

Pilot Project on the A9: Sputnik's new inverters feed in idle power for the first time
Record-setting Project on the Volcanic Island: Spanish company installs the largest rooftop plant of the Canary Islands on Lanzarote
Less for the Large: Italy reduces subsidies for solar power plants
Growing Market on the Black Sea: Bulgaria creates attractive conditions for solar plant operators
From the Laboratory Bench to the Field and in the Barn: Sputnik tests its new inverters at customers' locations

SolarMax Globe

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From the Low-energy House to the Tracking System The northern Italian company **Sistemi Energie Rinnovabili** relies on SolarMax inverters for its projects



Pilot Project on the A9
Sputnik's new inverters feed in idle power for the first time

technology **04**



From the Laboratory Bench to the Field and in the Barn
Sputnik tests its new inverters at customers' locations

technology **06**



Record-setting Project on the Volcanic Island
Spanish company installs the largest roof-top plant of the Canary Islands on Lanzarote

solutions **09**



From the Low-energy House to the Tracking System
The northern Italian company Sistemi Energie Rinnovabili relies on SolarMax inverters for its projects

solutions **10**



Less for the Large
Italy reduces subsidies for solar power plants

market & trends **12**



Growing Market on the Black Sea
Bulgaria creates attractive conditions for solar plant operators

market & trends **13**

Further Topics

internal

Page 15: Sputnik presents its new products all over Europe

Sputnik creates new positions in Biel and Brussels

Germany defeats Argentina and loses to Spain. Paul the Octopus predicted the FIFA World Cup results correctly. With inverters it's not that simple.



Circuit topologies have to be simulated on the computer; they have to emulate the 230-volt grid with a four-quadrant amplifier. Using measurements from a climatic chamber, one can predict how devices react to heat waves and cold snaps.

Field tests under real conditions do not replace the simulations and laboratory tests. Therefore, Sputnik's developers check their prototypes at a large variety of ambient conditions in solar plants on location. While one cannot win the football pool this way, their results guarantee high yields, simple assembly and reliable operation. Read for yourself.

Inic Krampitz

Press Relations Officer of Sputnik Engineering AG



In March we presented our new central inverter series, the SolarMax TS, in the monastery in Bad Staffelstein for the first time. By the time of the Intersolar fair in June, we had already finished developing the three-phase string inverters of the SolarMax MT series. In our development laboratory in Biel, we put the new developments through the acid test.

Using field tests in Germany, Austria and Switzerland, we are currently ensuring that the devices work flawlessly under real conditions. In a pilot project in Bavaria, our new central inverters are feeding idle current into the public grid for the very first time. The freestanding system next to the A9 motorway has a power output of 1.7 megawatts.

Meanwhile, large plants with our inverters are operating all over Europe. For example, in March we commissioned the largest solar power plant in Bulgaria. On Lanzarote, our devices have been transforming the solar electricity from the largest roof-top plant of the Canary Islands into grid-compliant alternating current since April. And since June our products have been feeding their electricity into the public grid on the largest tracking solar plant of Lombardy. Read for yourself.

I wish you interesting and enjoyable reading.

Ch. von Bergen

Christoph von Bergen,
Managing Director of Sputnik Engineering AG



Pilot Project on the A9

Sputnik's New Inverters Feed in Idle Power for the First Time

The freestanding solar plant on the A9 motorway between Munich and Nuremberg, Germany, does not shut down when brief grid malfunctions occur. What is more, the pilot plant can also feed in idle power in normal operation since it was commissioned in June this year. In a few months, it will be able to support the grid during a voltage drop in the high-voltage grid.

For Sputnik's 1.7 MW pilot plant "Gelbelsee", the lower Bavarian company Solea AG installed five new SolarMax 330TS-SV central inverters for the first

time. Each inverter has a nominal power of 330 kilowatts. Two internet-based MaxWeb xp data loggers record all the measured data of the photovoltaic plant and its inverters during this field test. Sputnik's developers in Biel evaluate the data.

