



Turn on the sun!

Heat neatly. Save neatly.

With the Energie⁺System by solarhybrid.

- › Generate eco-friendly energy
- › Save on hot water and heating costs
- › Receive attractive government subsidies

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Put an end to high heating costs with a solar energy plant by solarhybrid!



Energy for free charge

Generate energy using sunlight

Energy is needed in many areas of our daily lives: for heating as well as for hot water. Ordinary sources of energy, such as crude oil or natural gas, are of limited availability. In addition, they are often subject to volatile price fluctuations. The more rapidly natural reserves dwindle, the more expensive energy becomes. But with solar energy, it is completely different! The sun works as an energy producer free of charge, is free of emissions and, most notably, is an inexhaustible source of energy.

Whether you are a homeowner or a businessman, you can make use of solar energy with a solar energy plant. Rooftop solar panels are able to heat sanitary water by using solar energy only.

The hot water can then be used to take a shower or to do the washing up. Solar energy plants which are used to support the heating have a larger collector surface and can produce more hot water. Those plants can boost and improve heating efficiency – in the warmer months, up to 100 per cent of your heating demands are met.

Your gift: energy free to your door

Solar energy is free. Only the technology costs money. Yet considering the ever-increasing oil and natural gas prices, a solar energy system is definitely a decision for cost-effectiveness. This holds true, most of all, when you consider subsidised loans from the KfW Bank which really give your wallet a break.

Eco-friendly and trendsetting

Solar heat reduces CO₂ emissions and stops the greenhouse effect

There is nothing better than actively creating the future – with a love for children, a responsibility for our natural surroundings and the protection of the environment as guiding forces. Using a solar energy plant, you are consciously reducing the greenhouse effect and protecting our dwindling natural resources.

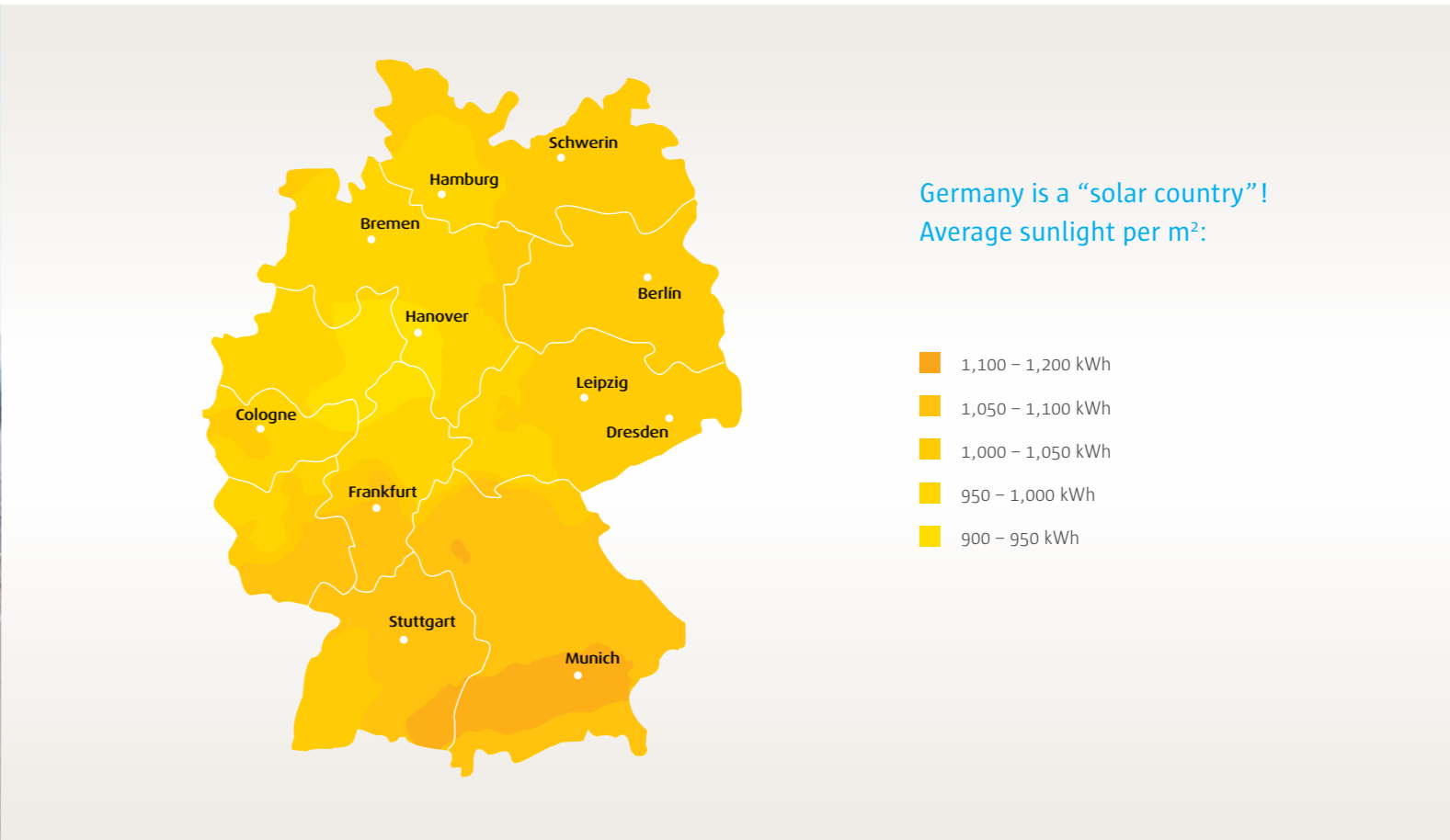
Solar energy is clean energy – its production substantially reduces CO₂ emissions which are the result of energy production from crude oil or natural gas. Solar energy relies squarely upon the sun's infinite energy potential.

