

Fraunhofer ISE – certified herewith !

Case study involving a comparative measurements at the solarpark Rexingen

42.9 % Gain

Evaluation according to standard method

37,1 % Gain

Evaluation according to the normalization method

Comparative measurements at the Solarpark Rexingen

System 1

Static installation
30° South facing



System 2

Single axis, DEGER TOPtraker
MLD- Control



System 3

Dual axis,
Astronomical Control



System 4

Dual axis, DEGERtracker
MLD- Control



Installation Site	:	48°26'50" North, 8°39'48" East
Elevation	:	569 meter
Irradiation at Site in Rexingen	:	1010 kWh/kWp (PVGIS)
Modules	:	36 Sanyo HIP-215NKHE1 modules per unit / system
Nominal power in kWp:		7,74
PV Inverter	:	One SMA SMC 8000TL per unit/ system
Nominal power in kW :		8.0

The difference between the four units / systems is the way of tracking.

The Fraunhofer ISE results have been determined by normalization method and standard method.

The normalization method, in which all performance variables such as cable length, actual module output, inverter efficiency and other similar variables are taken into account.

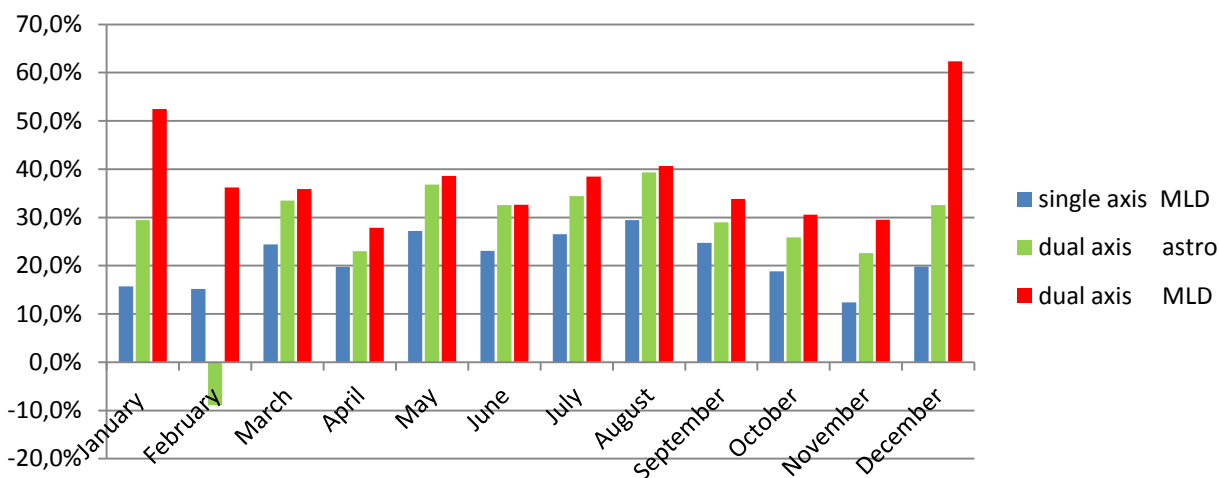
The standard method, in which the yield takes into account a theoretical consideration of the cable losses resulting directly from the measured data without further correction calculations.

Results for the year 2012

System	1	2	3	4
Technology	static	Single axis MLD	Dual axis astronomical	Dual axis MLD
AC yield (kWh)	9191	11774	12647	13132
Own consumption per year (kWh)		40	137	52
Additional yield compared to static system		28.1%	37.6%	42.9%

Availability of measured data for the year 2012: 100%

2012 Energy production per month



	January	February	March	April	May	June	July	August	September	October	November	December
single axis MLD	15,7%	15,2%	24,4%	19,8%	27,2%	23,1%	26,5%	29,5%	24,7%	18,8%	12,4%	19,8%
dual axis astro	29,4%	-8,9%	33,5%	23,0%	36,8%	32,5%	34,4%	39,4%	29,0%	25,9%	22,6%	32,5%
dual axis MLD	52,5%	36,2%	35,9%	27,8%	38,6%	32,6%	38,5%	40,6%	33,8%	30,6%	29,5%	62,3%

Important for own consumption of produced energy!

Tracking systems with DEGER-MLD technology have in the winter months, the highest energy gains. Please review chart 2012 Energy production per month

Conclusion of the Fraunhofer ISE

- DEGERtracker are generating a 42.9% higher yield as static systems.
- DEGERtracker are generating a 5.3% higher yield as astronomical controlled systems.
- DEGERtracker have the lowest own consumption compared to the measured tracking systems in this study.
- If we take the own consumption into account, the DEGERtracker will even have a 6% higher yield as the astronomical system.
- The generated additional yield due to the DEGER-MLD-Tracker is visible both during low level diffuse light conditions and high level diffuse light conditions.

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