As with all inverters of the new SolarMax TS series, the SolarMax 330TS-SV inverters have been prepared to meet the current requirements of the new medium-voltage directives of the German Federal Association for Energy and Water (BDEW). The inverters are

able to feed-in idle power, to remain on the grid during grid malfunctions and thus to actively support the grid (please also see SolarMax Globe 1/2010).

"Since 1 July 2010, the BDEW's directive has stipulated that solar power plants feeding into the medium-voltage grid have to be able to support the grid dynamically in a limited way", explains Michel Ryser, assistant to the development leader at Sputnik Engineering AG in Biel. "The utilities companies provide a set value for idle power, which the inverters have to implement in the





shortest period of time.” For the Gelbelsee pilot plant, Sputnik’s developers are checking if that can work flawlessly.

Growing with Sputnik

For Solea AG, who built and now operates the Gelbelsee pilot project, this is the second field test with SolarMax inverters. Solea’s electrical designer Johann Schweiger expects the solar plant to have paid for itself after 11 years. “We have grown with Sputnik and have remained faithful to the brand”, he explains. “In our large projects we rely almost solely on SolarMax inverters.” Therefore, Solea’s medium-voltage station was also dimensioned for the voltage of the SolarMax inverters.

The station transforms the voltage of the inverter (280 volts) to 20,000 volts, which is directly fed into the medium-voltage grid. He did not, however, design his first plant with SolarMax inverters as a large-scale plant. “In



Grid support: The SolarMax inverters do not switch off when there are brief grid malfunctions. Here is a Solea employee at a DC fuse cabinet.

2004 I built a solar plant on my own roof. The four SolarMax inverters run flawlessly”, he says.



Recorded completely: When the plant was commissioned, Sputnik’s service technicians recorded all the data from the pilot plant.

New Requirements beginning in 2011

Since photovoltaic plants have to stay on the grid longer during grid fluctuations, voltage variations in the distribution grid can be reduced in the future. In

a second step which begins in 2011, the utilities companies want to stop large feed-in power from turning off in the medium-voltage grid, but also during voltage drips in the high and highest-voltage grids. This way they want to prevent the grid from collapsing.

“Beginning on 1 January 2011, the inverters have to support the grid completely dynamically. Then the devices have to be able to feed in a defined idle power into the medium-voltage grid not only in normal operation, but also during a short breakdown of the voltage in the high or highest-voltage grid”, explains Ryser.

From January 2011, all SolarMax inverters of the TS series will recognise automatically how much idle power they have to provide to maintain grid voltage during a grid malfunction. Within 20 milliseconds the inverters can feed in the desired short-circuit current. In extreme cases, the devices can give off 100 percent of the nominal power as idle power.

Plant Data: Gelbelsee Pilot Project

Power	1.73 MW
Modules	7,875 monocrystalline solar modules from Solon
Inverters	SolarMax 330TS-SV (5x)
Pitch and Direction	pitch 27°, south
Expected Annual Yield	approx. 1,050 kWh/kW
Commissioning	June 2010



From the Laboratory Bench to the Field and in the Barn

Sputnik tests its new inverters at customers' locations

Sputnik's engineers know no mercy with their devices. They put the inverters into the climatic chamber; they let vibrating plates shake them thoroughly; they place high voltages on the connections to see if a short circuit is present on the housing. On the type approval tests alone, the developers in Sputnik's laboratory in Biel work for two to three weeks. If the prototypes pass all of these tests, they have to prove they work flawlessly in freestanding installations, in attics and in barns. Only then do they climb up from a prototype to a production model.



Inverter test in Ostwestfalen-Lippe: Nova Solartechnik GmbH has installed prototypes of the new SolarMax inverters in Gütersloh.

This year, the Swiss engineers have been able to test two newly developed

inverter series. The five central inverters of the SolarMax TS series have power outputs between 50 and 330 kilowatts. They are able to remain on the grid during brief grid malfunctions and thus to actively support the grid. In a pilot project in Bavaria, the most powerful devices of this series are feeding idle current into the medium-voltage grid for the first time (please also see Page 4).