Switching to solar energy is a small step for you, but an enormous leap for mankind's efforts to become environmentally conscious. It is a great comfort to know that you are doing the right thing for your children and their future!

- › 1 litre of heating oil emits 2.44 kg of CO₂
- › 1 m³ of natural gas emits 1.97 kg of CO₂
- › 1 m² of solar panels reduces the annual CO₂ emission by 156 kg



Prices for heating oil and natural gas soared in the past few years – a never-ending story. Gain independence from conventional energy sources – invest in solar energy!



Germany is a “solar country”!
Average sunlight per m²:

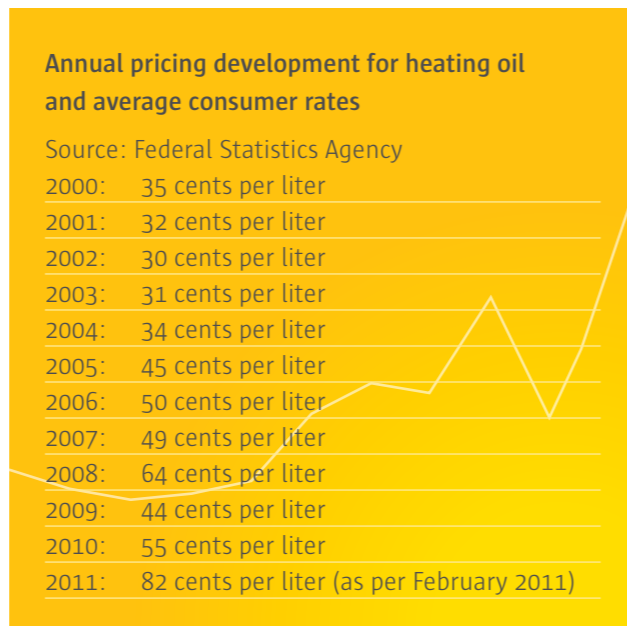
- 1,100 – 1,200 kWh
- 1,050 – 1,100 kWh
- 1,000 – 1,050 kWh
- 950 – 1,000 kWh
- 900 – 950 kWh

Invest in solar heat

Guard against soaring heating expenses

Any investment which reduces heating expenditures is an investment that pays off, because they incur throughout the year. Whether summer or winter, every household consumes hot water every day. Heating and hot water are the top energy consumers. They account for approximately 90 per cent of total household energy requirements.

A reconstruction of household heating and energy systems to fit the demand for high energy efficiency combined with a solar energy plant can help to reduce household energy expenditures substantially. If you are building a house, you can avoid further dependency on heating oil and natural and district gas by tapping the unlimited energy of the sun. Avoid being stunned by rising energy prices – invest in solar energy! Remember, the sun won't send you a bill!



Solar heat is an investment that pays off

From the north to the south, there is plenty of direct sunlight

The amount of solar energy hitting the surface of the earth is tremendous. In Germany, the average daily and seasonal amount of solar radiation measured equals approximately 1,000 kilowatt hours per square metre and does not alternate substantially throughout the different regions. As a result, operating solar energy plants throughout Germany is cost-effective. The average number of sun hours in Germany ranges between 1,300 and 1,900 per annum.

The measurement of direct sunlight is the median with which the yield of solar collectors is determined. A fundamental difference is made between direct and indirect sunlight. Direct sunlight strikes straight onto the solar collectors and produces the highest yields. Indirect sunlight occurs when the sunbeams are

blocked by clouds. Although the intensity of indirect sunlight is by no means comparable to the power gained from direct sunlight, solarhybrid's modern technology manages to achieve optimal energy output even by using indirect sunlight.

Various factors can affect the productivity of your solar energy plant. The angle and alignment of the roof, the shadows thrown by chimneys, trees or even neighbouring buildings can influence the productivity. The highest output is achieved with an angled roof which faces south.

