

Making best use of the power of the sun

Highly efficient inverters for grid-connected PV installations

20
More than
20 years Swiss Quality
and Experience

 **SolarMax**[®]
SWISS QUALITY

■ Nothing is more powerful than the sun

Sputnik Engineering has been using this power for more than 20 years now. In doing so we are making a valuable contribution to protecting the environment and generating renewable energy, using our highly efficient SolarMax inverters.



Dear Readers,

We care about our environment. For many years we have firmly believed that solar energy can and must make a large contribution to electricity production. This is why we founded Sputnik Engineering in 1991 – with the aim of utilising the sun's energy commercially as a way of protecting our environment. Thus, developing and producing grid-connected solar inverters was the focus of our work right from the start.

What was then just a small workshop has long since become a company operating internationally. Every single one of our employees shares our enthusiasm for getting the best out of the

power of the sun. Today, thanks to this commitment, we range amongst the international market leaders in our sector.

At the same time we are and remain an owner-managed and self-financed company. Our intention is to further strengthen this strong position. As pioneers and engineers we have made a crucial contribution to the success of solar energy utilisation. And because we think and act in terms of sustainability, we are already seeking tomorrow's solutions today.

A handwritten signature in black ink, reading "Ch. von Bergen". The signature is written in a cursive, flowing style.

Christoph von Bergen

■ From pioneering work to market success

SolarMax was quick to recognise the signs of the times and to invest in the two growth sectors of environmental conservation and solar energy. By concentrating on what we do best right from the start, we were able to carry out important pioneering work.



Quality made in Switzerland

Founded in 1991, Sputnik Engineering AG has its headquarters in Biel, Switzerland. Symbolising the proverbial Swiss quality, not least on account of its watch-making tradition, the town is where the highly efficient inverters for grid-connected PV installations have been developed, produced and exhaustively tested for a long time now.

Solar energy is boundless

We are selling the devices we make under the brand name SolarMax in more and more countries, supported by several subsidiaries in Europe and China and, above all, by our international customers. We can also rely on many

qualified partners who meet our high quality requirements and therefore give us the space we need to develop our core competencies.

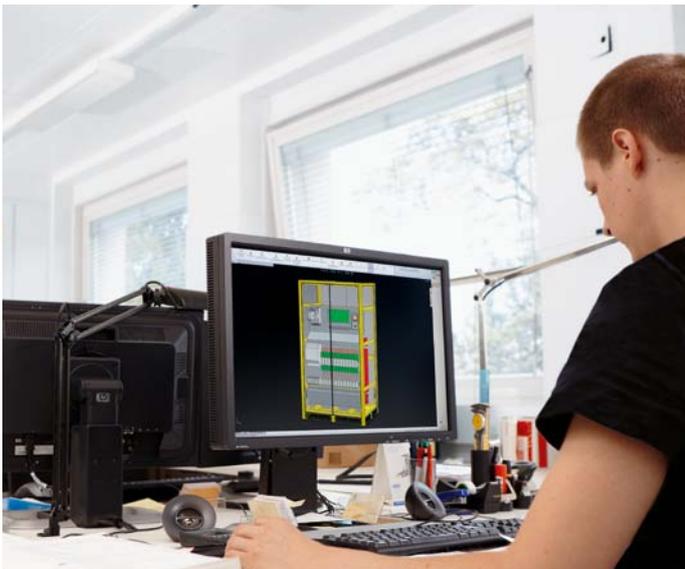
On course for growth from day one

As the solar industry grows, so we grow too. We recognised the growth potential of this sector as early as two decades ago, so we have since become a part of the boom. Since the company was founded there has been a marked increase in the number of our employees and the size of our production capacities. We are now ranging amongst the leading manufacturers of grid-connected inverters worldwide – a position we want to expand continuously.



■ Customer focus ensures market strength

Our customers should not merely know what our products are all about. They should also know that they can rely on top-quality service at all times. Many of them show their gratitude by working together with us for many years.





Gaining trust

Alongside all the technological aspects, the focus of our daily work remains our customers. Their wishes and needs are what drive us. We know that our customers rely on us to give them comprehensive advice, meet delivery deadlines and provide outstanding service. However, we also want to support them in the long term – starting with their initial planning, via appropriate product selection and, finally, continuous monitoring of their PV installation.

