26-Nov-2013 – Fraunhofer ISE: DEGER MLD* technology provides for higher yields, particularly with diffuse light and less irradiation

One thing is clear – all photovoltaic systems are able to obtain good yields at locations with high solar radiation all year round. However, the advantage that MLD technology from DEGER has over astronomically tracked systems can even be seen at such locations, i.e. in the early morning hours and in the evening, when the various positions of the sun are lower than around midday.

The positive effect of DEGER technology becomes even clearer at locations with less than ideal conditions such as, for instance, in Central or Northern Europe. Naturally the middle to low positions of the sun often reduce the yields of photovoltaic systems. In addition, depending on the varying amounts of overcast, there is the fact that diffuse lighting conditions are also comparatively more frequent in such regions than in others.

From March 2011 to February 2013 the solar experts at Fraunhofer Institute for Solar Energy Systems (ISE) compared four different photovoltaic systems at the DEGER solar park in Horb-Rexingen: fixed module surfaces, a single-axis tracked system with MLD technology from DEGER, a dual axis astronomically tracked system and a dual axis system operated with MLD tracking. All four systems were equipped with the same type and number of modules. Within the scope of quality monitoring Fraunhofer ISE determined their yield and power consumption in particular.

Two different methods of analysis were used: the standardization procedure with which all of the values affecting performance – such as cable length, actual module output, inverter efficiency and the like – are taken into consideration, and the standard method where the yield is derived directly from the measurement data after cable losses are taken into mathematical consideration without further corrective calculations.

Yield Data from March 2011 to February 2013

The following table shows the yield values of the four systems compared and measured by Fraunhofer ISE over a period of 12 and/or 24 months – based on the standard method on the one hand, and in accordance with the standardization method on the other. In addition, the measured power consumption required for movement of the solar modules of the three tracked systems is also documented.

Yield / Standard method for the period of January to December 2012

System	**fixed**	**Single-axis MLD**	**Dual axis Astro**	**Dual axis MLD***
AC yield 2012 [kWh]	9191	11774	12647	13132
Increase [%]	0.0%	28.1%	37.6%	42.9%

Yield / Standardization method for the period of March 2011 to February 2013

AC yield/year [kWh]	9198	11436	12116	12614
Increase [%]	0%	24.3%	31.7%	37.1%

Power consumption measured in the period from March 2011 to February 2013

Consumption/year[kWh]	80	273	104
in % of annual yield	0.7%	2.1%	0.8%

*MLD = Maximum Light Detection

Note to the editor:
Picture material is available in our download area. Of course, this material is also available on request from Mr. Grab, phone: +49 (0) 7127-5707-10, E-mail: herbert.grab@digitmedia-online.de.

About DEGER (www.DEGER.biz):

DEGER is the leading manufacturer with the globally largest product portfolio for single and dual axis solar tracking systems. Its market position is based on the unique, patented “Maximum Light Detection” - or MLD technology, developed by Artur Deger. It provides the possibility of increasing the yield of solar power plants by using an “intelligent” control. The MLD-sensor thereby always aligns the solar modules with the energetically most potent point in the sky. This way MLD-guided solar systems achieve on average a 45 percent higher yield than fixed systems – in peaks this value is even considerably higher. With more than 50,000 systems installed in 51 countries, DEGER is world market and technology leader. The enterprise offers all solutions of relevance for the product – from development and planning to production and sales right up to maintenance and repair.

Nearly 400 employees currently work for DEGER at its headquarters in Horb, in its branch offices and at suppliers. The company was founded in 1999 and in 2001 was awarded with the Inventor Prize of the federal State of Baden-Württemberg for the MLD-sensor. In 2005 DEGER opened its first branch office in Spain, in 2009 branch offices opened in the USA and in Greece, in summer 2011 production started in Australia. DEGER produces in Germany, Australia, Canada and in the USA. Business is managed by Artur Deger.

You can’t always rely on the weather. But you can rely on a tracking system from DEGER.

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