You can save heating expenses with the very first rays of the sun – throughout Europe!



Generate solar heat

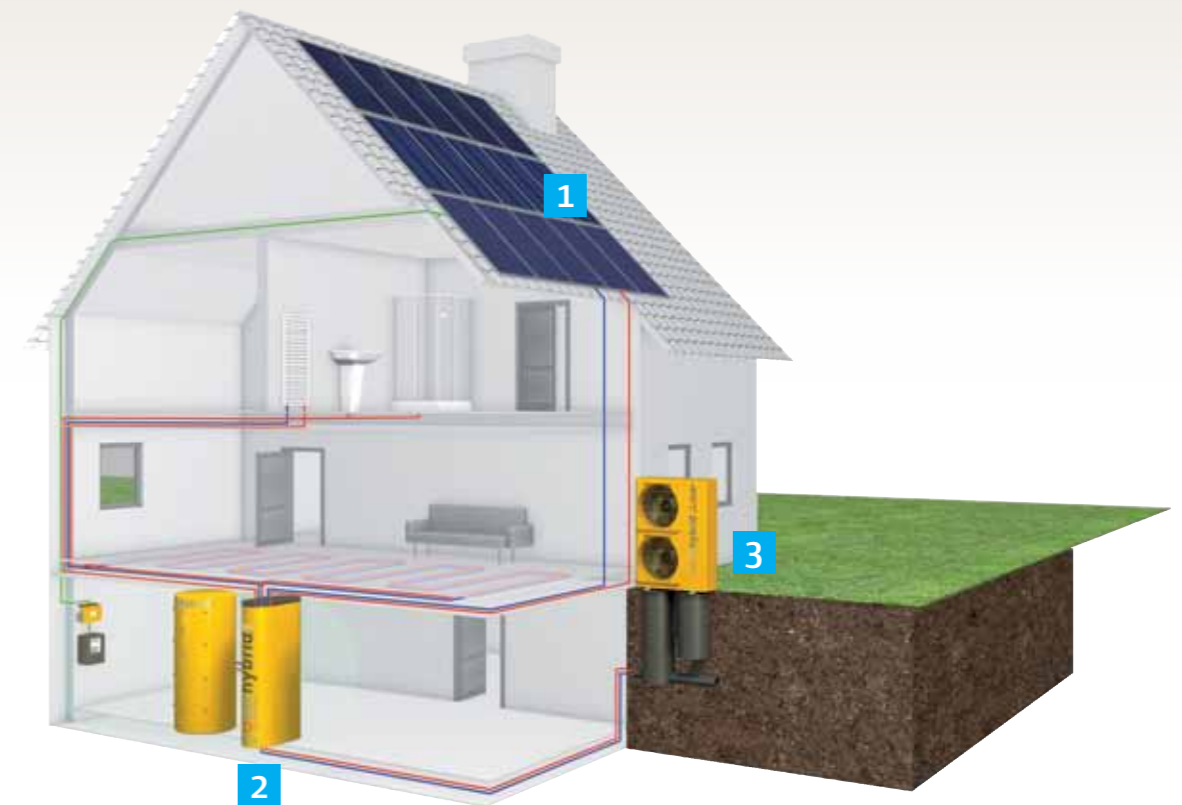
Using solarhybrid's modern technology

The easiest way to take advantage of solar energy is to install a complete solar energy plant – such as the **Energie+**System by solarhybrid. Since all components are aligned, mistakes during installation and losses of energy are avoided.

The **Energie+**System consists of solar panels, a central control unit, a heat pump and a heat store. Using the simple plug-and-play installation, enough solar energy can instantly be produced to cope without conventional energy sources such as heating oil, natural gas and district heating.

Furthermore, you will be generating solar electricity which you can use yourself or sell to an energy supplier. Most of the heat pump's demands for electricity are thus met.

The **Energie+**System is ideal for new homes as well as for restorations to make older houses more energy efficient. The individual components can be integrated step by step into the existing heating system, depending on the individual financial means and personal requirements.



1 The solarhybrid collector family

You can choose between various solar panels based on your individual requirements: solar heat collectors produce solar energy for heating and hot water requirements. The hybrid collectors produce both heat and electricity and, above all, in a much more efficient manner. With the invention of these hybrid collectors, solarhybrid has set new international standards. Photovoltaic collectors produce solar electricity. They are introduced into the **Energie+**System when the heating requirements have been satisfied and spare roof space is available.

The solarhybrid collector family substantially reduces expenses for hot water and heating: in older houses, up to thirty per cent and, in new ones, almost fifty per cent of the total energy requirements are covered. All of the collectors are fully interoperable and create an harmonious visual effect on rooftops, thanks to the uniformity of their design.