Imparting knowledge

For dealers, installers and operators of PV installations we provide training courses we have designed ourselves, either at our company head-

quarters, in one of our branch offices or on site at the customer's premises. We have established the SolarMax training centre for this and developed a modular course structure which can always be adapted to meet the individual customer's wishes and needs.

Showing understanding

We want to understand our customers and support them in word and deed at all times. For this reason our experts are always there for you. You won't find tiresome queues and lengthy communication channels at Sputnik. We answer all our customer enquiries quickly, directly and simply. That's our promise!

■ System solutions for all requirements

Under the brand name SolarMax, Sputnik Engineering offers its customers inverters for every application area – from private houses to agricultural installations right up to solar power stations in the megawatt range.



The right choice every time

Be it string inverters for small or medium-sized installations, or large central inverters for solar power plants – we can supply you with the right device for every type of solar power installation. One way or another, the exceptional reliability and maximum efficiency of all our devices in all kinds of operating and weather conditions is impressive.

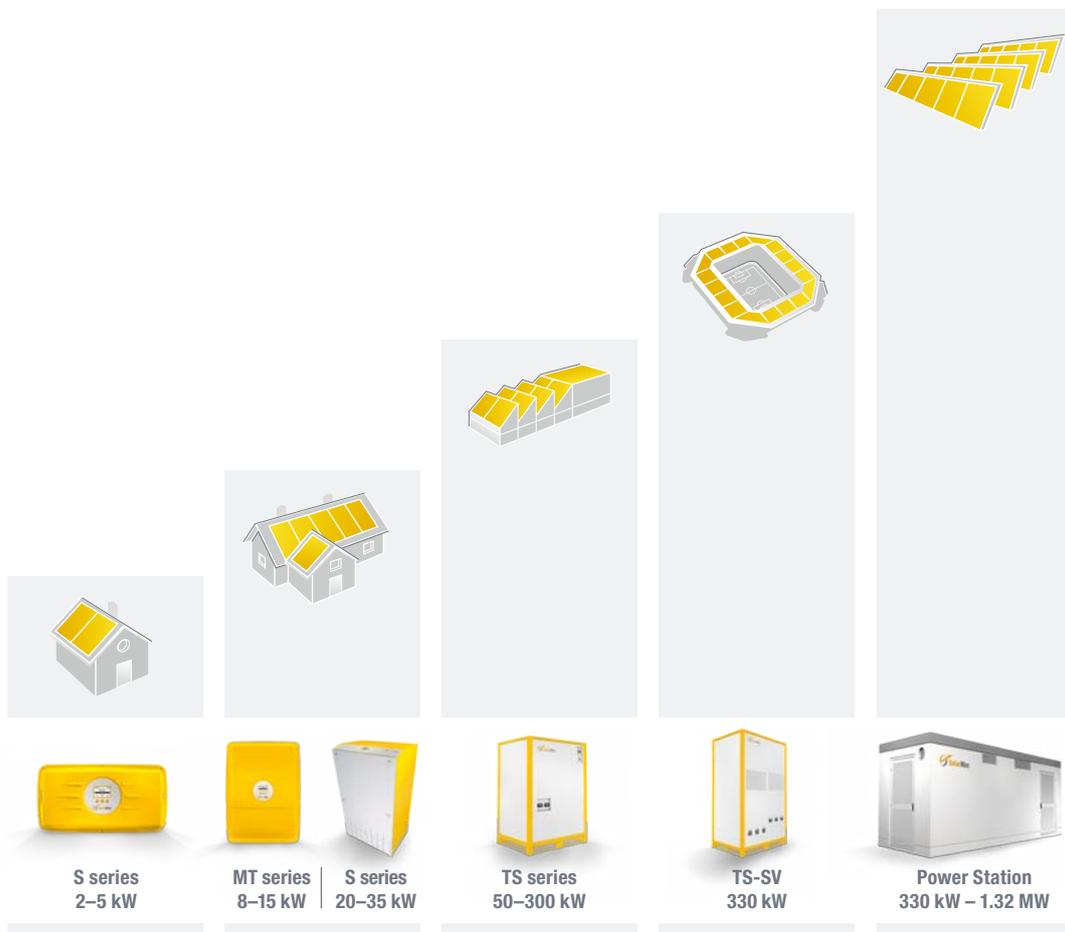
Trust is good ...

