Sanyo announces world's most efficient solar module

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(PhysOrg.com) -- Sanyo has announced its development of the world's most energy efficient solar module, the HIT-N230. The module was unveiled at a press conference run by Sanyo Electric's Solar Division.

Sanyo is a major manufacturer of solar panels, with three factories in Japan, one in Hungary serving Europe, and a fifth in Mexico that serves the US market. The N series of modules are produced in Japan and consist of solar cells of the Hetero-junction with Intrinsic Thin-layer (HIT) type.

HIT solar cells contain a single thin crystalline wafer of silicon

surrounded by ultra-thin amorphous layers of silicon. They are characterized by high efficiency at high temperatures, and increased output power even during high summertime temperatures. The high conversion efficiency of HIT cells means more capacity can be installed compared to conventional crystalline silicon solar cells.

The new N230 solar cell module is claimed to have an energy conversion efficiency of 20.7 percent, which makes it the most efficient solar module produced so far. The unprecedented efficiency was achieved by increasing the number of solar cell tabs from two to three and making each tab thinner. They also applied AG coated glass to the cells, and this reduces the amount of scattering and reflection of light. The increase in energy conversion efficiency could make the solar modules useful in areas with less than ideal amounts of sunshine.

Sanyo is already one of the leading manufacturers of solar cells and modules, and the company is currently expanding its solar cell module production at Kaizuka City and Ohtsu City in Japan in response to increased demand. In total Sanyo plans to nearly double its HIT solar cell production from the current level of 340 MW to 600 MW by March next year.

National and local installation subsidies in Japan have seen the local market expand rapidly, and this has also been helped by the national government's new program for purchasing surplus electricity generated by solar installations.

The 230W model N230 and 225W N225 will both be officially launched in Japan in autumn this year and in Europe in 2011.