoying the benefits of supply and delivery economies of scale. State-of-the-art infrastructure ensures production sites which provide closed loops from materials to recycling on top of industry-specific utilities and services.

Investment Opportunities for Service Companies

<table>
<thead>
<tr>
<th>Industry segment</th>
<th>Segment-specific benefits</th>
</tr>
</thead>
</table>
| R&D center             | • Large pool of experienced scientists and university graduates in PV-related subjects.  
                          • Generous public R&D support schemes.                                                                                                                       |
| Project services       | • Large pool of developers and engineers with unique project development experience.  
                          • Access to experienced private and institutional equity investors.  
                          • Access to grid integration expertise.  
                          • Large customer base for services like insurance, monitoring, and O&M and system optimization.                                                         |
| System integration     | • Global acceptance of reference projects located in Germany.  
                          • Among the lowest installation costs and shortest realization times in the world.  
                          • Strong presence of experienced installers.  
                          • New business through the integration of storage, heat pumps, smart home appliances and services: strong and growing demand due to higher income streams through own consumption and direct sale.  
                          • PV as home power supply: More emphasis on service, quality, and long-term performance.                                                                 |
| 3rd party ownership    | • New business models required for financing (e.g. leasing), operation and integration.  
                          • Standardization of systems.                                                                                                                                 |
| Energy trading         | • EEG sets legal framework for direct sale of PV electricity to the electricity exchange or surrounding consumers.  
                          • Direct sale of renewable energy rose more than 300 percent from 2011 to 2012.  
                          • New opportunities through pooling of systems.                                                                                                             |

GRID PARITY PULLING INNOVATIVE SERVICES

Increased demand generated by own consumption and direct sales models add to the complexity of the PV market. This in turn creates demand for new service models in ownership, financing, marketing, electricity trading, integration of storage (heat and electricity), and demand-side management.

A significant pool of existing PV installations across Germany can be used to test and measure new products on a large scale. New entrants in these fields can benefit from the supportive policy framework and existing legal structure when testing and introducing innovative products and systems. Local authorities actively assist the industry and guarantee fast grid access. Established sales structures of existing system integrators and project developers facilitate distribution and provide easy end-customer access. Germany serves as the global test bed for future grid-parity markets.

OPPORTUNITIES FOR SERVICE COMPANIES

KNOWLEDGE TRANSFER

Companies seeking to engage in PV service segments (e.g. R&D, PV systems planning, and project development and implementation) can access know-how from the largest pool of specialists in these fields worldwide. Company R&D centers not only profit from cluster knowledge transfer, but also from information sharing with other R&D centers and companies. Generous public R&D support schemes facilitate the development and the implementation of new products and technologies.
At the EU level, R&D activity grant funding of EUR 53.3 billion has been made available for the period 2007 through 2013. SMEs can take advantage of R&D project expenditures of up to 75 percent. Companies in Germany can also benefit from a diverse range of regional R&D funding programs. Germany offers attractive incentives and attractive market conditions for international PV enterprises and PV start-ups alike.

In 2011, a sum of EUR 74.3 million was made available for 96 new PV R&D projects by the BMU – an increase of 87 percent compared to the sum spent in 2010. Since 2011, the Innovationsallianz Photovoltaik (“Innovation Alliance Photovoltaic”) has been overseeing a Federal Ministry of Education and Research (BMBF) PV research budget in the region of EUR 100 million in addition to a EUR 500 million investment commitment from industry.

The development of storage technologies for PV and other renewable energies is specially promoted by the federal government. Part of the 6th Energy Research Programme, the Förderinitiative Energiespeicher (“Energy Storage Funding Initiative”) supports collaborative R&D projects with funding of EUR 200 million for the period 2011-2014.

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The 6th Energy Research Programme sets out the key focal points of German energy funding policy for the period 2011 to 2014. Energy R&D funding in the region of EUR 3.5 billion has been made available, with particular emphasis placed on two areas of major strategic importance: energy efficiency and renewable energies. Of this, EUR 1.3 billion is reserved for renewable energy R&D. Foremost among the research focal points are energy storage solutions and grid technology, as well as the integration of renewable energy into the power supply.