2 The energy tube – the solarhybrid Energiesäule®

It is the heart of your solar energy plant® (2) and functions as a control unit for all the energy-generating

devices (solar panels, heat pumps, standard furnaces) and all the energy-consuming devices (heaters, floor heating, hot water tapping points in kitchen and bathrooms). The energy tube cleverly manages your heating energy consumption to make sure this, the cost-effective solar energy is used first. To achieve that the energy tube supplies heat to the heat store (depicted on the left) from which, in turn, energy is released on demand. Only in cases of lacking direct sunlight, further heat generators will be activated. This process is extremely efficient.

3 The solarhybrid heat pump

A solar energy plant plus a heat pump is a fully fledged heating system which uses solar energy on two different levels. The solar energy plant directly produces heat from the sun, and the heat pump exploits the solar energy which is captured in the air. When the rooftop collectors are not able to produce enough energy, the thermal pump will be activated at once. The solarhybrid heat pump, powered by Mitsubishi Electric Zubadan, offers a very specific advantage: it is the first heat pump that is partially set underground. Therefore, the pump's noises are almost completely muffled, making it very quiet.

Solar panels for every need

The solarhybrid collector family offers a wide selection of products



The solarhybrid hybrid collector

The hybrid collector combines the production of solar heat and electricity in one collector. This solar panel uses the entire light spectrum of the sun and achieves, in comparison to solar thermal and photovoltaic panels, a higher level of energy production, yet uses the identical amount of roof space. In general, it holds true that increasing photovoltaic cell temperatures causes a decrease in solar energy yield. Depending on the type of solar cell, the energy loss amounts to 0.33% to 0.50% per degree Centigrade of heating-up. The hybrid collector on the other hand, includes solar thermal components that discharge the heat and, thus, prevent the photovoltaic cells from overheating. As a result, more thermal energy and electricity are produced. The solar heat saves heating costs and the solar electricity earns you hard cash.

In comparison to separate installations of solar thermal and photovoltaic collectors:

- increased output using identical roof area
- less installation work and reduced labour costs
- visually uniform appearance of the roof
- generation of solar heat and electricity, even on smaller roof areas

Solar energy is available for free – with solar panels on your roof, you can take advantage of this form of energy day by day, even in winter! The collectors absorb the sunrays to transform them into either heat or electricity. solarhybrid offers you the appropriate solar panelling suitable for your roof and your demands.



A single-family house in Lüneburg with eight hybrid collectors (20 m² collector area) as a rooftop installation. Solar energy yield per annum: 4,050 kWh for heating and water heating, incl. 1,350 kWh of electricity.



The wellness facility of Hotel Preishof in Kirchham, eastern Bavaria, with 97 hybrid collectors (240 m² collector area) as a rooftop installation. Solar energy yield per annum: 67,700 kWh for heating and water heating, incl. 13,000 kWh of electricity.

The solarhybrid solar heat collector

Solar heat collectors generate solar heat energy. When selecting solar collectors, it is essential to choose panels that are able to absorb a maximum of sunlight whereas a minimum of it is, in turn, emitted again. The solarhybrid solar heat collectors meet these demands. Therefore, you can make use of large amounts of solar energy for heating and hot water and profit directly from reduced heating costs!

Solar collectors are subsidised by the government. For further information and applications for grants, contact: Federal Office of Economics and Export Control (BAFA), www.bafa.de.

- approved and certified by Solar Keymark
- meets DIN regulations and BAFA specifications
- Inspection institute: SPF Solar Technology, Inspection Research, Rapperswil/Switzerland

Certification:



Inspection institute:

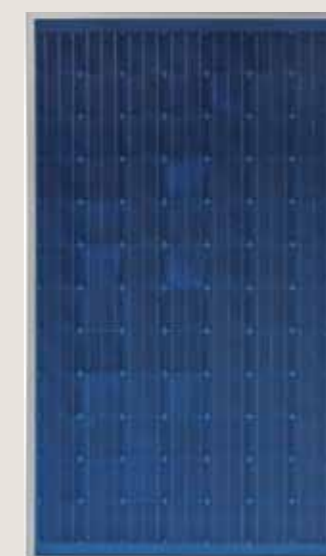


The solarhybrid photovoltaic collector

Photovoltaic collectors generate solar electricity. The panels are introduced into the **Energie+**System when the heating requirements have been met and spare roof area is still available.

Whether you choose to send the surplus of solar electricity into the power network or use it for yourself, it is beneficial to make use of any remaining roof area by installing photovoltaic panels. Government aid is guaranteed for 20 years by the German Renewable Energies Act (EEG). The advantage of personal use: you save on payments to an energy supplier, and you receive subsidies.

