

## The Solar Industry in Berlin-Brandenburg Ideal Conditions for Innovation & Success

### Top Specialists and Management Staff

Among the many strategic advantages of doing business in Berlin-Brandenburg are a highly motivated and qualified workforce, a favorable cost-benefit ratio and more flexible work hours than in other locations. Managers from all over the world are eager to live and work in the attractive capital region, and investors and entrepreneurs are able to find the expert personnel they need here very quickly. The region's two business development agencies, Berlin Partner and the ZAB Brandenburg Economic Development Board, offer special service packages designed to aid in the recruitment and training of management and other expert staff. The region also provides a wide variety of training opportunities at specialized educational institutes.

### Leading Research and Education

Berlin-Brandenburg has one of the most concentrated research and educational networks in Europe, including 44 university-level institutions with over 57,000 students in the technical and applied sciences, more than 100 public and private institutes and 23 technology centers. Solar technology is being developed at no less than seven university-level colleges and eleven institutes in Berlin and Brandenburg. The region also has several centers of expertise and many strategic research networks that connect universities, colleges, R&D institutes and technological partners. They come together to make Berlin-Brandenburg one of the world's leading regions for solar energy research.

### Modern Infrastructure, Affordable Costs

The German capital region offers attractive conditions for investors in the solar industry. Over the course of the past twenty years, the region's technical infrastructure has been entirely modernized and brought up to state-of-the-art standards. Office rental and property rates are significantly lower than those in other European metropolitan regions. Berlin-Brandenburg also provides optimal access to all trans-European traffic networks. The Berlin Brandenburg Airport is the largest new airport project in Europe and will begin operation in 2011, thus even further enhancing the region's international accessibility. Berlin-Brandenburg leads Germany with a concentration of five freight-traffic and logistics centers and approximately 100 large logistics companies.

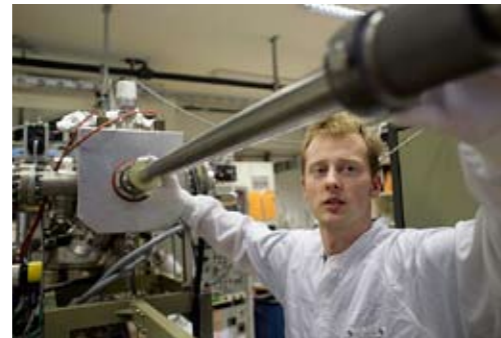
### Leading Solar Technology »Made in Germany«

The German solar industry continues to act as a major engine in the global solar sector. Germany boasts the world's largest photovoltaic market: In 2009, solar systems with a capacity of 3,811 Megawattpeak (MWp) were installed throughout the country. German solar companies profit from their technological prominence as well as from the EEG Renewable Energy Law. Over one-quarter of all solar cells installed worldwide come from German manufacturers. Experts predict an annual growth of up to 20 percent for the photovoltaic industry (Sarasin Study, November 2009). Also benefiting the solar industry boom are cost reductions and yield optimizations in all stages of the value chain as well as the rapid development of PV technology and rising prices for fossil fuels.

Cover: Flexible thin film solar cells based on a copper indium gallium diselenide absorber on titanium film developed for use in space at the Hahn Meitner Institute in Berlin (today the Helmholtz Center Berlin)

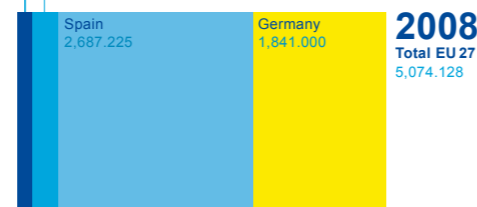


First Solar employs a staff of over 500 at its Frankfurt (Oder) location.



Research into thin film solar cells at the Helmholtz Center Berlin for Materials and Energy.