The new SolarMax MT series (MT stands for multitracking) complements Sputnik's product range in the power range between 10 and 15 kilowatts. With a new topology, the three-phased feed-in devices reach a European efficiency rating of up to 97.5 percent. Since the inverters house several MPP trackers, each solar generator field can constantly operate in its maximum power point – even on the most varying of roof surfaces, directions and pitches (please also see SolarMax Globe 2/2010).

Prototypes of the SolarMax MT series have been in operation for several weeks in numerous field tests from Ostwestfalen-Lippe, Germany to the Bernese Oberland, Switzerland. Sputnik's developers are testing the devices at



Maximum energy yields and minimum system costs: the new inverter series, SolarMax MT.

23 locations in Germany, Austria and Switzerland. Via the internet-based data logger MaxWeb xp, they can evaluate all the software and hardware data of the pre-production models.

Jörg Urbanski has his expectations fulfilled

Nova Solartechnik GmbH from Rietberg is one of Sputnik's testing customers. The company assembles solar power plants with power outputs ranging between 2 and 500 kilowatts on single



family homes and industry roofs. The managing director, Jörg Urbanski, has been convinced of Sputnik's products since 2006. "The SolarMax inverters are more reliable and fail less frequently than do devices of other manufacturers", says Urbanski. "And when there happens to be a problem, a replacement device has already arrived on the very next day."

Formerly the company, founded in 1991, only installed string inverters. This will change. "Sputnik's new inverters have more than fulfilled my expectations", says Urbanski, pleased. At the end of June he commissioned a test plant on the roof of a grocery store in the German city of Gütersloh with a SolarMax 100TS and a SolarMax 15MT. "The devices work flawlessly. Efficiency and yields are very good." Urbanski reckons that the 140-kilowatt plant will have paid for itself in less than ten years.

Mathias Mader is pleased about the high yields

Managing director of Actensys GmbH, Mathias Mader describes his experience with the new SolarMax 15MT like this: "The inverter is very handy and can be easily installed, something that saved us an enormous amount of time. Thanks to its three MPP trackers, we attain good yields, although overhead line towers block a part of the plant from the sun. Until now, we have been more than convinced of its performance."

Actensys installed the 25-kilowatt test plant in the Bavarian community of Waldstetten in June. In addition to the new SolarMax 15MT, the company used three SolarMax 3000 S inverters

for the roof-top system. Mader assumes that the plant will have paid for itself in ten years. "With the MT series Sputnik has created a milestone in product variety. The new series covers an important segment in the future plant planning", says Mader, who has trusted products from Sputnik Engineering AG since 2002.

As an independent engineering office, Actensys plans, builds and maintains photovoltaic power plants in the German region of Bayerisch-Schwaben. In the first half of this year alone, Mader and his 24 employees have realised four freestanding plants with a total power output of 12 megawatts as well as 150 roof plants.

energiebüro® ag plans and realizes award-winning solar power plants

The energiebüro® ag for solar power plants from Zurich also belongs to the first who are using the new inverters. In July of this year, the Zurich-based engineering company commissioned an agriculture solar plant in Bernbiet, Switzerland, in which two SolarMax 15MT inverters work. "The devices deliver convincing performance data and can be mounted easily", says Roland Frei, managing director of energiebüro ag. He has been developing, planning and realizing solar power plants for more than ten years and manages the business division of the

Plant data from field test, Nova Solartechnik GmbH, Gütersloh (photograph page 6)

Power	140.4 kW
Modules	Monocrystalline solar modules from SunOw
Inverters	SolarMax 100 TS, SolarMax 15MT, SolarMax 6000 S (2x)
Pitch and direction	Pitch 20°, south south-west
Expected annual yield	Approx. 850 kWh/kW
Commissioning	June 2010

Plant data from field test, Actensys GmbH, Waldstetten (small photograph page 8 right)

Power	25 kW
Modules	Crystalline solar modules from Jetion Europe
Inverters	SolarMax 15MT, SolarMax 3000S (3x)
Pitch and direction	Pitch 45°, south-west
Expected annual yield	approx. 900 kWh/kW
Commissioning	June 2010



company. “The inverters work – as far as we can evaluate this after this short amount of time – reliably and quietly. We are satisfied with the field tests.”

