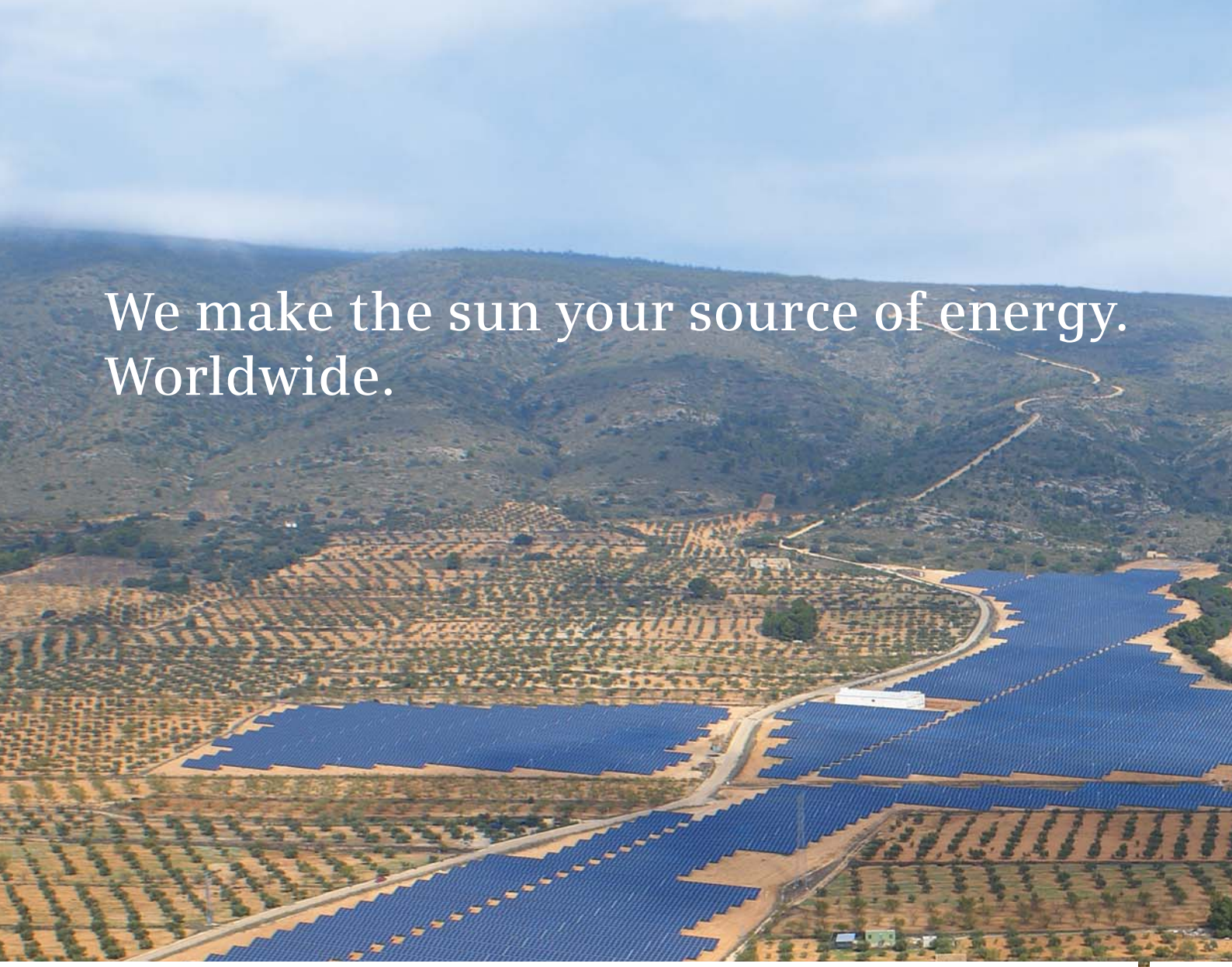
How do you utilize the power of the sun most efficiently?

SINVERT inverters and components for PV plants:
maximum yield together with top durability and reliability.

Answers for the environment.

SIEMENS



We make the sun your source of energy. Worldwide.