All SolarMax inverters must pass a rigorous suitability test before they can be used in practice and their cutting-edge technology and exceptional cost-effectiveness are impressive. Every inverter is tested and certified by the VDE Institute. Our string inverters come with a five-year guarantee which you can also extend to a maximum of 25 years. For our central inverters we have developed the MaxControl package. This offers our customers a complete service and monitoring solution with an optional extension of up to 25 years.

... the solution is monitoring

Our communication solutions are just as reliable and efficient as our devices. Standard equipment on every SolarMax is a communications interface which logs, visualises, analyses and evaluates all the important data and parameters. For this we have developed effective monitoring systems which can monitor up to 100 inverters simultaneously:

- MaxTalk for visualising measured values on a computer
- MaxWeb xp, a data logger for web-based communication and continuous monitoring
- The MaxWeb portal for access to photovoltaic installations in the internet
- MaxControl for the perfect, smooth operation of your PV installation with SolarMax central inverters continuously monitored by us.
- MaxMonitoring
The cost-free app visualises the performance data of the photovoltaic system and of individual inverters on site.



■ Swiss quality with high efficiency

Sputnik Engineering's technical competence is undisputed. We set standards in terms of quality, reliability and maximum yield with our SolarMax inverters.



Cutting-edge technology

Our inverters are extremely robust, absolutely reliable, highly efficient and more than cost-effective – this is what makes them stand out. All devices are used all over the world and are characterised by an impressive number of quality features.

For example, innovative cooling concepts ensure they can withstand even high ambient temperatures without a problem and, at the same time, the use of film capacitors substantially increases their product life.

SolarMax string inverters

These devices have no transformer and are typically used in small and medium-sized solar power installations. Thanks to their high efficiency of up to 98 %, the SolarMax string inverters achieve maximum yields. They can be used indoors or outdoors and their compact, lightweight design makes installation particularly easy.

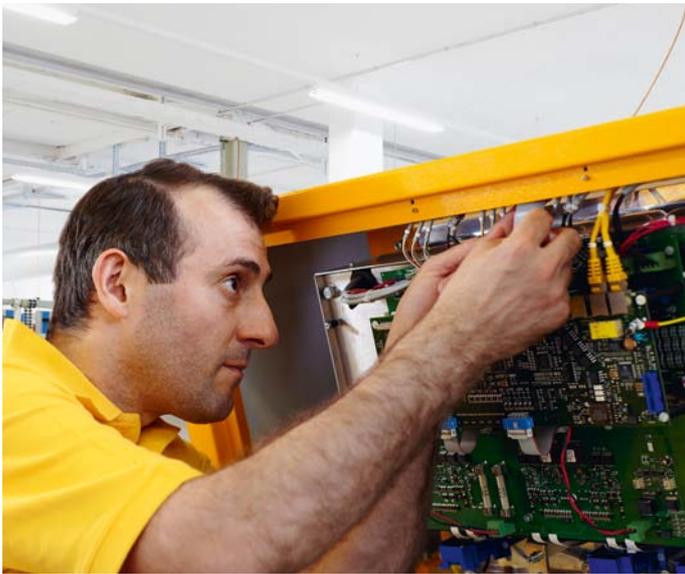
SolarMax central inverters

The SolarMax central inverters are suitable for medium-sized and large PV installations up to the megawatt range. No other manufacturer has as much experience as Sputnik Engineering in developing central inverters. All SolarMax central inverters feed electricity into the grid in three phases.



■ Top level service

When it comes to the field of after-sales services, we are second to none. Investments in the latest service tools and motivated employees ensure our customers receive perfect, all-round service.



Offering more than the standard

We make it as easy as possible for our customers. Easy ordering options, quick device replacement, qualified on-site service and much more: whatever the context, you can rely on us. In addition, we provide individualised service packages which are an effective means of tailoring our support to customer requirements and include all the components from system monitoring to training programmes.

Providing the best possible support

To guarantee the best possible customer support we have set up our own call centre at our company headquarters. The friendly, motivated employees who work here receive continuous training and know all there is to know about our technology. State-of-the-art software tools help us to make a highly effective assessment of all incoming calls. This enables us to continually improve our service and tailor it precisely to customer requirements.