Founded in 1996 by Christian Meier, energiebüro AG has been installing inverters from Sputnik Engineering AG since 11 years and counts among the leading engineering companies in Switzerland. Its independent solar experts advice architects, planners, investors and end customers in all stages, from the idea to the design, the implementation and operation. For its solar power plants on several well-known Swiss buildings, the company has won the Swiss Solar Prize eight times. In 2006, the jury additionally awarded the European Solar Prize to energiebüro ag for the assembly of the world’s largest stadium-integrated solar plant at that time. It has a power output of 1.4 megawatts and was installed at the Stade de Suisse in Bern.



“Completely convinced” – Adrian Kottmann tests the new SolarMax MT series in Ueberstorf.

Adrian Kottmann has to wait no longer

Among Sputnik’s most faithful customers is the BE Netz AG from Lucerne. The company has been working with Sputnik Engineering AG since 1994. It has already field tested the SolarMax S series of the Swiss manufacturer. “We grew up with Sputnik”, says company boss Adrian Kottmann, who almost exclusively installs SolarMax inverters. Currently he is testing two devices from the SolarMax TS series with power outputs of 100 kilowatts each in the subalpine city of Gossau and in the Swiss Seeland.

Since May two SolarMax 15MT inverters have been producing alternating current in a 30-kilowatt plant of the BE Netz AG on a farm roof in Ueberstorf.



Good yields despite partial shadowing: Sputnik’s MT series works at the maximum power point of the solar generator even in difficult conditions, as does this 25-kilowatt test plant of Actensys GmbH in Waldstetten.

“We have waited for this series”, says Kottmann, pleased. “The three-phase inverters of the MT series have a high efficiency and close the gap optimally between 10 and 20 kilowatts. The new series has convinced us completely.”

Plant data from field test, energiebüro ag, Aeschi near Spiez (photograph page 7)

Power	26.46 kW
Modules	Polycrystalline solar modules from Sharp
Inverters	SolarMax 15MT (2x)
Pitch and direction	Pitch 23 and 45°, south-east
Expected annual yield	1,020 kWh/kW
Commissioning	July 2010

Plant data from field test, BE Netz AG, Ueberstorf (photograph page 8 above and small photograph page 8 left)

Power	30.87 kW
Modules	Polycrystalline solar modules from Kyocera
Inverters	SolarMax 15MT (2x), SolarMax 2000S
Pitch and direction	Pitch 28°, south-east
Expected annual yield	972 kWh/kW
Commissioning	May 2010



Record-breaking Project on the Volcanic Island

Spanish Company installs the largest roof-top plant of the Canary Islands on Lanzarote

The company JHROerden from Madrid has built the largest roof-top plant on the Canary Islands around one thousand kilometres from the Spanish mainland. The approximately 1,500 crystalline solar modules have a power output of a total of 335 kilowatts. JHROerden commissioned the system in Arrecife on Lanzarote in April. In Spain JHROerden is one of the first companies of the solar sector. In addition to building and selling photovoltaic plants, the team of 15 employees also sells electronic components.

For the inverters, the solar pioneer – who has been committed to the solar energy since 1978 – decided to use devices from Sputnik Engineering AG. The three SolarMax 100C central inverters have a power of 100 kilowatts each. “We have trusted the inverters from Sputnik Engineering AG since 2000”, says JHROerden’s marketing manager Cristina Delgado Lusson. “The SolarMax products convinced us because of their reliability, quality and high yields”.

For the roof-top plant on Lanzarote, Delgado expects an annual yield of just under 1,500 kilowatt hours per installed kilowatt. For every kilowatt hour produced, the operating company, which

consists of the solar companies Suntletco and Unosolar, receives 32 eurocents.

Spanish PV market has stabilised

“After the strong decline in 2009, we are seeing a stabilisation of the Spanish photovoltaic market this year. Beginning in the second half of 2011, we expect significant market growth, whose size depends upon the subsidies of the government and the Royal Decree”, says Delgado.