Making extremely efficient use of the sun and saving on a grand scale in the process. We at Siemens can give you the support you need with our comprehensive portfolio: SINVERT, the economical grid infeed system from Siemens – from plant planning through to medium-voltage components.
As a trendsetter in the field of photovoltaic technology – with 40 years of experience – our solutions make us a reliable and experienced partner across the globe when it comes to making solar energy a key factor in your success. As professionals in the field, we keep a constant eye on your total cost of ownership. With SINVERT, we can offer you a complete and economical solution including service which assures you higher yield, lower costs, more safety and more reliability right from the very beginning – and throughout the whole life cycle of your PV plant. Discover the benefits and together with us make the sun your source of energy.

Get into the sun – with SINVERT

With SINVERT, you have the specialists for economical PV inverters on your side.

Beautifully simple. Everything from a single source.
With SINVERT, you get everything you need for an efficient PV system from a single source: a versatile standard system with a high level of technical development, fast service and reliable maintenance.

Your benefits:
Consistent functionality is ensured. You save yourself interfaces. And you ultimately profit from the low total cost of ownership of your system.

Tried and trusted. Absolutely reliable.
SINVERT is based on thoroughly engineered Siemens standard industrial products which have proved their worth over decades and which can be found today in numerous solar parks around the world. Our equipment meets country specific conditions as well as international requirements.

Strong partners. Fast and global service.
Our international Regional Companies support customers all over the world. Thanks to our close proximity to our business partners and flexible production of standard industrial components, we are in a position to assure short delivery times and reliable service. Our global service ensures that you will be able to obtain spare parts for many years to come – anywhere in the world. Even maintenance contracts can be tailored to fit your needs.

The complete SINVERT portfolio

SINVERT PV inverters

Whether intended for the commercial or power plant segment: SINVERT PV inverters assure you maximum energy yields with efficiency levels of >98%!

We offer you SINVERT PVM inverters in the power range >10 kW. Thanks to our well scaled device family, small to medium-sized systems can be realized in any size you require.

This three-phase inverter family comes in the form of wall-mounted units and is characterized by its compactness, robustness and durability (IP65). The units are suitable for use in PV systems from 10 kW up to megawatt level.

Our SINVERT PVS inverters are available for medium-sized to large-sized photovoltaic systems from 350 to over 2000 kW. The special highlight of these central inverters: use of the cluster design also known as master-slave concept.

They can also be supplied as ready-to-connect units in a PV container including medium-voltage transformers and switchgear. This type of Siemens solution can be found in some of the largest PV power plants in the world.

Plant dimensioning and monitoring

PV plant monitoring and layout planning from Siemens stand for the highest possible level of safety and transparency as well as for perfect supervision – throughout the entire PV plant.

Comprehensive performance and yield monitoring are of the utmost importance when it comes to assessing the performance of solar installations. For example, using the data transmitted to the plant monitoring system by SINVERT photovoltaic inverters, you can carry out your assessments quickly, simply and at low cost. At all times, you are in a position to judge profitability and maintain the entire system in a technically top condition – for high levels of economic efficiency on a long-term basis.

Benefit across the board with SINVERT

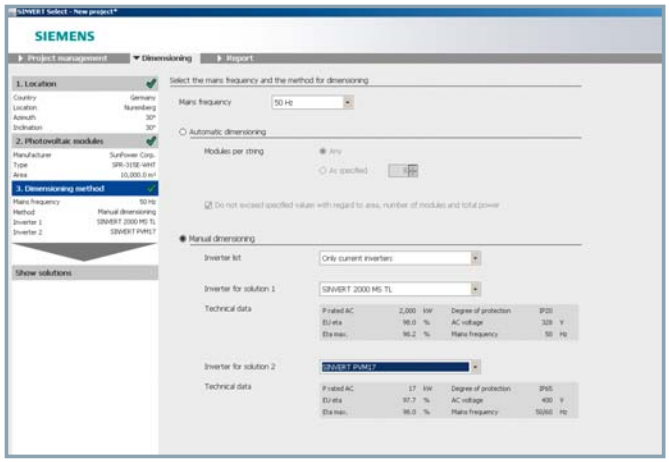
Your benefits

- Optimized efficiency at the highest possible level
- Low service and maintenance costs
- A particularly long service life
- A high level of availability
- Best performance ratio

SINVERT Select
We supply you with the free SINVERT Select dimensioning program to achieve the ideal PV plant configuration. This software helps you identify the best possible configuration for your PV plant with Siemens SINVERT inverters. The program calculates all the feasible combinations for most of the PV modules available on the market together with the SINVERT inverters from Siemens – and it helps to evaluate and optimize the calculated combinations in a simple and comprehensible way.