■ Experiencing and living team spirit

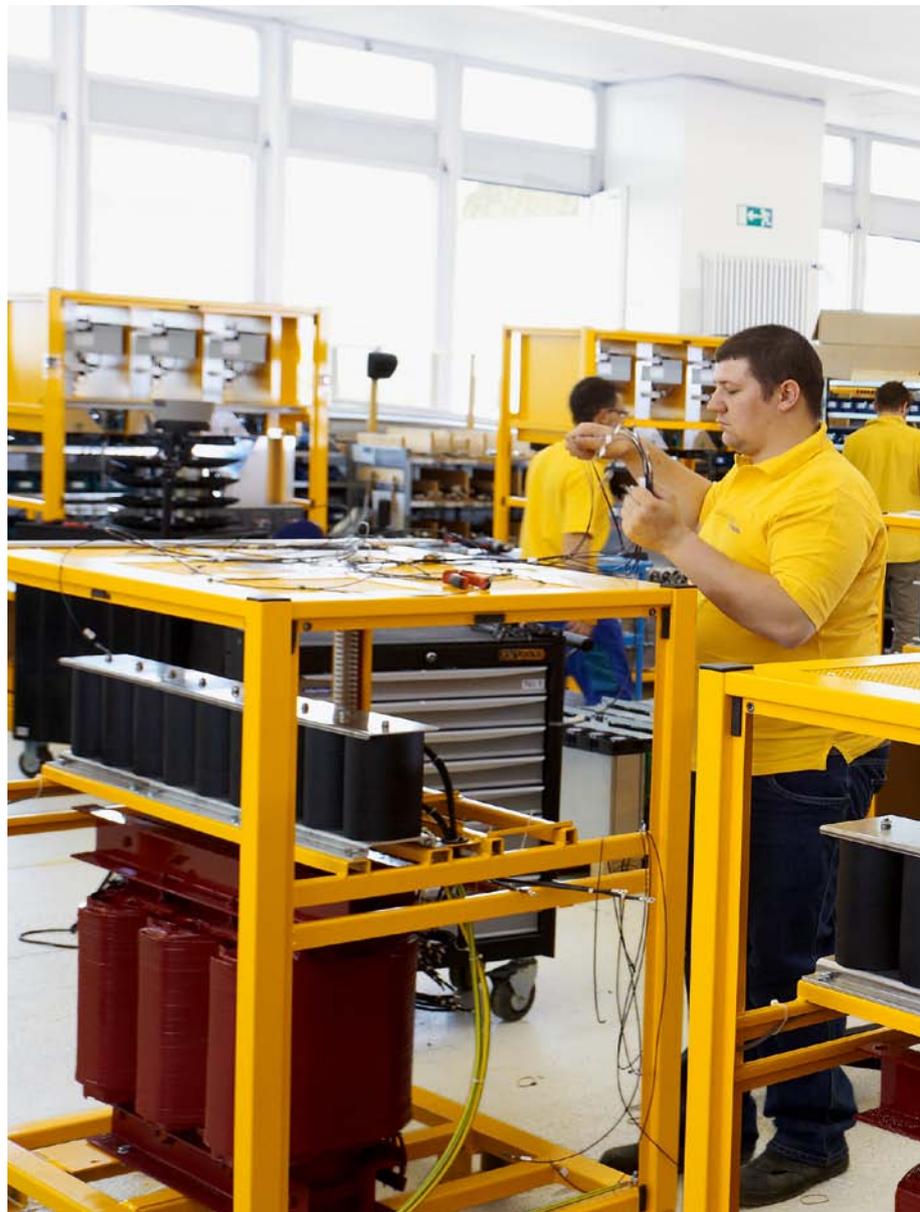
Without a highly qualified, committed workforce, the continued success of SolarMax would not be possible. From development engineers to service technicians, right up to customer advisers, all our staff share the same passion for the further development of solar energy.