“We assume that the Spanish photovoltaic market will go ahead hitting annual caps in spite of all the hurdles”, adds Fernando Sánchez García, managing director of Sputnik Engineering Ibérica S. L.U. In 2006 Sputnik founded



Three SolarMax central inverters transform the current of the largest PV plant on the Canary islands into grid-compliant alternating current.

the Spanish subsidiary to sell and service its products as well as to consult its customers. In the shortest period of time, it has established itself on the Iberian market with its SolarMax products.

Plant data, Arrecife de Lanzarote

Power	334.8 kW
Modules	1,488 crystalline solar modules from Solarworld
Inverters	SolarMax 100C (3x)
Pitch and Direction	Pitch 15°, south
Expected Annual Yield	1,493 kWh/kW
Commissioning	April 2010
Executed by	www.jhroerden.com



From the Low Energy House to the Tracking System

The Northern Italian company Sistemi Energie Rinnovabili relies on SolarMax inverters for its projects

The three-storey building is made of steel-reinforced concrete; the outer jacket is 16 centimetres thick. Floor heating cools and heats the 22 flats whose waste heat is recovered by a heat exchanger. Environmentally friendly energy is produced via a geothermal and a solar power plant.



First rate: Lombardy has certified the multi-family house in Bergamo with the energy standard A+ on account of its low energy consumption.

The project began in 2004. Since the spring of this year, inhabitants have been living in the new construction in Brembate di Sopra in the Northern Ital-

ian province of Bergamo. "The installation shows impressively how we can reduce the energy consumption of a building by combining different technologies. This is a further step in the battle against climate change", says Roberto Colombo, managing director of Sputnik's Italian subsidiary Sputnik Engineering Italia S.r.l., whose customer Sistemi Energie Rinnovabili S.r.l. (SER) built the photovoltaic plant.

PV system powers Minergie house

The block of flats in Bergamo is the first residential building in Italy with the Swiss quality label "Minergie". It char-

acterises buildings that are inexpensive, comfortable, energy-efficient and healthy at the same time. In addition, the construction companies must largely refrain from using fossil fuels. The Lombardy region has certified the building with the energy standard A+ due to its low energy demands of fewer than 14 kilowatt hours per square metre.

On the flat roof of the multiple family house, SER installed the PV plant with a power of 20 kilowatts. A SolarMax 20S inverter transforms the electricity into grid-compliant alternating current. "We trust Sputnik because their products are reliable and their service is excellent", says SER boss Maurizio Barnabò.

Plant Data, A+ multiple family house

Power	20 kW
Modules	crystalline solar modules from Aleo Solar
Inverter	SolarMax 20S
Expected annual yield	approx. 1,200 kWh/kW
Commissioning	January 2010



Moving almost one megawatt towards the sun

Thus, for example, the largest tracking system in Lombardy also works with four SolarMax central inverters. The plant in Spirano (Bergamo) has a total power of 860 kilowatts on a surface area of 43,000 square meters. On two axes, 92 supporting frames constantly and optimally direct their polycrystalline solar modules toward the sun. Thanks to this system, the annual energy yield increases to around 1.3 million kilowatt hours, which is enough for the needs of about 400 families. In addition, the system saves around 690 tonnes of carbon dioxide annually.



The largest tracking system in Lombardy: 92 racks direct the solar modules toward the sun.

The ceremonial inauguration of the solar park took place this June. Beginning in September, SER will offer guided tours through the solar plant to students. This way, the company intends to strengthen the public awareness for renewable energies.

SER does not only build plants that generate solar electricity, solar heat and

wind power. Founded in 2001 the company from Pognano also designs and develops assembly systems. On its own development – named “Circle in the Wheat” – the solar modules follow the position of the sun by rotating on a rail. The circular system can be installed on a roof and on the ground.

SER commissioned the first plant with its proprietary rotating development in Bergamo this January. The monocrystalline solar modules on the roof with a glass façade have a total power of 17.7 kilowatts on a surface area of around 300 square meters. A SolarMax 20S inverter transforms the electricity into grid-compliant alternating current. SER expects the plant to have an annual yield of 26,510 kilowatt hours. Two further systems of this type are currently being built.



“Due to the reliable products and the excellent service”, SER boss Maurizio Barnabò uses inverters from Sputnik Engineering. For his first plant with a rotating mounting system, he installed a SolarMax 20 S.

