SMA Solar Technology AG Press Release

SMA once again won innovation award for best solar product

Bad Staffelstein, Niestetal, March 4, 2010 - On the occasion of the 25th Photovoltaics Solar Energy Symposium in Bad Staffelstein, SMA Solar Technology was once again awarded the innovation award for the most innovative solar product. The five new features the SMA Sunny Tripower inverter has to offer convinced the jury and prove once more SMA's technology leadership.

The new three-phase Multi-String inverter features Optiflex which is a completely new concept for highly flexible plant configuration. On the other hand is has the unique multi security concept Optiprotect: it consists of a string failure detection, an electronic string fuse as well as a lightning protection function that can be integrated and thus guarantees a maximum operating safety of the PV-plant. Furthermore, the new DC-plug system SUNCLIX as fifth innovation significantly simplifies the inverter installation. Already in 2007 at the 22nd Photovoltaics Solar Energy Symposium, SMA received the award for the Sunny Backup-System with which grid-tied PV-plants can be used for energy supply in case of a grid failure while avoiding high installation costs.

Five unique innovations in one PV-inverter from SMA

Additionally to the three-phase grid feeding and an efficiency of 98 percent, SMA offers five unique technological innovations in the Sunny Tripower. They make the inverter even more user-friendly, safe and reduce system costs.

Optiflex is a completely new concept for flexibly configuring highly efficient PV plants. SMA Senior Vice President Dr. Bernd Engel who received the innovation award personally in Bad Staffelstein commented about the background of development: "One can observe that the design of a PV-system is increasingly defined by a fixed number of modules. A system defined by the number of modules is often impossible to establish with conventional concepts when only one single inverter is supposed to be used. The PV-system designer usually had to implement an additional inverter into the design for the 'remaining' modules which resulted in higher installation costs and a lower system efficiency." Optiflex solves this problem completely, Engel says. In addition, the generator voltage can be ideally tailored to the inverter's efficiency curve. Since even with an exactly specified number of modules, Optiflex still offers variation possibilities in terms of the string lengths in such way that the inverter operates at its maximum efficiency for most of the time.

The name Optiflex stands for the combination of an extremely wide input voltage range with an asymmetrically dimensioned Multi-String input. The "main entrance" is capable of processing the entire nominal power of the inverter. The "side entrance", however, is designed for only one module string. This input is extremely flexible in terms of length due to the wide input voltage range. "Optiflex offers considerable advantages both for the installer and for the plant operator. The development stands for a successful implementation of the SMA strategy

to increase the inverter's efficiency and capacity, to simplify the configuration and at the same time to reduce the system costs - and all this through technological innovations", says Roland Grebe, SMA Chief Technology Officer. Due to two independent MPP-trackers, the device is moreover optimally suitable for partially shaded generators.

With Optiprotect, the Sunny Tripower is the first inverter to be equipped with a multi-level security concept: three innovative safety features monitor and secure the PV-plant and the energy yields.
In contrast to conventional thermal fuses, the electronic string fuse of the Sunny Tripower pursues a fully innovative approach: every string input has a current sensor that monitors the current itself as well as the direction of the current. In case a reverse current is detected, the system short-circuits the generator. By doing so, any reverse currents are reliably avoided. Arcing is then physically impossible and a maximum operating safety therefore given. Pre-selection of system specific fuses is not required and the service life drastically increases in comparison with conventional thermal fuses. Further advantages: there are no energy losses and there are no additional costs.

Furthermore, the Sunny Tripower is the first device that supports the direct integration of type II overvoltage protection units right into the inverter enclosure. This results in the fact that the inverter can easily be integrated into lightning protection concepts, as is required for public buildings and also in can be demanded by insurances companies. The integration into the inverter enclosure also simplifies the installation and avoids additional assembly costs - the corresponding protection units are simply inserted into the provided slots.

The electronic string current monitoring from SMA is a convincing intelligent concept: "Until today module-string breakdowns could only be detected with decentralized monitoring units - this is especially cost intensive for thin-film applications with many strings connected in parallel. String breakdowns that are not detected as soon as possible result in significant yield losses. The intelligent electronic string current monitoring from SMA solves this problem: after only two weeks of normal operation the system can reliably detect if one of six strings is defective or not. The operator therefore actually has a monitoring of up to 36 sub-strings integrated directly in the inverter without the necessity of time consuming and difficult configuration", Engel explains.

When talking about "easy installation", the fifth innovation comes into effect: The Sunny Tripower is the first inverter to be equipped with the DC-plug system SUNCLIX from Phoenix Contact. It ensures that quick and easy installation is possible without the need for numerous adaptors, connectors and special tools. Attaching the connector to the cable is done in three simple steps and will usually take no longer than 15 seconds. The SUNCLIX field connectors are included in the delivery of every Sunny Tripower free of charge.

The Sunny Tripower is the first device in this power range that completely complies with the specifications defined in the BDEW medium-voltage directive coming into force from mid 2010. It will be available in the power levels 10, 12, 15 and 17 kVA.

You will find a complete Press Kit available for download at: http://www.sma.de/de/news-infos/aktuelle-nachrichten.html

Press contact:
SMA Solar Technology AG
Anja Jasper
Sonnenallee 1
34266 Niestetal
Germany
Tel. +49 561 9522-2805
Fax +49 561 9522- 4567
E-Mail: Anja.Jasper@SMA.de