#### Germany will continue to be an industry leader New PV output in Megawattpeak (MWp)



Source: EurObserv'ER 2010  
\*Estimate

## The Berlin-Brandenburg Capital Region Facts, Services, Strategic Business Advantages



### More for Your Investment

Berlin-Brandenburg offers investors the best financial support available in Europe. Investment subsidies are granted in the form of direct payments. The support programs created for these measures combine funds from the EU, the German federal government and the states of Berlin and Brandenburg. Large companies in the capital region can receive investment subsidies of up to 30 percent, while medium-size companies receive up to 40 percent and small companies up to 50 percent.

### High Quality of Living

The region combines the international flair of the Berlin metropolis with the charming countryside and historical treasures of the state of Brandenburg. The capital region also has a vibrant club scene, a long list of major cultural events, more than 170 museums, 150 stages and 500 palaces, churches and parks. Recreational activities such as golf, horseback riding, water sports and aviation are just some of the wide variety of activities to choose from. The overall cost of living, working and commuting is significantly lower than in other metropolitan regions.

### Investing Made Easy

The capital region's two business development agencies, Berlin Partner GmbH and the ZAB Brandenburg Economic Development Board, provide comprehensive support during the setting-up of your company's operations in the region: professional, quick, with no red tape, free of charge and confidential.

- **Business Info:** Facts and figures on the Berlin-Brandenburg business region
- **Personnel:** Support in recruiting and training new staff
- **Real Estate:** Assistance in locating property for sale or rent
- **Financing:** Guidance on subsidy and financing opportunities
- **Contacts:** to government agencies, banks, chambers of commerce, associations and business networks

[www.businesslocationcenter.de/solar](http://www.businesslocationcenter.de/solar)  
[www.brandenburg-invest.com/cleantech](http://www.brandenburg-invest.com/cleantech)

#### Berlin-Brandenburg – An attractive location

- 1 Metropolis Berlin: Potsdamer Platz
- 2 Capital City: The Federal Chancellery
- 3 World Heritage Site: Fürst Pückler Park
- 4 State of Brandenburg: Innovative and a great place to live

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# Solar Industry in the Berlin-Brandenburg Capital Region

THE GERMAN CAPITAL REGION  
MORE VALUE FOR YOUR INVESTMENT

## The Solar Industry in Berlin-Brandenburg A Growth Cluster at the Heart of Europe



### Ten Reasons Why Berlin-Brandenburg is Best

- Fastest growing growth cluster of solar industry producers, suppliers and service providers
- Highest concentration of solar energy R&D in Europe
- Home to leading solar industry associations and energy agencies
- A large pool of highly qualified specialists and management staff
- High productivity levels, affordable labor costs and flexible work models
- Highest subsidies in the European Union
- First-rate locations for manufacturing and R&D at attractive prices
- Personalized assistance and non-bureaucratic support for investors
- Exciting mixture of urban lifestyle, green countryside, history and culture
- Affordable, high-quality living

### Fastest Growing Solar Region in Europe

Solar technology is one of the most innovative and fastest growing sectors in the German capital region. Production capacity is increasing rapidly and will soon exceed 1.000 Megawattpeak (MWp) per year with the help of the region's new photovoltaic power plants. The industry has already created over 5,000 jobs – and more are on the way. The entire solar value chain is represented in Berlin-Brandenburg, including factory planning, R&D, materials testing, glass and chemical suppliers, assembly and electrical components, silicone production, machine maintenance and overhaul, and solar module recycling.