Plant Data, tracking system in Spirano

Power	860.22 kW
Modules	polycrystalline solar modules from Aleo Solar on 92 trackers
Inverters	SolarMax 300C (2x), SolarMax 100C, SolarMax 80C
Expected annual yield	approx. 1,500 kWh/kW
Commissioning	June 2010

Plant Data, “Circle in the Wheat”

Power	17.72 kW
Modules	monocrystalline solar modules from Aleo Solar, tracking system with two axes on a rotating rail
Inverter	SolarMax 20S
Expected annual yield	1,496 kWh/kW
Commissioning	January 2010

Less for the Large

Italy Reduces Subsidies for Solar Power Plants



Sputnik Italy is expanding in spite of cuts – here are the company headquarters in Giussano near Milan.

As the managing director of Sputnik Engineering Italia S.r.l., Roberto Colombo was involved in setting up the Italian subsidiary of the Swiss inverter manufacturer from the very beginning. And successfully at that: The turnover has almost doubled every year. The number of employees has grown as well, especially in the areas of application support, customer care and on-site repair services. The application engineers train plant designers and installers all over the country. "Since our start in 2007, we have grown into a well structured company, which can optimally provide the Italian photo-

voltaic market with SolarMax products as well as technical and consulting services", explains Colombo.

He and his employees have around one thousand square metres of space, in office and training rooms and the warehouse, at their disposal in Giussano near Milan. Last year they founded the SolarMax Training Center here. The training programme consists of 11 modules, which Sputnik's engineers can adapt individually to the most varying of customer needs (see also SolarMax Globe 2/2010). "All of our courses are free-of-charge. As needed we organise training seminars on the customers' premises", explains Colombo. He is convinced that his training seminars will remain in demand in spite of the planned cuts in the solar electricity remuneration.

The government introduces new remuneration categories

In the coming year, the government will sink the feed-in tariffs for grid-connected solar power plants by up to 27.5 percent. Hard hit in particular by these changes are large solar parks. But Italy will also soon pay significantly less for large roof-top plants.

Beginning in 2011, the Italian feed-in law "Conto Energia" will no longer divide solar power plants in three, but rather in six different power ratings (please see the table). In the coming

year the government will introduce four tariff categories for power sizes from 20 kilowatts upwards. The division into completely, partially and non-integrated solar plants will cease to apply. The third "Conto Energia" only distinguishes if the systems are installed on buildings or on free surfaces.

Italy caps additional photovoltaic construction

The government will reduce the remuneration rates in three steps: on 1 January, 1 May and 1 September 2011. In both of the following years, it will reduce the solar funding again by six percent each year and also cap the expansion of photovoltaics to three gigawatts by 2013. If the cap is reached before the end of 2013, the government will still grant the actual tariff to all PV systems that are connected to the grid within the following 14 months. In a press release from 9 July, the Italian ministry of economics justified the cuts on account of the lower module and system prices.

Sputnik's Italian boss remains optimistic. He thinks the tariff is still attractive: "The new Conto Energia significantly cuts the tariffs. However, the reductions for small residential installations and for commercial/industrial PV roofs are acceptable. Besides the great importance of PV in the battle against global warming, it continues to be a very good investment, thanks to the high solar irradiation at our latitudes. Italy will remain a very important market for Sputnik Engineering, even if the construction of large-scale plants will decline a little in the coming year", explains Colombo.

Planned Feed-in Tariff for Solar Power Plants in Italy beginning in 2011

Power	Tariff period 1.1. until 30.4.2011		Tariff period 1.5. until 31.8.2011		Tariff period 1.9. until 31.12.2011	
	Building	Free-standing	Building	Free-standing	Building	Free-standing
kW	€/kWh	€/kWh	€/kWh	€/kWh	€/kWh	€/kWh
1-3 kW	0,402	0,362	0,391	0,347	0,380	0,333
3-20 kW	0,377	0,339	0,360	0,322	0,342	0,304
20-200 kW	0,358	0,321	0,341	0,309	0,323	0,285
200-1000 kW	0,355	0,314	0,335	0,303	0,314	0,266
1000-5000 kW	0,351	0,313	0,327	0,289	0,302	0,264
> 5000 kW	0,333	0,297	0,311	0,275	0,287	0,251
Duration	20 years					
Cap (by 2013)	3 gigawatts (+14 months if the cap is reached before 31.12.2013)					

