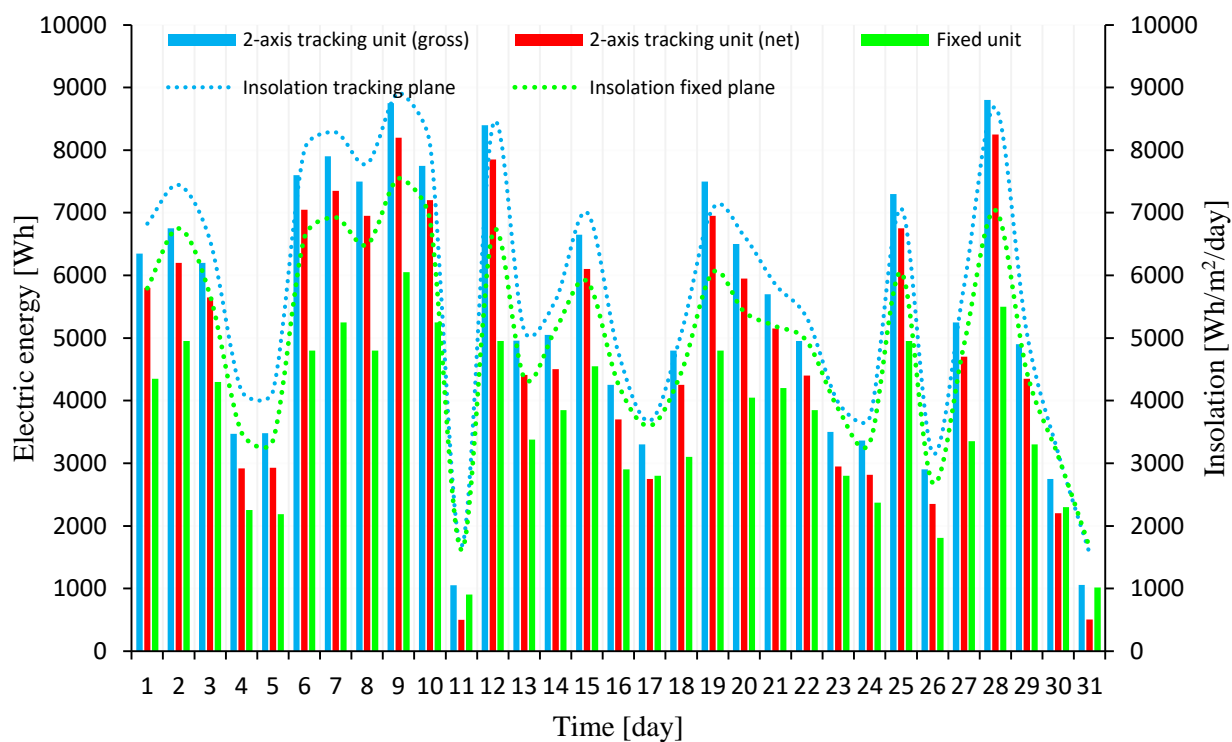


**Figure S1.** Variability of the electricity production and the determined insolation for photovoltaic modules in the fixed and dual-axis tracking configurations in August 2016.



**Figure S2.** Variability of the electricity production and the determined insolation for photovoltaic modules in the fixed and dual-axis tracking configurations in August 2017.