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HIGH PRODUCTIVITY

Germany has experienced a major increase in productivity over the past decade which has led to falling unit labor costs. In marked contrast to many other European countries (which have experienced an increase in unit labor costs), Germany’s unit labor costs decreased by a yearly average of 0.3 percent for the period 2005 to 2010. 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.

DUAL EDUCATION SYSTEM

Germany provides direct access to a highly qualified and flexible labor pool. The country’s dual education system – unique in combining the benefits of classroom-based and on-the-job training over a period of two to three years – is specifically geared to meet industry needs. The German Chambers of Industry and Commerce (IHKs) ensure that existing standards are adhered to, guaranteeing the quality of training provided across Germany.

STABLE LABOR COSTS

Another decisive argument in favor of Germany as a premium business location has been the significant closing of the labor cost gap between Germany and its eastern European neighbors. While some countries – particularly those in eastern Europe – experienced a rise of five to six percent, Germany recorded the lowest labor cost growth within the EU at just 1.6 percent.

ATTRACTIVE POOL OF PV EXPERTISE

OUTSTANDING QUALITY THROUGH LONGSTANDING EXPERIENCE

Germany enjoys a long and successful tradition in machinery and equipment development: researchers, companies and employees alike all benefit from this world class know-how. The “Made in Germany” quality seal has long been recognized as a sign of engineering excellence and precision across the globe. The PV industry in Germany is ideally placed to profit from this expertise.

ENGINEERING EXCELLENCE

Highly skilled and specialized employees are a key feature of the German labor market and will remain so in the future. According to OECD statistics, Germany has one of the highest rates of doctoral degree graduate levels in the world: With 312 PhD graduates per million inhabitants it ranks second in a global comparison of OECD countries. German universities have also introduced masters and bachelor degree programs for improved international acceptance and recognition. There are 300 renewable energy university degree courses, many of them with a strong focus on PV. Close synergies between the PV and the semiconductor and microelectronics industry create a readily employable workforce.

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The dual education system in Germany is specifically geared to meet industry needs. The German Chambers of Industry and Commerce (IHKs) ensure that existing standards are adhered to, guaranteeing the quality of training provided across Germany.

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FINANCING & INCENTIVES IN GERMANY

In Germany, investment projects can receive financial assistance through a number of different instruments. These instruments may come from private sources or consist of public incentives programs available to all companies—regardless of country of provenance. They fit the needs of diverse economic activities at different stages of the investment process.

EARLY STAGE INVESTMENT PROJECT FINANCING

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.

LATER STAGE INVESTMENT PROJECT FINANCING

Debt financing is a central financing resource and the classic supplement to equity financing in Germany. It is available to established companies with a continuous cash flow. Loans can be borrowed for day-to-day business (working capital loans), can help bridge temporary financial gaps (bridge loans) or finance long-term investments (investment loans). 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, in particular for small and medium-sized companies. These loans are provided by the state-owned KfW development bank and also by regional development banks.

CASH INCENTIVES FOR INVESTMENT PROJECTS

When it comes to setting up production or service facilities, investors can count on a number of different public funding programs. These programs complement the financing of an investment project. 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 or machinery. In Eastern Germany, investment grants are complemented by an investment allowance, which is usually allotted in the form of a tax credit but which can also be provided in the form of a tax-free cash payment.

LABOR-RELATED INCENTIVES AND R&D PROJECT GRANTS

After the location-based investment has been initiated, 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. 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 so-called High-Tech-Strategy to push the development of cutting-edge technologies. Substantial annual funding budgets are available for diverse R&D projects.
BEST PRACTICE EXAMPLES

ITS INNOTECH SOLAR

The Norwegian cell manufacturer Innotech Solar built a factory to process non-prime cells near the city of Halle (Saale), Saxony-Anhalt, in 2011. Around 130 new jobs were created by the initial investment. Innotech Solar uses industrial production techniques to increase power output and safeguard the quality of the cells. Germany’s thriving PV cluster, excellent infrastructure, and innovative technology reputation were decisive factors in the Norwegian company’s decision to locate in Germany.