Status: July 2010



Growing Market on the Black Sea

Bulgaria creates attractive conditions for solar plant operators

In spite of the many hours of sun, photovoltaics has hardly played much of a role in Bulgaria. The energy sector of the country, populated with 7.6 million people, is primarily based on Russian imports, brown coal and nuclear power. This could change soon. With its entry into the European Union in 2007, the country committed itself to increasing its share of renewable energy sources for power generation to 16 percent by 2020.

Back in 2006, Bulgaria already introduced a remuneration for solar electricity and increased the length of remuneration from 12 to 25 years at the end of 2008. The operators do not, however, currently have a guarantee for the rate of the tariff. Instead, the Bulgarian State Energy and Water Regulatory Commission determines the current tariffs anew every year by 31 March. They are then valid for new solar power plants as well as for those installed in the previous years. Eighty percent of the tariff is made up of the average price for electricity from the previous year and twenty from a variable additional fee, which has to amount to at least 95 percent of the value from the previous year. Therefore, the tariffs do not sink automatically from year to year. When electricity prices increase, the tariffs do as well.¹⁾

The tariff system distinguishes between two different plant sizes: less than and more than five kilowatts. Large plants are particularly attractive for investors, since they receive little less for their electricity than the small private plants. The tariff system promoted the construction of large solar power plants last year: the market quadrupled. By the end of 2009, solar power plants with a total power of 5.7 megawatts had been installed in Bulgaria.

The largest solar plant in Bulgaria runs on SolarMax inverters

As its first customer in Bulgaria, Sputnik won over the company Solarpro, the largest module manufacturer in the country. Founded in Sofia in 2007, the company makes amorphous silicon modules with an annual capacity of 200 megawatts. In 2009 Solarpro began building photovoltaic plants, installing the systems in Bulgaria and its neighboring countries.

“The technical specifications of SolarMax inverters fit very well to our modules”, says Solarpro managing director Nikolay Berov. His company commissioned the most powerful solar power

plant in the country in March this year. The 2.4-megawatt system in Yankovo in eastern Bulgaria works with seven SolarMax 300C central inverters. Berov expects the plant will have paid for itself in nine to ten years.



Bulgarian investment: Solar power plants are especially attractive. Here is a 2-megawatt system in western Bulgaria.

Rumen Christov is also a SolarMax fan. The boss of the company Sunservice Ltd. from Sofia, founded in 2007, currently employs 35 workers with the planning and construction of solar power plants. The company places its emphasis on large plants with central inverters. “Sputnik has a lot of experience in this sector”, says Christov. In



addition, the SolarMax inverters convinced him due to their good value of the money, their reliability and high quality.

Sunservice is putting its first SolarMax solar plant into operation this September in Ihtiman in western Bulgaria. The system has a power of two megawatts and works with six SolarMax 300C-SV inverters. For each kilowatt hour produced, the operator receives the remuneration, valid since April, of 0.728 Bulgarian leva (37.2 eurocents).

Government plans new feed-in law

“The plant is still remunerated according to the previous legislation”, explains Christov, who supports changes in the feed-in law as board member of the Bulgarian Photovoltaic Association (BPVA). In July the BPVA asked the Bulgarian government in writing not to fix the feed-in tariff anew every year, but rather to retain the current tariffs for 15 years. For years 16 to 25 after commissioning, the BPVA suggests a degradation of two percent annually.

If the government accepts the draft, investors will soon be able to plan better. Christov reckons that the new law will be passed in September. “Currently there are fewer than ten megawatts of photovoltaics installed in Bulgaria”, says Christov, who anticipates new installations between 10 and 50 megawatts this year. “By 2015 plants with a total power of 500 to 1,000 megawatts will produce solar electricity. By 2020 this value will increase to 2.5 to 4 gigawatts.”

