Photovoltaic Solar Power System

# ST Electronics plugs into solar energy

There is a new attraction on the rooftop of ST Electronics' headquarters at Ang Mo Kio. It is a new eight panel 10KWp Photovoltaic Solar Power System.

The system was officially commissioned on 3 August 2009 by Mr Seah Moon Ming, then President of ST Electronics, and witnessed by invited guests.


ST Electronics is building upon its competency in harnessing solar energy. The Solar Power System will be used as a test bed for engineering research and training. It will also serve as a pilot project to explore clean and more efficient methods of energy saving and usage. ST Electronics showcases its rooftop panels to prospective customers so that they can appreciate the company's progress in this area and its quest to help them develop and utilise solar energy more efficiently. Customers are able to witness how the electricity generated from the system is used to supplement some of the building's existing power supply.

The Solar Power System consists of an array of solar photovoltaic modules, a set of inverters and a series of electrical distribution apparatus such as distribution boards, switches and cables.

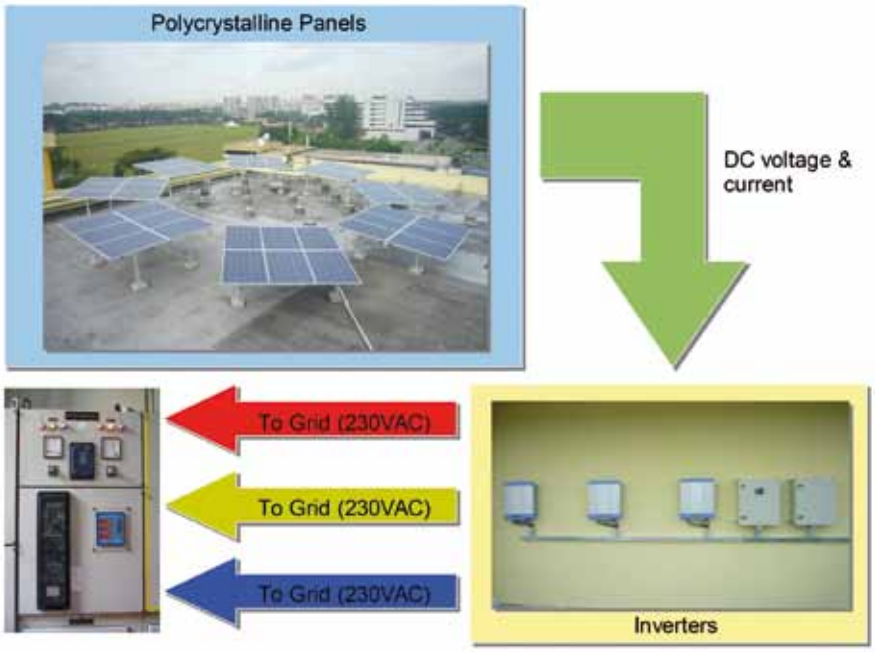
With the use of renewable solar energy, ST Electronics aims to reduce its carbon footprint on the Earth and achieve about 15 mega tonnes of Carbon Credits each year

The Solar Power System will harness the sun's irradiation, converting it into electricity in the form of Direct Current (DC). This DC is then fed into a set of inverters and turned into Alternating Current (AC), which is in turn connected to the power grid to supplement the existing power supply.

ST Electronics' Solar modules, 48 pieces in all, are arranged in a circle. These modules are further grouped into three PV arrays of 16 modules each, forming the three phases of the grid. This is a grid-connected three-phase system where the electricity generated from the solar power system is fed directly to the grid. Each module is rated 225Wp, ie each phase has a rated capacity of about 3.6KWp. The entire system has a rated capacity of about 10.8KWp.

The system is expected to generate approximately 18 MWH of electricity each year. With the use of renewable solar energy, ST Electronics aims to reduce its carbon footprint on the Earth and achieve about 15 mega tonnes of Carbon Credits each year. In addition, it is estimated that the company will also enjoy an energy cost saving of about $5,000 each year resulting in an estimated pay-back time of between 18 to 22 years using this system.

The system is tilted five degrees from ground level. This ensures that it enjoys the best facing to the Sun, and optimises the harnessing of the Sun's energy. This incline also ensures that rain does not collect on its surface but helps wash away dust particles which may accumulate over time.




The Solar Power System converts the sun's energy into electricity, feeding directly into the grid

The Solar Power System is designed to fit onto a light-weight roof-mounted platform and does not require the drilling of any holes onto the roof. This avoids damaging the water proofing of the rooftop.

The photovoltaic modules deployed in the installation are poly-crystalline silicon. Silicon poly-crystalline has been proven to be the most efficient photovoltaic available in the market. The modules used in this system have an efficiency of 12.2 percent with a manufacturer's warranty of up to 25 years. The modules are IEC and UL certified.

ST Electronics is the exclusive distributor of the solar PV modules in Singapore and the authorised re-seller for countries in the Asia Pacific Region.

The installation of the Solar Power System has given ST Electronics the opportunity to gain valuable experience in fine-tuning its expertise. The company is now better equipped in system designing and in solving some of the most intriguing challenges presented in putting up Solar Power Systems for the many different types of roofs across Singapore.

This has placed ST Electronics in a good position to share its expertise in the field of solar energy renewal in Singapore and across the Asia Pacific region. The company has a number of test bed projects lined up which include inverters, solar concentrators and BIPV.

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