SINVERT Webmonitor
You can use this portal to monitor your solar installation day and night from anywhere in the world and to call up the data you require. You can analyze your inverters and system data via the Internet so that you are in a position to identify problems quickly. In the event of a malfunction, you also have the option of being automatically notified by e-mail.

WinCC for PV power plants
With our SIMATIC WinCC industrial software, we offer you a user-friendly way of monitoring and visualizing the functioning and yield of your entire photovoltaic system. Using remote real-time supervision, faults are detected immediately and configuration modifications are possible by means of the remote functionality – resulting in significantly lower service costs. The software also provides comprehensive verification of all occurrences and measurements right through to the medium-voltage substation, e.g. concerning the current power yield or data collected since your PV system entered service. This allows precise analyses to be made with the aim of achieving targeted optimization of system operation.



Options and add-on components for enhancing the functionality of your PV system

The basic SINVERT system can be extended and enhanced by a variety of different options. These are designed to allow customers to add features to suit their own specific requirements. Many customers decide in favor of add-on components in order to maximize the yield of their solar installation.

Service and warranty

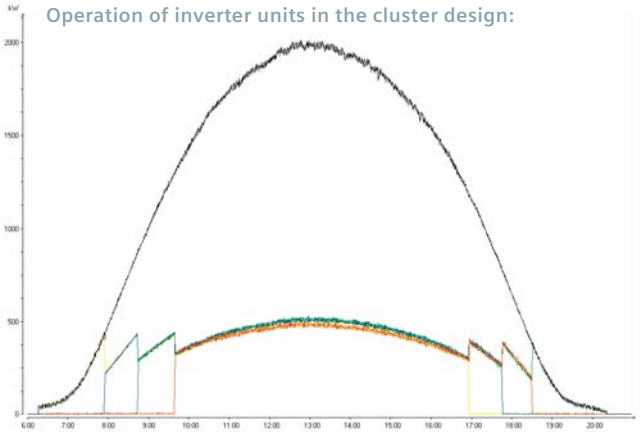
Worldwide service and support – 24 hours a day: Anyone who intends to operate a PV plant for 20 years or more expects to be offered an excellent service and support concept by the system supplier. That is why we cater to the particular requirements of our customers in individually arranged service contracts. These cover every possible detail from response times to comprehensive, in-depth troubleshooting. Customers view the availability of components used in the PV inverter as a critical feature of the service concept. That is why Siemens has selected components for all its SINVERT solutions which have already proven successful in millions of industrial applications.

Together with our long-standing and extensive expertise, this service and warranty approach provides the basis for a successful and sustainable future. We are happy to share our know-how with our customers.

All in all, a host of arguments in favor of SINVERT – from individual components right through to holistic and lasting solutions for PV plants.

Cluster design (master slave system):
SINVERT central inverter units can be used either as a stand-alone solution or in a combination. The cluster concept with "rotating lead" – introduced on the market by Siemens over a decade ago – is particularly advantageous in the event of changing intensities of solar radiation in the course of the day or in cloudy conditions. Depending on the degree of radiation, the inverters required are switched in or out by means of an ingenious process. This increases the efficiency of the solar installation, especially in partial-load operation. Only the required number of inverters is operated depending on the prevailing light intensity. The connection of up to four inverters in the form of a cluster concept enables the plant to start up even at low levels of solar radiation and to achieve very high efficiency levels even in the low output range. The rotating lead (inverter) contributes to the long useful life of the system, for the inverter unit with the lowest number always functions as the lead device and the operating time is therefore distributed uniformly among the inverters.

Operation of inverter units in the cluster design:



SINVERT references:
We make the sun your source of energy. Worldwide.

China: **Shi Lin – 10 MW**

Czech Republic: **Břeclav – 1.1 MW**

Germany: **Rothenburg Airport – 21 MW**

France: **Weinbourg – 4.5 MW**

Italy: **Rende Cosenza – 1 MW**

Malaysia: **Kuala Lumpur – 362 kW**

Portugal: **Serpa – 11 MW**

Spain: **Beneixama – 20 MW**

South Korea: **Gimcheon – 20 MW**

The Netherlands: **Floriade – 2.3 MW**

USA: **Desoto, Florida – 27 MW**

Further information

You will find an overview of our entire product and services portfolio on the Internet at
www.siemens.com/sinvert

We will also be happy to answer your questions in person
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