- TÜV (German Certification Board) inspected and certified
- DIN and International Manufacturing Standards IEC fulfils IEC 61215



The champion among heating systems

Reduces heating energy consumption throughout the entire year



State-of-the-art hydraulic and control technology in one device: solar heat exchanger, fresh water module, high efficiency pumps, control technology, charging pumps, heating circuit regulator and all hydraulic connections.



The energy tube – Energiesäule® – is a cutting-edge, high-quality technological product developed by solarhybrid's R&D division. The device controls and monitors all functions of heat generators and energy-consuming appliances connected to your heating system. Thus, the energy tube is able to manage and register the annual heat energy outputs of solar panels and heat pump. Two versions of the energy tube are available: active and passive.

The energy tube contains a multivalent intelligent control mechanism which enables it to instantly determine instantaneously the most cost-efficient heat generator. The required temperature is automatically determined and regulated. All features of the heating can be managed by one user-defined time programme.

Hot water – efficient and hygienic

The energy tube meets the highest standards in health regulations. Potable water is not stored; it only gets heated once a hot-water tap is turned on. This process saves water as well as power!

Furthermore, the conventional copper-bearing plate heat exchanger has been replaced by a highly efficient copper-free, rapid-electric-exchange mechanism made of stainless steel: a great invention by solarhybrid which eliminates the risk of calcification or legionella growth. It is, thus, no longer necessary to clean the heat exchanger on a regular basis!

Neat plug-in installation

Just plug in and go. The energy tube is completely pre-assembled and contains all hydraulic connections of heat generators and heat-consuming appliances required for your entire heating system. The plug-and-play principle saves time and reduces installation costs for your complete heating system.

The Energiesäule®

- › Increases the energy efficiency of all heat-generating systems: solar energy plant, heat pump, or boilers fuelled by natural gas, heating oil or wood pellets.
- › Reduces the energy consumption of all energy-consuming devices such as heaters, floor and wall heating units in kitchen and bathrooms.

The Energiesäule® Aktiv

- › Is a fully fledged boiler.
- › Contains a high-performance heat booster which heats even minimal quantities of heat from the thermal heat store (25–40°C) up to 55°C.
- › Makes the hot-water boiler redundant from March to November by combining hybrid and solar thermal heat collectors. Your heating expenses will drop by a large amount!
- › Is extremely efficient – i.e. by a degree of 5.0
- › In combination with a heat pump that uses external air, you won't need any boiler at all! Therefore, the heat pump is discharged and functions on a low-temperature range – virtually on the optimal level of efficiency.

solarhybrid heat pumps are so quiet that you will only hear the noise their ventilators make. That will remind you of the distant rushing of the sea. According to the TÜV Nord (German Certification Board), the acoustic energy is reduced by approximately 50%.



Create heat from air – protect the environment

Heat pumps are exceptionally eco-friendly heating systems

Heat pumps extract heat from the outside air, using it to produce energy for heating or hot-water purposes. In comparison to devices fuelled on heating oil or natural gas, air-based heat pumps can reduce heating costs by up to 50%.

The one crucial disadvantage of conventional air-based heat pumps – their high level of noise emission – was successfully eliminated in solarhybrid's heat pump. The solarhybrid pump, powered by Mitsubishi Electric Zubadan, is particularly quiet. This is due to cutting-edge technology which places the compressor underground.

The air-based heat pump is the ideal supplement to solar panels. Even the hybrid and solar thermal collectors can produce a great deal of the energy needed for hot water and heating. In older homes, it covers up to one third of the heating and warm-water requirements; in newer homes, almost up to 50 per cent.

When there is not enough natural sunlight, the thermal energy pump kicks in. Solar collectors and heat pumps together generate all the energy needed for hot water, floor-heating and convectors throughout the year. You will no longer need conventional heating and will therefore save annual maintenance costs.



Better than an oil or natural gas heating

solarhybrid's heat pump is much more efficient than oil heating or a natural gas condensing boiler. Up to 80% of the required heat is extracted from the air. In combination with hybrid or photovoltaic collectors, the heat pump generates heat without emitting CO₂.

The entire range of solarhybrid's heat pumps regulates the heat output progressively according to the actual heat requirement. With this energy-saving inverter technology, your heat pump uses no more energy than a conventional clothes iron.