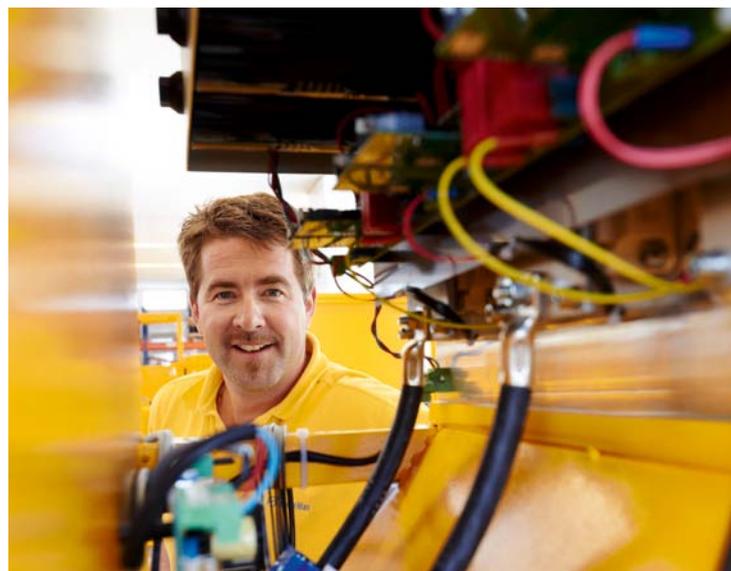
People with vision

The “Sputnik Spirit” is kept alive by people who live by our company philosophy and put it into practice every day. This includes both the desire to achieve and work hard and open and fair working relationships, not least those with our customers. To further strengthen this sense of belonging and identification with the company, we regularly hold social events such as sports days and other group activities.

A talented workforce

We follow the principle of flat hierarchies and rely on our employees to think and act independently and responsibly. This means every single member of staff can contribute his or her individual strengths to a motivated team. And so, as our company grows, our employees also continue to develop. Internal further training and qualifications are as much a part of this natural process as taking suggestions for improvement from the rank and file seriously.





Thinking and acting without borders

Like the sun's rays, we do not recognise borders when it comes to strengthening our market presence and maintaining closer relationships with our customers. This is why SolarMax is expanding all over the world.



You can find the contact details of our subsidiaries at www.solarmax.com/cont.

Acting locally

Along with our headquarters in Switzerland, we have founded branches in Germany, France, Italy, Spain, and China since 2001 – further branches are added continuously. Our presence in these countries has enabled us to have even closer contact with our international client base and give the highest consideration to any country-specific aspects. This concerns technical specifications as much as statutory framework conditions and regulations.

All-round performance

Although our inverters are developed and produced in Switzerland, our international subsidiaries are not intended solely for distribution purposes. They employ engineers and qualified solar power experts who can give their customers competent advice. They live the Sputnik spirit and design, implement, and monitor even the largest projects. And for those countries where we do not yet have a subsidiary, we have founded Sputnik Engineering International AG to provide sales, service and customer advisory services appropriate to market conditions there too.



■ Coping with enormous challenges

Be it extreme weather conditions, structural difficulties or particularly ambitious yield targets, PV installation operators throughout the world rely on the efficiency, reliability and robustness of SolarMax inverters.



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1 | **Bergamo, Italy**

Bella in Bergamo: This 20-kilowatt PV installation became operational in Bergamo, Italy in January 2010. Thanks to its powerful central inverter from Sputnik Engineering AG, it provides 24,000 kilowatt hours of environment-friendly solar electricity a year.

2 | **La Réunion, France**

Defying the heat: SolarMax inverters are the core component of this 1.4-megawatt system in the middle of the Indian Ocean on La Réunion island, which belongs to France. They cope with the continually high ambient temperatures without a problem.

3 | **Disentis, Switzerland**

High performance in the harshest climate: SolarMax inverters in Disentis, Switzerland's skiing paradise, have to withstand sharp temperature fluctuations, intense sunlight, strong winds, long periods of frost and heavy snowfall.

4 | **Jettingen, Germany**

Deep in the heart of nature eight SolarMax inverters are in continuous operation in the Deubach-Ichenhausen solar park in Germany. Covered in costly wood panelling, the three megawatt stations blend perfectly with the landscape.

5 | **Jungfraujoch, Switzerland**

On January 11 in 2008, the subsidiary sol-E Suisse of the Swiss utility BKW FMB Energie AG put into operation the highest grid-connected PV installation in Europe, on the "Jungfraujoch" at 3500 meters above sea level.

■ Suitable for all types of PV installations

SolarMax inverters guarantee permanently high yields, regardless of the types of models or technologies used. They are suitable for a very wide range of structures, from tracking systems to facade installations.



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1 | Solar park Elsterheide, Hoyerswerda, Germany

With a total output of 20 MW, the solar park Elsterheide is the largest project implemented with SolarMax inverters. The open-space facility covers an area of more than 460,000 square metres. Distributed to 18 power stations, there are 54 SolarMax 330TS-SV series central inverters – each with a rated output power of 330 kW.