**Table S1.** Values of RMSE% and MBE% for tested models.

			<u>L</u>	<u>H</u>	<u>B</u>	<u>T</u>	<u>K</u>	<u>M</u>				<u>L</u>	<u>H</u>	<u>B</u>	<u>T</u>	<u>K</u>	<u>M</u>
January	30	RMSE%	5.035	8.030	12.869	19.716	8.688	3.975	July		5.571	5.502	10.942	15.438	4.277	4.259	
		MBE%	-2.133	-1.237	-6.438	-10.036	-2.453	1.571			-2.790	-2.185	-7.408	-10.853	-0.756	0.859	
	45	RMSE%	10.205	12.736	24.887	25.135	10.238	4.904		10.039	9.585	20.353	20.372	6.303	6.245		
		MBE%	-4.714	-3.306	-12.461	-12.666	-2.934	-1.096		-5.932	-5.129	-14.216	-14.227	-1.363	-1.518		
	60	RMSE%	17.004	18.657	34.978	29.101	12.488	11.095		15.051	14.760	28.619	23.853	7.657	9.803		
		MBE%	-8.103	-6.489	-17.603	-14.497	-3.784	-4.740		-9.930	-9.484	-20.468	-16.871	-2.439	-5.411		
February	30	RMSE%	3.256	6.497	8.596	13.367	3.572	4.989	August		2.930	3.044	8.395	12.516	1.685	2.666	
		MBE%	-0.744	1.702	-4.585	-7.325	0.670	2.053			-1.716	0.054	-5.647	-8.465	-0.186	1.343	
	45	RMSE%	5.546	7.727	15.866	15.866	4.834	4.457		5.538	4.602	15.497	15.497	2.493	2.366		
		MBE%	-2.217	0.966	-8.700	-8.700	0.861	0.547		-3.521	-1.282	-10.511	-10.511	-0.232	-0.378		
	60	RMSE%	8.805	8.753	21.479	17.069	5.945	5.717		9.037	7.277	21.329	17.172	3.536	3.605		
		MBE%	-4.246	-0.588	-11.872	-9.347	0.008	-1.543		-5.917	-3.486	-14.501	-11.648	-0.194	-1.760		
March	30	RMSE%	2.447	4.286	7.546	11.543	2.956	2.403	September		2.296	2.941	8.702	13.450	1.356	1.399	
		MBE%	-1.233	1.410	-4.475	-6.796	-1.070	1.244			-1.178	1.450	-5.416	-8.458	0.470	0.658	
	45	RMSE%	4.004	5.152	13.453	13.450	2.554	1.441		5.362	2.803	16.735	16.746	2.103	2.429		
		MBE%	-2.365	1.020	-7.948	-7.944	-0.420	0.090		-3.042	0.261	-10.461	-10.471	0.461	-0.841		
	60	RMSE%	6.648	5.993	17.857	14.076	3.128	3.062		9.604	5.168	23.255	29.517	3.024	6.240		
		MBE%	-3.824	0.024	-10.505	-8.282	0.271	-1.336		-5.640	-2.088	-14.473	-14.944	0.337	-3.400		
April	30	RMSE%	6.529	5.795	11.356	15.407	6.224	5.517	October		4.338	2.771	12.960	19.151	1.248	0.787	
		MBE%	-3.386	-1.691	-7.386	-10.300	-2.771	-0.207			-2.451	-1.587	-7.431	-11.006	-0.537	-0.044	
	45	RMSE%	10.355	8.487	19.596	19.640	8.324	7.620		9.466	7.388	24.631	24.631	2.444	1.652		
		MBE%	-5.963	-3.710	-13.082	-13.114	-3.721	-2.809		-5.415	-4.276	-14.160	-14.160	-1.294	-0.793		
	60	RMSE%	14.705	10.014	26.469	22.330	10.347	11.166		16.122	13.734	34.259	28.234	4.060	3.115		

		MBE%	-9.092	-6.023	-17.821	-14.896	-4.145	-5.876		-9.269	-7.943	-19.698	-16.246	-2.275	-1.736		
May	30	RMSE%	6.214	6.096	10.320	14.061	5.434	4.631	November	4.480	10.613	13.472	20.194	8.898	4.223		
		MBE%	-2.779	-2.652	-6.768	-9.726	-1.092	0.014		-1.971	-4.127	-6.648	-10.039	-0.582	1.777		
	45	RMSE%	9.724	9.725	18.146	18.142	8.004	7.283		9.421	17.036	25.362	25.362	9.329	3.442		
		MBE%	-4.986	-4.987	-12.416	-12.414	-1.633	-1.690		-4.508	-7.314	-12.616	-12.784	-0.602	-0.917		
	60	RMSE%	13.908	13.909	24.862	20.957	10.471	10.253		16.038	29.373	34.994	28.660	6.145	9.292		
		MBE%	-7.979	-7.980	-17.228	-14.147	-2.006	-3.729		-7.869	-10.816	-17.440	-14.259	-1.866	-4.341		
	June	30	RMSE%	6.355	6.346	10.054	13.789	6.458		6.103	December	5.473	5.465	16.104	23.892	2.231	1.875
			MBE%	-0.793	-0.038	-5.184	-8.335	1.180		2.425		-2.503	-2.502	-7.666	-11.344	-0.537	1.141
45		RMSE%	10.342	23.744	18.338	18.350	9.178	8.561	11.927	11.924		30.559	30.584	4.681	3.161		
		MBE%	-2.516	-5.646	-10.570	-10.543	1.288	1.023	-5.577	-5.575		-14.560	-14.566	-1.077	-0.554		
60		RMSE%	14.073	15.306	25.393	21.287	10.902	10.426	14.828	14.828		30.884	25.615	4.895	3.993		
		MBE%	-5.758	-0.312	-15.847	-12.489	0.729	-2.276	-6.994	-6.994		-14.691	-12.190	-1.771	-1.260		

L (Liu – Jordan model), H (Hay model), B (Badescu model), T (Tian model), K (Koronakis model), M (proposed model)