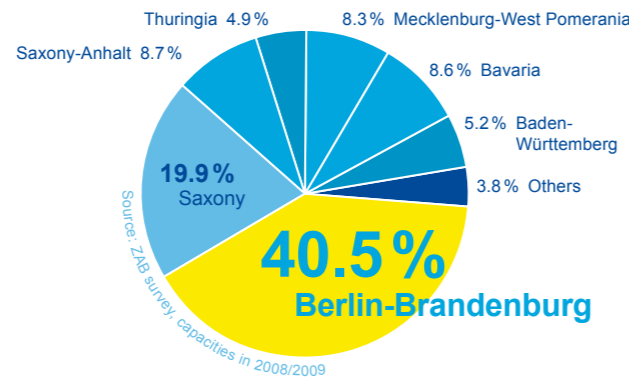
### Investment Boom

Between 2008 and 2010, regional investment plans totaling over €1 billion were set into motion, many of which have already been implemented. In addition to solar module producers, such as Odersun in Fürstenwalde and Inventux Technologies in Berlin, an increasing number of companies from the entire spectrum of the solar value chain are investing in the region. For example, PVflex is planning a new production facility for the manufacturing of flexible solar modules. ALD Vacuum Technologies in Berlin has been producing equipment for the manufacturing of polycrystalline silicon blocks since 2007. In Brandenburg, the Interfloat Corporation has been producing high-quality solar glass since the fall of 2008, while EQ-SYS and mp-tec now produce PV tracking systems.

### High-Tech at Work

The most efficient thin film solar cells in the world are developed at the Helmholtz Center for Materials and Energy (HZB). Together with industry partners, such as Sulfurcell and Solon, the HZB is currently developing a new generation of solar cells and processes at the PvcomB – Competence Centre Thin-Film- and Nanotechnology for Photovoltaics at the Berlin-Adlershof science park. Berlin's Sulfurcell is the leading producer of built-in CIS modules, while First Solar operates Germany's largest thin film solar module factory in the nearby city of Frankfurt (Oder). Frankfurt (Oder) is also a major location for semi-conductor production and the largest center of solar expertise in Eastern Germany with three new solar factories, the Solar Center Frankfurt (Oder), the Leibniz Institute for Innovative Microelectronics (IHP) and many other major technological partners.

Photovoltaic module production in Germany's federal states



Berlin-Brandenburg produces the most photovoltaic modules in Germany.

