



**Our company**

Shape our future now ...





# Pioneers in renewable energy for Southwest Germany

GAIA – This abbreviation takes its name from GAIA, Mother Earth of Greek mythology, and bears the company philosophy of the Gesellschaft für Alternative Ingenieurtechnische Anwendungen (Association for Engineering and Technical Applications): we have been actively helping convert the energy system in South West Germany into renewable energy since 1999. Our core competencies consist of expertise in wind power and solar energy systems as well as custom designed sustainable energy solutions for corporate and municipal facilities (e.g. distribution facilities, water treatment plants), and also for private investors. Founded by CEOs Torsten Szielasko and Michael Wahl as a planning office, today GAIA boasts about 50 highly qualified employees who contribute daily to climate and environment protection to preserve our earth. Utilizing wind power and solar energy reduces the damaging effects of fossil fuel emissions on the environment and helps free society from the dangers from nuclear power generation and the high cost of imported energy sources.

## Holistic, ecological, flexible

We provide our customers with comprehensive renewable energy project solutions from project conception to a turn-key completion. We take care of the complete project, applying the full criteria of sustainable development. While doing so, we always observe the official norms and criteria for sustainability. After project execution, we also offer technical management of operational wind farms and photovoltaic systems in addition to a wide range of other services. Our services include site feasibility assessment studies, project design, project site and utility interconnection permitting, equipment and vendor selection, project construction management, commissioning, energy yield verification, and project operations and maintenance management. This applies to projects developed by other project planners as well.

## We align our practice with our principles

We put our manpower into sustainable energy projects and work under environmentally and climate-friendly conditions: our company has been based in an energy-generating historic building since August 2012. The building from the beginning of the previous century produces more energy than we need in terms of electricity and heating. The remaining power is stored and used as required or fed into public energy grid. Meeting the needs of tomorrow today. Our vision – to use 100 percent renewable energy to meet energy demand - has become realized.



GAIA company headquarters:  
an energy-generating old building with exemplary character



CEOs:  
Michael Wahl and Torsten Szielasko



This utility scale wind turbine generates electricity for about 2,000 three-person households.



# Our wind energy projects generate electricity at the lowest cost

Every wind energy project presents its own special challenges. At GAIA we use sophisticated wind energy project modeling techniques using the site's actual cartography to site the individual turbines to maximize energy yield as well as to analyze and quantify the prospective noise, blade shadow flicker, and construction impacts on the project site and the project's neighboring properties. GAIA uses qualified surveyors, economists, wildlife, and environmental experts to perform the studies needed to maximize project economics and minimize the project's environmental impact.

Once the project design is optimized, GAIA guides the project through the project regulatory permitting process using the studies, and the actual experts themselves, to verify to the permitting officials, that the final project design meets all local and regional environmental regulations for each regulatory jurisdiction.

## Wind power projects: in professional hands from start to finish

### 1 Site audit and site planning

Our specialists prepare feasibility analyses and potential studies to identify appropriate sites for wind turbines, taking geographical, regional planning-related, meteorological, technical and commercial information into account.

After identifying a site, the next step is detailed site planning. Comprehensive, internal wind yield, turbulence and exposure forecasts are drawn up for the most efficient wind farm configuration. Visibility analyses and visualisations are implemented to check and demonstrate the impact on the landscape.

The department later coordinates, assigns and monitors all relevant external expert reports by renowned accredited surveyor companies.

### 2 Securing land

Once suitable land has been identified, we secure it by concluding lease contracts and licensing agreements with the land owners, as well as setting out agreements with local municipalities with regard to road use and cable installation.

### 3 Mains connection planning / Transport concept

We draw up the appropriate mains supply connection and transport concepts.

### 4 Approval procedure

We take care of all the necessary studies and surveys, put together the documentation and monitor the whole process right up to final approval.

### 5 The finances

We partner with leading financial institutions to develop a solid financial concept.

### 6 Construction

Our construction managers coordinate all phases of the project right up to the completion of wind turbines or wind farms.

### 7 Commissioning

We organize and supervise the commissioning and the connecting to the public mains supply.

### 8 Operational management

Our management specialists take care of the administration, maintenance and servicing of the plants for municipalities and operators.

### 9 Direct marketing

We market our GAIA power, according to local regulations.



This roof system with a nominal capacity of 9,9 kilowatts (kW) generates enough energy for a three person home.



## Clean, favourable, independent – the power of the sun

The sun's energy is inexhaustible, CO<sub>2</sub>-neutral and therefore climate-friendly. With regard to photovoltaics, we are the point of contact for home owners, farmers, companies and municipalities. The photovoltaics team at GAIA plans and calculates solar power systems for roofs and open spaces, processes the financial side and organises expert surveys. We only use high-quality components which comply with German quality standards.

We carry out all necessary services from a single source. Based on a thorough on-site analysis and detailed digital planning, we develop all the necessary parameters to obtain the best solar power solution for the respective site, always taking the individual framework conditions and specifications into consideration.

We install systems on the roofs of public, private, commercial and agricultural properties, as well as on carports and open spaces. We can also take care of the remote monitoring and servicing of systems, and provide services such as system checks and module cleaning, if required.

And we go one step further with solar power: for photovoltaic systems we provide the latest storage solution systems by renowned manufacturers. In combination with intelligent energy management systems, they make clean energy available day and night, optimize electricity consumption and heat CO<sub>2</sub>-neutrally using a heat pump. We also plan CHP solutions in all classes for small and medium-sized companies.

We are happy to advise both private households and businesses with regard to photovoltaics and how to manage energy.