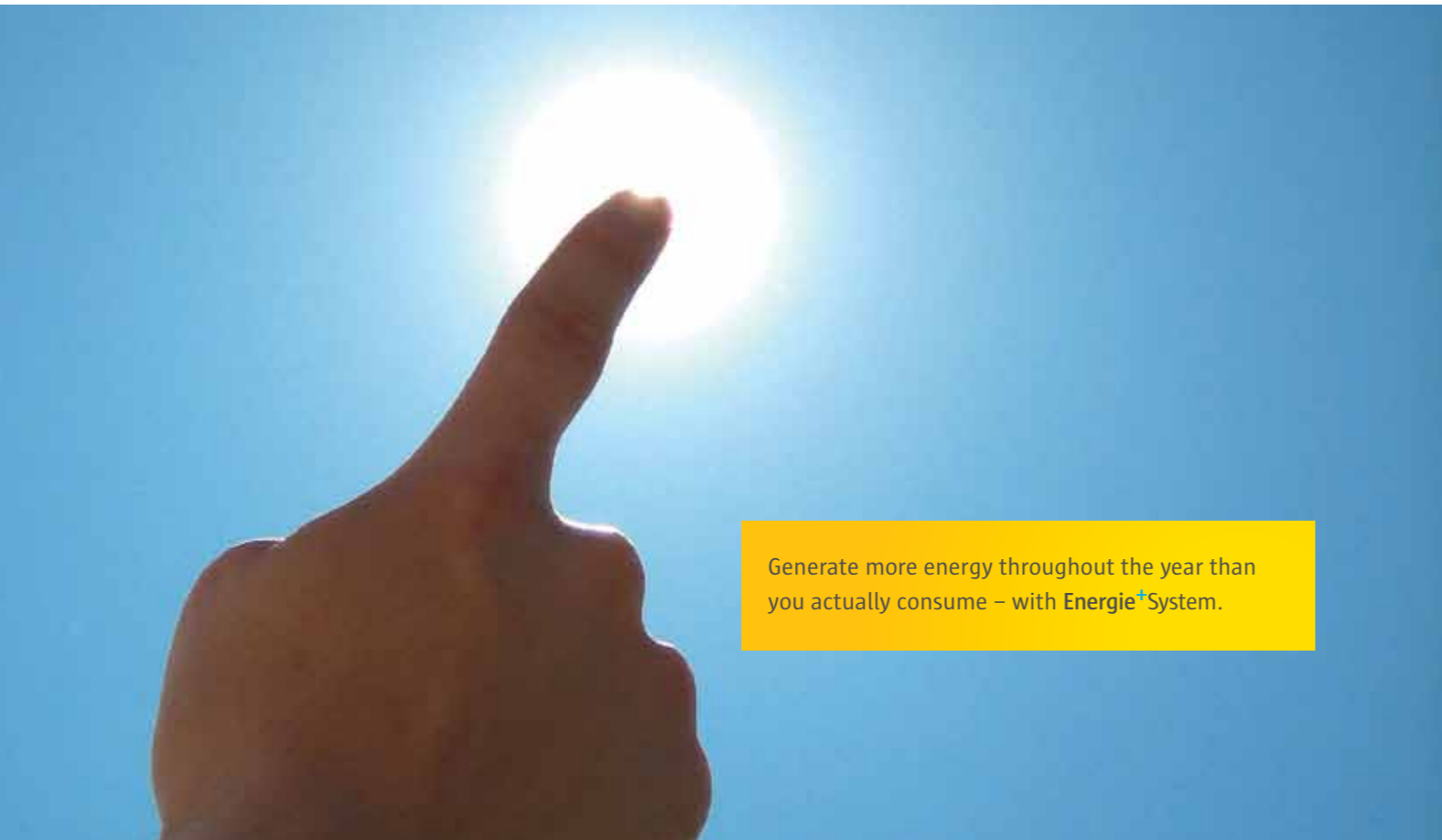
Quick and accurate installation

Why complicate simple things? The solarhybrid heat pump is installed quickly and accurately based on the plug-and-play principle. The plug-in module is lowered into a shaft in the ground and is connected to the **Energie+**System. Thus, the condenser is safe from frost damage and the noise of the compressor is subdued.

A refrigeration technician is not needed. Any heating technician can install the heat pumps quickly and cost efficiently.

- output 8.0–14.0 kWh for the heating of private and business premises
- 100% energy for floor heating and hot water*
- up to 80% free heat from the outer air
- flash injection technique: high level of operational safety as well as a consistent level of energy production
- maximum heat output up to –15°C outdoor temperature; comforting warmth up to –25°C
- energy-saving inverter technology: progressive regulation of energy
- energy production without CO₂ emission*
- quick and accurate installation based on the plug-and-play principle

* in combination with hybrid and solar thermal collectors



Generate more energy throughout the year than you actually consume – with Energie⁺System.