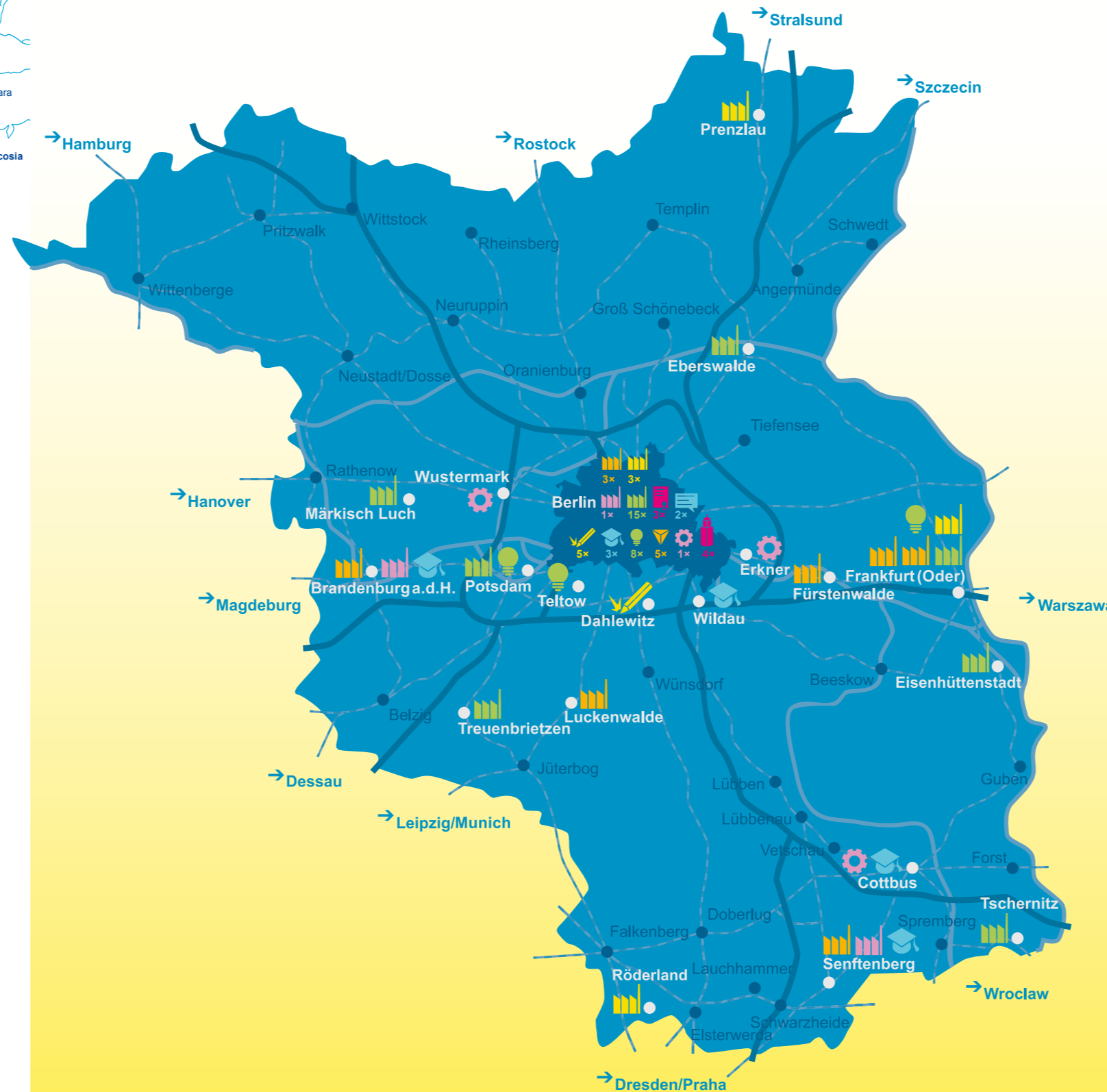


Energy efficient architecture using integrated photovoltaic equipment: SOLON's corporate headquarters in Adlershof.



With an annual capacity of 180 megawatts, aleo solar in Prenzlau operates one of the largest production sites for solar modules in Germany.