Of these, numerous large-scale plants will operate on SolarMax central inverters. “Bulgaria is a very important growing market for us”, says Sputnik’s head of sales and marketing Daniel Freudiger. “We have already formed some excellent partnerships with Bul-

garian companies and will continue to expand our network there.”

¹⁾ *Status report Intelligent Energy Europe: “Status of Photovoltaics 2009 in the European Union New Member States”*

Plant Data, Yankovo

Power	2.4 MW
Modules	Amorphous silicon modules from Solarpro
Inverters	SolarMax 300C (7x)
Pitch and direction	Pitch 32°, south
Expected annual yield	1,250 kWh/kW
Commissioning	March 2010

Plant Data, Ihtiman

Power	2 MW
Modules	Amorphous silicon modules from Polar PV
Inverters	SolarMax 330C-SV (6x)
Pitch and direction	Pitch 32°, south
Expected annual yield	1,250 kWh/kW
Commissioning	September 2010

Feed-in Tariff for Solar Power Plants in Bulgaria beginning on 1 April 2010

Power	Remuneration
< 5 kW	40.5 Eurocents / kWh
> 5 kW to 10 MW	37.2 Eurocents / kWh
Duration	25 years

From Valencia to Verona, from Madrid to Montpellier

Sputnik presents its new products all over Europe

In the monastery in Bad Staffelstein, Sputnik Engineering presented its new central inverter series, SolarMax TS, with nominal powers of 50, 80 and 100 kilowatts for the first time in March. Two months later, Sputnik presented the new developments to the public at the Solarexpo in Verona and at the Genera fair in Madrid. By the time the Intersolar fair took place in June, the Swiss manu-

facturer had already finished developing two further devices of the new series with nominal powers of 300 and 330 kilowatts.

In addition to the new central inverters, Sputnik showed the new SolarMax MT series in Munich and subsequently at the Salon des Energies Renouvelables in Paris. The three-phase string invert-

ers unify maximum energy yield with minimum system costs. Numerous field tests of the new products are already running (please see Page 6). By the end of the year, the new SolarMax products can be seen at the European Photovoltaic Solar Energy Conference in Valencia, at the PV Tech in Rome and the Energaia fair in Montpellier. We look forward to seeing you there!

Trade Fair Calendar of Sputnik Engineering AG for the fourth quarter of 2010

Event	Dates	Location	Sputnik Stand	Internet
25th European Photovoltaic Solar Energy Conference & Exhibition	6-9 September 2010	Valencia, Spain	Level 3, Hall 2, Stand C13	www.photovoltaic-conference.com
PV Rome Mediterranean 2010	8-10 September 2010	Rome, Italy	Hall 5, Stand C22/D21	www.pvtech.it
Energaia	8-11 December 2010	Montpellier, France	Hall 12, Stand E300	www.energaia-expo.com

Sputnik creates new positions in Biel and Brussels



Leader of Marketing Communication in Biel:
Sandra Gysi.

Sandra Gysi is Sputnik's new leader of Marketing Communication in Biel. The 41-year-old Swiss woman brings along almost twenty years of professional experience from the areas of marketing and communication in national and international companies. What particularly attracted her to this newly created position was the future-oriented product in an exciting market and the



Key Account Manager in Brussels:
Paul Van Der Goten.

committed colleagues. "I very much like Sputnik's fresh, constructive working atmosphere and the will to make a difference", says Gysi, who speaks English, French and Italian fluently, in addition to her native language, (Swiss) German.

While Gysi has been working at the Swiss headquarters since May, Paul

Van Der Goten began working at the same time in Sputnik's new branch office in Brussels. From here, the 42-year-old key account manager takes care of Sputnik's clients in the Benelux countries. Currently his emphasis lies above all, due to the attractive conditions, on his homeland, Belgium. Before he began at Sputnik, the industrial electrician was responsible for the Flemish energy market as an account manager at two electronics companies.

"I really like Sputnik's well defined and long-term manner of opening a market", says Van Der Goten. He appreciates the open company culture and the high quality products of his new employer. "I will push forward the sales of SolarMax products in this strongly growing market. In addition I will search for new partners in Belgium, the Netherlands and Luxembourg, who sell and install complete systems with our inverters."

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