Information on subsidies from the federal government, the states and communes:

- > www.kfw.de
Kreditanstalt für Wiederaufbau, KfW Förderbank
- > www.bafa.de
Bundesamt für Wirtschaft und Ausfuhrkontrolle, BAFA
- > www.foerderdatenbank.de
Bundesministerium für Wirtschaft und Technologie
- > www.thema-energie.de
Deutsche Energie-Agentur, dena
- > www.solarfoerderung.de
Bundesverband Solarwirtschaft, BSW
- > www.energiefoerderung.info
BINE Informationsdienst
- > www.erneuerbare-energien.de
Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit
- > www.baufoerderer.de
Bundesverband der Verbraucherzentralen



In a nutshell

The Energie⁺System by solarhybrid:

- > generates solar heat and electricity
- > allows for complete independence from heating oil and natural gas
- > heats economically without producing CO₂*
- > integrates various heat generators into the heating system
- > combines intelligent control units with optimised hydraulics
- > appeals through reliability
- > offers a permanent efficiency guarantee
- > is compact and saves space in the boiler room
- > is installed quickly, simply and free of errors
- > reduces installation costs by means of the plug-and-play principle
- > does not incur any further maintenance costs
- > can be expanded with heat generators and heat consumers at any point in time

* in combination with hybrid and photovoltaic collectors and private consumption of solar electricity

Sunny times ahead

Take advantage of investment subsidies and funding support

The federal government, the federal states and municipalities subsidise the installation of solar energy plants. They grant investment subsidies and extend low-interest rate loans. In some cases, various funding programmes from the local communes can be combined.

The federally owned KfW Bank offers long-term and low-interest rate loans through several programmes. The loan covers up to 100% of the applicable investment costs. KfW loans are offered directly through local banks.

Applications for financial aid should be submitted prior to ordering and installing your solar energy plant. Therefore, as soon as you have decided to acquire a solarhybrid system, you should begin gathering information regarding subsidies and financial aid. Please feel free to contact us – we will gladly advise you.



Service by experts

Your solar energy plant from our business partners in your vicinity

The installation of a solar energy system is the responsibility of an experienced and qualified professional. solarhybrid comes with a nation-wide network of business professionals who have years of experience both in planning and installing solar energy plants. All of our business partners receive training, testing and certification on a regular basis at the sohy Academy. This assures that your solar energy plant will be installed competently and on schedule and that the work is of a reliable quality.



Our local specialists will accompany you from the planning stage straight through the installation. You will benefit from an in-depth consultation, excellent service and the confidence to have a competent contact person on location, even after the system is installed.

A professional technician will visit you for an initial assessment of your home. Afterwards, the technician will develop an individually tailored plan for your very own solar energy plant. solarhybrid's specialised and internally developed sohy software will calculate how the optimal level of solar energy can be gained for your home. The ready-to-use installation of your solar energy plant will then be completed quickly and professionally.

Effortless installation

Four simple steps to your own solar energy plant

All right, you decided to buy a solar energy plant from solarhybrid. Now all you have to do is to call us at +49 (0)2961 966 460 or fill out the contact form which can be found on our website: www.solarhybrid.ag.

> Step 1

We put you in touch with one of our professionals in your vicinity.

> Step 2

Our competent technician will visit you to assess and analyse your house, as well as to prepare an individually tailored plan for the ideal solar energy plant corresponding to your requirements and wishes.

> Step 3

You will receive a non-binding offer from us including relevant information regarding possible government funding and subsidies, a personalised financing outline as well as a profitability calculation.

> Step 4

Once you have made your decision, solarhybrid will deliver your solar energy plant on schedule and will arrange to have it installed accurately by trained professionals. From now on, each and every ray of sunshine means free heat and electricity for you!



Solar heat- made in Germany

Durable and certified quality from Markranstädt

solarhybrid offers a wide selection of solar thermal products and systems. At our location in Markranstädt near Leipzig, hybrid and solar thermal collectors, energy tube – Energiesäule® – and heat pumps are produced. The heat stores and control units are also configured there. The production is ultra-modern and manufacturing is excellent.

The solarhybrid brand also stands for durable and certified quality. All products meet the quality requirements of the European markets. In order to ensure such a high level of quality, solarhybrid cooperates with recognised testing institutes and regularly invests in modern production technology and materials. It goes without saying that permanent attention is given to a careful use of natural resources as well as to price optimisation for our customers.

The heat pumps are produced in cooperation with Mitsubishi Electric Europe. Mitsubishi supplies the high-performance Zubadan system technology, which is an essential component of the heat pumps. This cooperation resulted in the production of one of the most quiet heat pumps using outside air available today. These are produced and distributed exclusively by solarhybrid.

For solarhybrid, quality means far more than simply meeting market specifications. The uncompromising pursuit of perfection and the attainment of absolute customer satisfaction are the ultimate goals of the corporation. Experienced personnel, state-of-the-art technology and a comprehensive quality-control management provide an excellent foundation.

Certification:

Inspection institute:



Quality made in Germany:





1 euro per m² of solar panels for Kenya!

Solar energy generates schools
One euro will be donated to the sohy Academy in Kenya for every m² of solar panelling installed. More information on solarhybrid's financial aid project can be found at www.sohy-academy.org

solarhybrid supports schools

The sohy Academy Kenya project invests in the future

The solarhybrid AG accepts its social responsibility and acts in an environmentally sustainable manner. The company is driven by an innate desire to help!