2 | Moers, Germany

Moers is the site of Germany's largest photovoltaic plant using thin film technology on a pitched roof. The cadmium-telluride modules are mounted on three different roof inclinations.

3 | Udine, Italy

In this installation in the Italian province of Udine, the modules are mounted on the facades, roof and canopies. The system produces high yields despite the very different inclinations and orientations of the modules.



2 |

4 | Albacete, Spain

A record: Relying on SolarMax inverters, Würth Solar has installed more than 40,000 modules with the latest CIS technology in Albacete.

5 | Rodenäs solar park, Germany

With a capacity of 2 megawatts Rodenäs solar park is the largest PV installation in northern Germany. The tracking system is located right on the coast.

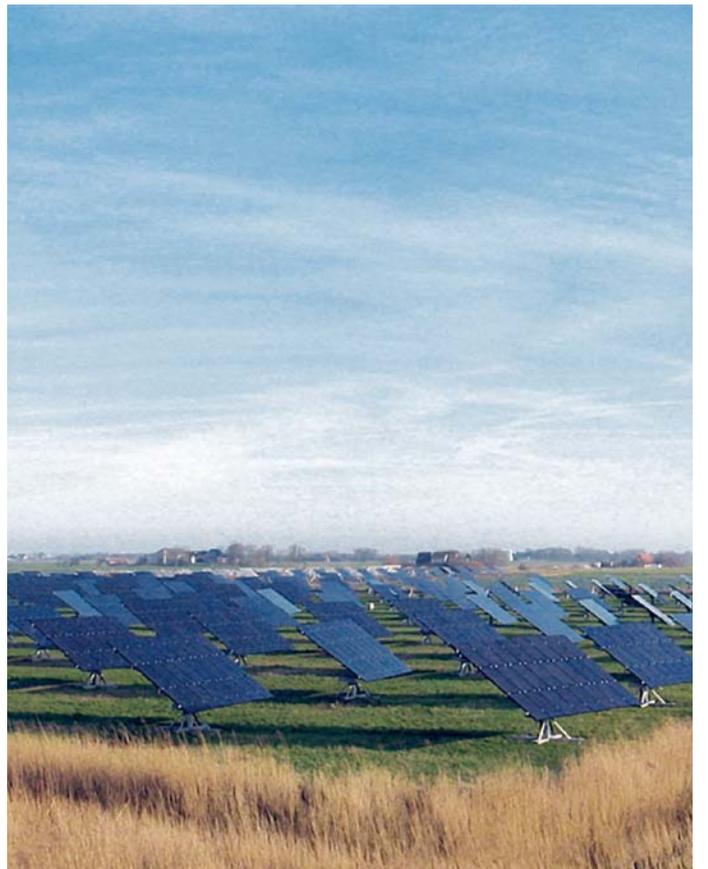


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■ In use all over the world

From private house, bunker and barn all the way to solar power station, from roof-mounted installations to open field systems, thanks to a large product portfolio, Sputnik Engineering has the optimum string and central inverter for each and every application area and for systems of all sizes.



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1 | Brno, Czech Republic

Solar power investment: High feed-in tariffs make PV installations in the Czech Republic extremely lucrative. Sputnik's partner Nobility Solar Projects used nine SolarMax 300C central inverters in this 3.2-megawatt open field system in Brno.

2 | Bielefeld, Germany

A perfect fit: This roof in Bielefeld is covered down to the last centimetre with solar modules. Two SolarMax string inverters convert electricity from the 8.4 kilowatt system into grid-compliant AC.



2 |

3 | Vic, Spanien

Solar electricity for a meat processing factory: Two SolarMax 80C central inverters convert the direct current from almost 1,200 polycrystalline solar modules into grid-compliant alternating current. A MaxControl system monitors the data of this 188 kW installation in Vic (Catalonia).

4 | Podgorje pri Slovenj Gradcu, Slovenia

From Javorje to Gornji Petrovci: Slovenian company Sonel uses only inverters from Sputnik Engineering AG in its solar power installations, including this 43.2-kilowatt installation in the village of Podgorje pri Slovenj Gradcu in northern Slovenia.

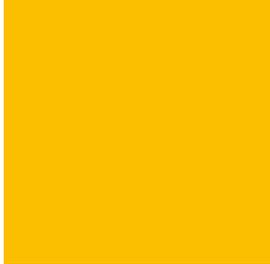
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