## The Berlin-Brandenburg Solar Region Europe's Largest Solar Cluster



## Strategic Solar Energy Networks Companies, R&D Institutes, Associations

### SOLAR ENERGY COMPANIES

- Thin Film**
  - EPV SOLAR Germany GmbH, Senftenberg [www.epv.net](http://www.epv.net)
  - First Solar Manufacturing GmbH, Frankfurt (Oder) [www.firstsolar.com](http://www.firstsolar.com)
  - Global Solar Energy Deutschland GmbH, Berlin [www.globalsolar.com](http://www.globalsolar.com)
  - Inventux Technologies AG, Berlin [www.inventux.com](http://www.inventux.com)
  - Johanna Solar Technology GmbH, Brandenburg an der Havel [www.johanna-solar.com](http://www.johanna-solar.com)
  - Nanosolar GmbH, Luckenwalde [www.nanosolar.com](http://www.nanosolar.com)
  - Odersun AG, Frankfurt (Oder) [www.odersun.com](http://www.odersun.com)
  - PVflex Solar GmbH, Fürstenwalde [www.pvflex.com](http://www.pvflex.com)
  - SULFURCELL Solartechnik GmbH, Berlin [www.sulfurcell.de](http://www.sulfurcell.de)
- Silicon**
  - aleo solar AG, Prenzlau [www.aleo-solar.com](http://www.aleo-solar.com)
  - ALGATEC Solar AG, Röderland [www.algatec.com](http://www.algatec.com)
  - arinna AG, Berlin [www.arinnaag.de](http://www.arinnaag.de)
  - BerlinSolar GmbH, Berlin [www.berlinsolar.eu](http://www.berlinsolar.eu)
  - Conergy SolarModule GmbH & Co. KG, Frankfurt (Oder) [www.conergy.com](http://www.conergy.com)
  - SOLON SE, Berlin [www.solon.com](http://www.solon.com)
- Solar Thermal**
  - ARDIS Beschichtungs GmbH, Brandenburg an der Havel [www.ardis-gmbh.de](http://www.ardis-gmbh.de)
  - FK Solartechnik GmbH, Senftenberg [www.fksolar.de](http://www.fksolar.de)
  - KBB Kollektorbau GmbH, Berlin [www.kbb-solar.com](http://www.kbb-solar.com)
- Component Manufacturers and Suppliers**
  - 5N PV GmbH, Eisenhüttenstadt [www.5nplus.com](http://www.5nplus.com)
  - ALD Industrie- und Montagepark Staaken GmbH, Berlin [www.ald-imp.de](http://www.ald-imp.de)
  - Envire Solar AG, Berlin [www.envire-solar.de](http://www.envire-solar.de)
  - EQ-SYS GmbH, Treuenbrietzen [www.eqsys.de](http://www.eqsys.de)
  - Feintool/IMA Automation Berlin GmbH, Berlin [www.feintool.com](http://www.feintool.com)
  - FUSS-EMV Ing. Max Fuss GmbH & Co. KG, Berlin [www.fuss-emv.de](http://www.fuss-emv.de)
  - Graphikon Gesellschaft für Bildverarbeitung und Computergraphik mbH, Berlin [www.graphikon.de](http://www.graphikon.de)
  - greateyes GmbH, Berlin [www.greateyes.de](http://www.greateyes.de)
  - IFG Institute for Scientific Instruments GmbH, Berlin [www.ifg-adlershof.de](http://www.ifg-adlershof.de)
  - LayTec GmbH, Berlin [www.laytec.de](http://www.laytec.de)
  - Interfloat Corporation/GMB Glasmanufaktur Brandenburg GmbH, Tschernitz [www.interfloat.com](http://www.interfloat.com)
  - Jonas & Redmann Photovoltaics Production Solutions GmbH, Berlin [www.jr-photovoltaics.com](http://www.jr-photovoltaics.com)
  - mp-tec GmbH & Co. KG, Eberswalde [www.mp-tec.de](http://www.mp-tec.de)
  - PlasmaChem GmbH, Berlin [www.plasmachem.com](http://www.plasmachem.com)
  - Plasmatrix GmbH, Berlin [www.plasmatrix.com](http://www.plasmatrix.com)
  - Prediktor GmbH, Berlin [www.prediktor.de](http://www.prediktor.de)
  - RTG Mikroanalyse GmbH, Berlin [www.rtg-berlin.de](http://www.rtg-berlin.de)
  - SENTECH Instruments GmbH, Berlin [www.sentech.de](http://www.sentech.de)
  - skytron® energy GmbH, Berlin [www.skytron-energy.com](http://www.skytron-energy.com)
  - Sunzenit GmbH, Märkisch Luch [www.sunzenit.de](http://www.sunzenit.de)
  - TST-C Thomas Schmidt Consultants GmbH, Potsdam [www.tst-c.de](http://www.tst-c.de)
  - Yamaichi Electronics, Frankfurt (Oder) [www.yamaichi.de](http://www.yamaichi.de)
- Plant & Equipment Manufacturers**
  - B5 Solar by Havellandwind GmbH, Wustermark [www.b5solar.de](http://www.b5solar.de)
  - GermanSolar AG, Cottbus [www.germansolar.com](http://www.germansolar.com)
  - Parabel AG, Berlin [www.parabel-solar.de](http://www.parabel-solar.de)
  - sunfarming GmbH, Erkner [www.sunfarming.de](http://www.sunfarming.de)

### UNIVERSITIES AND COLLEGES WITH SOLAR ENERGY PROGRAMS

- Beuth University of Applied Sciences Berlin [www.beuth-hochschule.de](http://www.beuth-hochschule.de)
- Brandenburg University of Technology Cottbus [www.tu-cottbus.de](http://www.tu-cottbus.de)
- Brandenburg University of Applied Sciences [www.fh-brandenburg.de](http://www.fh-brandenburg.de)
- Lausitz University of Applied Sciences (FH) [www.hs-lausitz.de](http://www.hs-lausitz.de)
- Berlin University of Applied Sciences (HTW) [www.htw-berlin.de](http://www.htw-berlin.de)
- University of Applied Sciences Wildau (FH) [www.tfh-wildau.de](http://www.tfh-wildau.de)
- Technische Universität Berlin [www.evur.tu-berlin.de](http://www.evur.tu-berlin.de)