GERMANY – ESSENTIAL TO GLOBAL SUCCESS

The company Innotech Solar - and other companies supported by Germany Trade & Invest - not only enjoy the benefits of Germany as a market and supplier hub, but also use their German facilities as a test bed for potential technology and knowledge transfer in order to serve the growing demand of renewable and environmental friendly products “Made in Germany.” For all companies Germany represents the ideal investment location; providing optimal product quality and market entry in the shortest time possible.

“Germany, with its thriving photovoltaic cluster and outstanding infrastructure, provides the ideal conditions for our activities. Our location in Halle gives us a unique competitive advantage to continue our extraordinary growth.”

Tommy Strömberg,
Chief Operating Officer, Innotech Solar

Selected Germany Trade & Invest Success Stories

<table>
<thead>
<tr>
<th>Country of Origin</th>
<th>USA</th>
<th>France</th>
<th>UAE</th>
<th>Switzerland</th>
<th>Norway</th>
<th>Norway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Location</td>
<td>Luckenwalde, Brandenburg</td>
<td>Torgau, Saxony</td>
<td>Ichtershausen, Thuringia</td>
<td>Kurort Hartha, Saxony</td>
<td>Bitterfeld, Saxony-Anhalt</td>
<td>Halle, Saxony-Anhalt</td>
</tr>
<tr>
<td>Size1/Type of Facility</td>
<td>115 MWp Module Factory (CIGS)</td>
<td>120 MWp Module Factory (CIS)</td>
<td>80 MWp Module Factory (a-Si/a-Si)</td>
<td>Solar Test House</td>
<td>PV Glass Processing Factory</td>
<td>100 MWp Cell Factory (c-Si)</td>
</tr>
<tr>
<td>Investment Volume2</td>
<td>EUR 25m</td>
<td>EUR 210m</td>
<td>EUR 140m</td>
<td>EUR 1m</td>
<td>EUR 24m</td>
<td>EUR 42m</td>
</tr>
<tr>
<td>Job Creation1</td>
<td>90</td>
<td>400</td>
<td>200</td>
<td>&gt;20</td>
<td>652</td>
<td>130</td>
</tr>
</tbody>
</table>

1 As of April 2012.
2 As planned by company.
3 GTAI support: from start of project to construction.
GERMANY TRADE & INVEST HELPS YOU

Germany Trade & Invest’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. Germany Trade & Invest’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.

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**STRATEGY**

**EVALUATION**

**DECISION & INVESTMENT**

**PROJECT MANAGEMENT ASSISTANCE**

<table>
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<tr>
<th>Business opportunity analysis and market research</th>
<th>Market entry strategy support</th>
<th>Project partner identification and contact</th>
<th>Joint project management with regional development agency</th>
<th>Coordination and support of negotiations with local authorities</th>
</tr>
</thead>
</table>

**LOCATION CONSULTING /SITE EVALUATION**

<table>
<thead>
<tr>
<th>Identification of project-specific location factors</th>
<th>Cost factor analysis</th>
<th>Site preselection</th>
<th>Site visit organization</th>
<th>Final site decision support</th>
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**SUPPORT SERVICES**

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<tr>
<th>Identification of relevant tax and legal issues</th>
<th>Project-related financing and incentives consultancy</th>
<th>Organization of meetings with legal advisors and financial partners</th>
<th>Administrative affairs support</th>
<th>Accompanying incentives application and establishment formalities</th>
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About Us

Germany Trade & Invest is the foreign trade and inward investment agency of the Federal Republic of Germany. The organization advises and supports foreign companies seeking to expand into the German market, and assists companies established in Germany looking to enter foreign markets.

All inquiries relating to Germany as a business location are treated confidentially. All investment services and related publications are free of charge.


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