## References (projects)



### Solar power Private house Bad Schönborn

Nominal capacity  
6,480 kilowatts [kW]  
24 solar modules ,  
Type Axitec 170M/156-60S [270Wp]  
Inverter 1 x SMA Sunny Island 4.4M



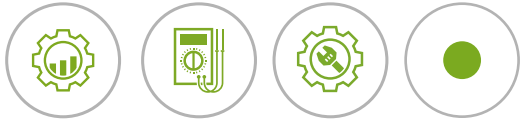
### Solar power Knieshalle Bobenheim-Roxheim

Nominal capacity  
155,820 kilowatts [kW]  
636 solar modules ,  
Type Eging EG P60C [245Wp]  
Inverter 6 x Power One



### Solar power Fruit and vegetable market Maxdorf

Nominal capacity  
684,68 kilowatts [kW]  
3043 solar modules ,  
Type Trina [225Wp]  
Inverter 61 x SMA



## Green lights all the way

# Service – Maintenance – Operational Management

Do you operate solar power or a wind turbine? We take care of the operational management, maintenance and service for the plant, also for municipalities and plants by most kinds of manufacturers.

## Service and Maintenance for Photovoltaic Systems

Generally, a photovoltaic system is a low-maintenance system. Throughout its 20-year lifespan, exposure to the environment can take its toll. This can cause malfunctions, which can lead to a sudden or gradual reduction in performance and earning capacity, even with high-quality systems. Having your system checked regularly and monitored helps prevent disruptions in your solar power system.

We identify weak spots in good time and rectify any faults. This way you maximize the lifespan of your system, maintain its value and optimize its performance and earning capacity.

## Operational management

A wind turbine is a complex system that consists of different components such as monitoring, control and regulating systems and grid supply technology. The smooth interaction of the individual components and subsystems ensures optimal earning capacities and therefore the best rate of return.

Our operational management team ensures the smooth running of wind turbines by means of computer-aided remote monitoring, regular inspections and servicing. We also communicate with surveyors and service providers, sort out insurance claims, manage accounting and keep you up to date regularly. We can also take care of the surroundings, e.g. any repair work on access roads, and green waste, upon request.

We also provide services for municipalities within the framework of the whole project process, such as the administration, maintenance and servicing of systems from different manufacturers.







# Increase regional added value in your area with local energy concepts

“The money of the village to the village”, said Friedrich Wilhelm Raiffeisen, father of the cooperative idea. Your community can also benefit from renewable energy projects, the implementation of which promotes added value, and also maintains this value in the region as local businesses become involved and jobs are created, generates business tax and lease income, improves infrastructure, and much more.

GAIA employs experts who analyse the regions in detail to identify the advantages and disadvantages of each site. Special energy concepts can be developed based on these results and by calling upon external data. Alongside wind and sun, the focus of planning covers almost the entire spectrum of biomass use, local heating networks and geothermal energy. We show communities how they can increasingly generate 100 percent of their electricity from renewable energies, and at the same time increase regional added value by involving the citizens themselves.

We are happy to advise municipalities and citizens who would like to be involved actively or financially in a renewable energy project.

## Profitable renewable energy solutions for companies and plants

Would you as a company or plant like to invest profitably in renewable energy systems of the future and be able to use the electricity produced for your company? We have the solution for this too.

You can use the roof of your company buildings, warehouses and production halls, of property used agriculturally or suitable open space to produce electricity. GAIA is happy to take on the planning, construction and/or the management or maintenance of the photovoltaic system or – depending on suitability – of wind turbines.

Or GAIA uses the space on your roof to construct and operate renewable energy systems. Environmentally friendly electricity produced in this way is considerably cheaper for your company than power from a conventional supplier. We can also take care of the maintenance, servicing and running of the system, if required.

As the construction and running of a wind turbine normally means a large initial investment, it is advisable to form interest groups to raise the necessary capital together. In your business park, it could be the joint investment of several companies which enables the construction and setting up of a wind turbine on an open space nearby. In this way, the combination of photovoltaics and wind power could mean that industrial estates will be able to operate their own electricity and local heating networks in the future.



At our 50 kW solar-powered fast-charge stations (CHAdeMO), drivers of electric cars can recharge their vehicle within 15 to 30 minutes.

## GAIA Energy: the environmentally friendly way

With GAIA energy, we are coming closer to our goal of being able to provide 100 per cent of our future energy demand through renewable energy: we promote electro mobility and the use of clean electricity from the region. In the field of electro mobility, we provide creative solutions and holistic energy concepts, as well as turnkey home charging points and fast-charge stations for communities and businesses.

We develop the right concept for you, taking your specifications into account as well as any current subsidies that may be available to you and the requirements of your energy provider. We supervise the construction, take on the connection to the mains and hand over the turnkey charge station. We then take care of the service and maintenance of the charge station. GAIA strives to enable citizens to purchase environmentally friendly electricity in the future.

## We promote electromobility – in our community too

Electromobility rounded off our portfolio in 2015, and since then we have planned and erected individual charging solutions, manufacturer-independent, for both private and business customers and communities. We take care of all the necessary steps up to the commissioning of the charging infrastructure and offer additional services such as maintenance and service – all from the one source.

Our company premises in Lamsheim near Mannheim have been the proud operators of a freely accessible fast-charge station with a CHAdeMO interface since April 2015. The special thing about it is that it is not only the first electro station with this technology in the entire Rhine-Neckar metropolitan region but a charging capacity of 50 kilowatts enables the user to fully recharge his electric vehicle, depending on battery capacity, in within 15 to 30 minutes. Since then, we have implemented several projects. In cooperation with municipalities in the region, we have set up public charging stations. We have also supplied private customers with wallboxes and charging points.



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