In Africa, education gives children a future and is often a matter of life and death. In order to enable children from even the poorest of families to gain access to educational possibilities, solarhybrid founded the project sohy Academy Kenya e.V. It is a primary school with nine class levels and its own pre-school, boarding school, sport facilities and a self-contained power supply.

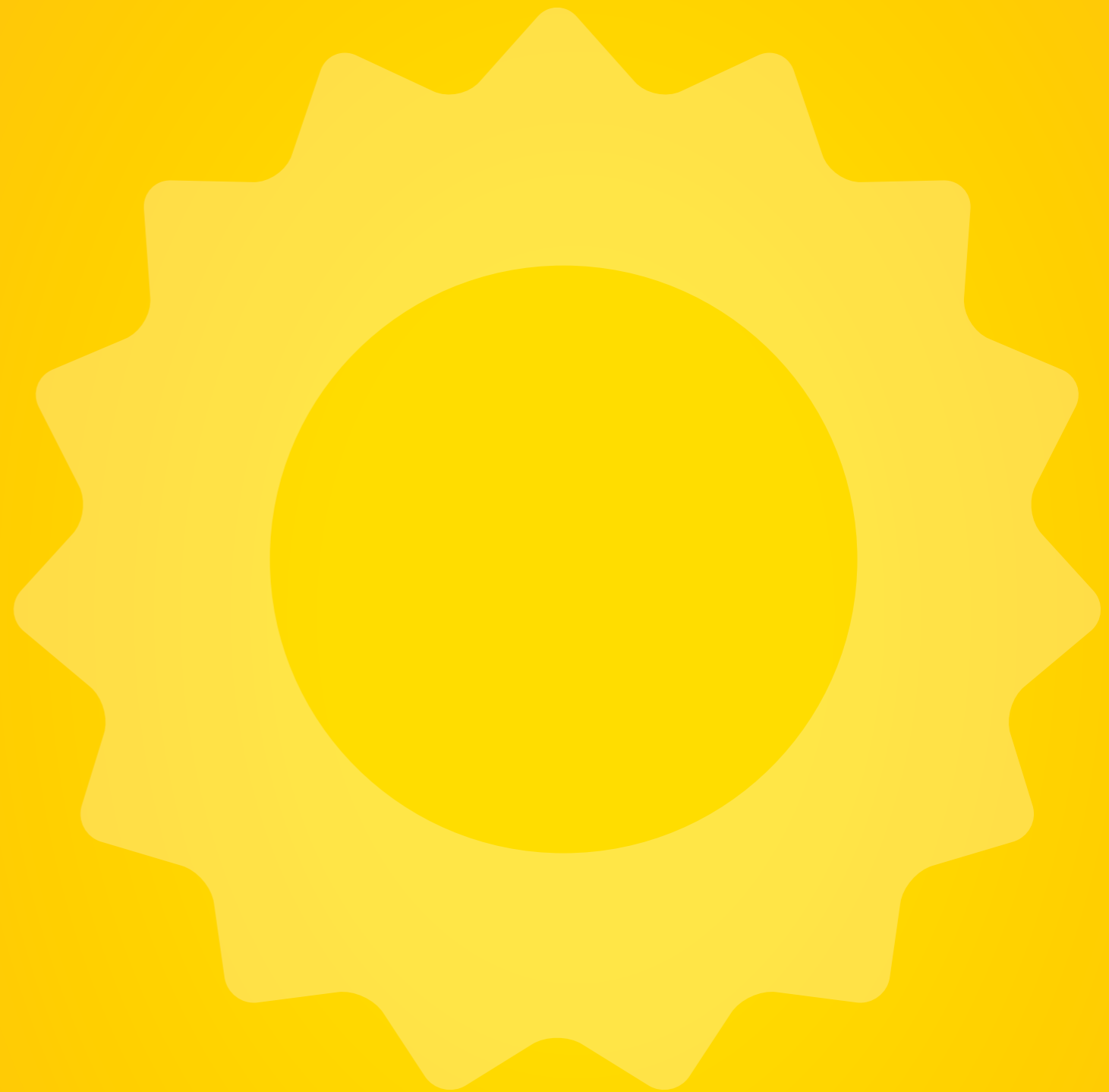
The most unusual aspect of this financial-aid project is that 100% of all contributions are funnelled directly into the project.*

solarhybrid guarantees this and solarhybrid's management personally supports it.

Furthermore, for every square metre of solar panels installed, one euro is donated to the sohy Academy Kenya. Your investment automatically becomes an investment in the future of these children.



* minus charges for the selected form of money transfer



A qualified professional is available at your convenience
for individual informative consultation:



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