### RESEARCH INSTITUTES

- Ferdinand-Braun-Institut für Höchstfrequenztechnik, Berlin [www.fbh-berlin.de](http://www.fbh-berlin.de)
- ForschungsVerbund Erneuerbare Energien, Berlin [www.fvee.de](http://www.fvee.de)
- Fraunhofer Institute for Reliability and Microintegration (IZM), Berlin [www.izm.fraunhofer.de](http://www.izm.fraunhofer.de)
- Fritz Haber Institute at the Max Planck Society, Berlin [www.fhi-berlin.mpg.de](http://www.fhi-berlin.mpg.de)
- GKSS Research Centre Geesthacht GmbH (in the Helmholtz Association), Teltow [www.gkss.de](http://www.gkss.de)
- Helmholtz Center Berlin for Materials and Energy GmbH, Berlin [www.helmholtz-berlin.de](http://www.helmholtz-berlin.de)
- Leibniz Institute for High Performance Microelectronics, Frankfurt (Oder) [www.ihp-microelectronics.com](http://www.ihp-microelectronics.com)
- Leibniz Institute for Crystal Growth (IKZ) in the FVB Research Network Berlin e.V., Berlin [www.ikz-berlin.de](http://www.ikz-berlin.de)
- DFG Research Center MATHEON, Berlin [www.matheon.de](http://www.matheon.de)
- Max Planck Institute of Colloids and Interfaces, Potsdam [www.mpikg-golm.mpg.de](http://www.mpikg-golm.mpg.de)
- PvcomB – Competence Centre Thin-Film- and Nanotechnology for Photovoltaics, Berlin [www.pvcomb.de](http://www.pvcomb.de)

### ASSOCIATIONS/INITIATIVES

- Berliner Energieagentur, Berlin [www.berliner-energieagentur.de](http://www.berliner-energieagentur.de)
- German Solar Industry Association (BSW-Solar), Berlin [www.solarwirtschaft.de](http://www.solarwirtschaft.de)
- German Energy Agency (dena), Berlin [www.dena.de](http://www.dena.de)
- International Solar Energy Society, German Section, Berlin [www.dgs-berlin.de](http://www.dgs-berlin.de)
- Solar Region Berlin-Brandenburg, [www.solarregion-berlin-brandenburg.de](http://www.solarregion-berlin-brandenburg.de)

### EUROPEAN HEADQUARTERS/ADMINISTRATION CENTERS

- Despatch Industries GmbH, Berlin [www.despatch.com](http://www.despatch.com)
- Evergreen Solar GmbH, Berlin [www.evergreensolar.com](http://www.evergreensolar.com)
- Solarvalue AG, Berlin [www.solarvalue.com](http://www.solarvalue.com)
- Xantrex Technology GmbH, Berlin [www.xantrex.com](http://www.xantrex.com)

### PROJECT DEVELOPERS

- 30Grad Solar GmbH, Berlin [www.30grad-solar.com](http://www.30grad-solar.com)
- DACHLAND GmbH, Dahlewitz [www.dachland-berlin.de](http://www.dachland-berlin.de)
- eleven solar GmbH, Berlin [www.elevensolar.de](http://www.elevensolar.de)
- RGE Energy AG, Berlin [www.rgeenergy.de](http://www.rgeenergy.de)
- unlimited energy GmbH, Berlin [www.u-energy.de](http://www.u-energy.de)
- Younicos AG, Berlin [www.yunicos.com](http://www.yunicos.com)

### CONSULTING

- Apricum, Berlin [www.apricum-group.com](http://www.apricum-group.com)
- Eclareon, Berlin [www.eclareon.com](http://www.eclareon.com)

### SERVICE COMPANIES

- ib vogt GmbH, Berlin [www.ib-vogt.com](http://www.ib-vogt.com)
- PI Photovoltaik-Institut Berlin AG [www.pi-berlin.com](http://www.pi-berlin.com)
- Solarpraxis AG, Berlin [www.solarpraxis.de](http://www.solarpraxis.de)

