

PVsyst - Simulation report

Grid-Connected System

Project: Test_Houston_customMeteo

Variant: -14min Timeshift on Meteo File

No 3D scene defined, no shadings

System power: 10.80 kWp

Test_Houston_NASA - United States



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VC1, Simulation date:
07/22/23 02:50
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Project summary

Geographical Site Test_Houston_NASA United States	Situation Latitude 29.81 °N Longitude -95.42 °W Altitude 24 m Time zone UTC-6	Project settings Albedo 0.20
Meteo data Houston_30min_2020 Custom file - Imported		

System summary

Grid-Connected System	No 3D scene defined, no shadings		
PV Field Orientation horizontal plane	Near Shadings No Shadings		User's needs Unlimited load (grid)
System information			
PV Array		Inverters	
Nb. of modules	20 units	Nb. of units	1 unit
Pnom total	10.80 kWp	Pnom total	10.00 kWac
		Pnom ratio	1.080

Results summary

Produced Energy	16282.84 kWh/year	Specific production	1508 kWh/kWp/year	Perf. Ratio PR	88.62 %
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Main results

System Production

Produced Energy 16282.84 kWh/year

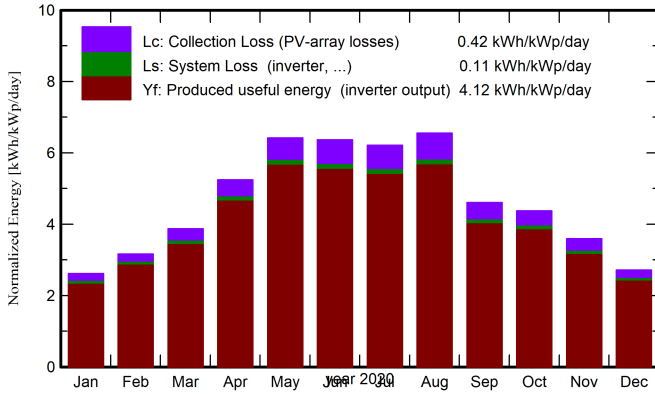
Specific production

1508 kWh/kWp/year

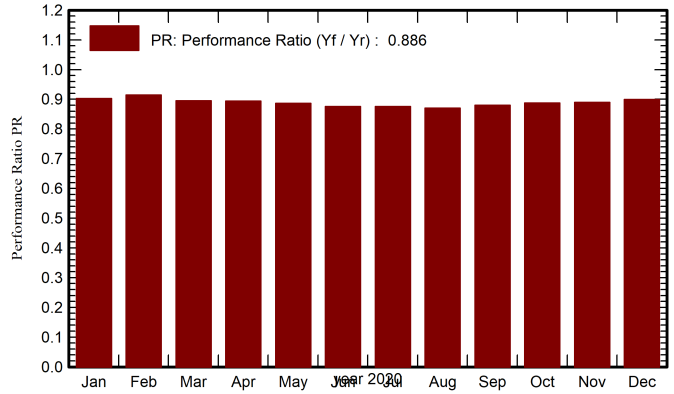
Perf. Ratio PR

88.62 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

	GlobHor kWh/m ²	DiffHor kWh/m ²	T_Amb °C	GlobInc kWh/m ²	GlobEff kWh/m ²	EArray kWh	E_Grid kWh	PR ratio
Jan. 20	81.0	29.11	13.76	80.9	77.0	815	789	0.902
Feb. 20	91.7	30.67	12.73	91.6	88.4	932	905	0.915
Mar. 20	120.1	56.75	20.60	120.0	116.7	1193	1160	0.895
Apr. 20	157.3	58.90	21.43	157.3	153.6	1557	1518	0.894
May 20	199.3	72.29	24.81	199.1	195.2	1952	1907	0.887
June 20	191.3	67.31	27.78	191.1	187.3	1851	1808	0.876
July 20	192.6	75.49	28.97	192.5	188.7	1863	1820	0.875
Aug. 20	203.3	62.14	29.79	203.2	199.3	1954	1910	0.870
Sep. 20	138.2	57.59	26.51	138.1	134.7	1348	1314	0.881
Oct. 20	135.8	41.27	22.07	135.6	131.3	1334	1300	0.888
Nov. 20	107.8	30.06	18.95	107.7	102.9	1063	1035	0.890
Dec. 20	84.3	25.90	12.43	84.2	79.5	844	818	0.899
Year	1702.7	607.49	21.68	1701.3	1654.7	16705	16283	0.886

Legends

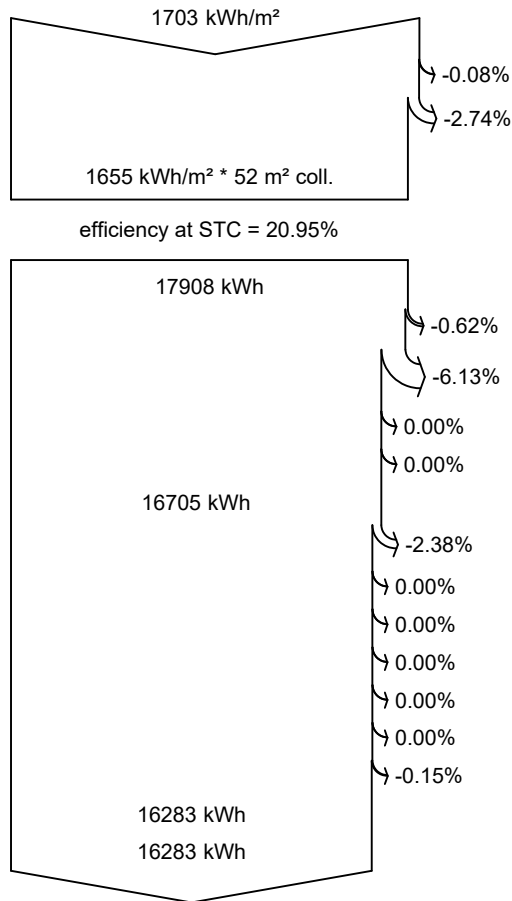
- GlobHor Global horizontal irradiation
- DiffHor Horizontal diffuse irradiation
- T_Amb Ambient Temperature
- GlobInc Global incident in coll. plane
- GlobEff Effective Global, corr. for IAM and shadings
- EArray Effective energy at the output of the array
- E_Grid Energy injected into grid
- PR Performance Ratio



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Loss diagram



- Global horizontal irradiation**
- Global incident in coll. plane**
 - IAM factor on global
- Effective irradiation on collectors**
 - PV conversion
- Array nominal energy (at STC effic.)**
 - PV loss due to irradiance level
 - PV loss due to temperature
 - Module array mismatch loss
 - Ohmic wiring loss
- Array virtual energy at MPP**
 - Inverter Loss during operation (efficiency)
 - Inverter Loss over nominal inv. power
 - Inverter Loss due to max. input current
 - Inverter Loss over nominal inv. voltage
 - Inverter Loss due to power threshold
 - Inverter Loss due to voltage threshold
 - Night consumption
- Available Energy at Inverter Output**
- Energy injected into grid**

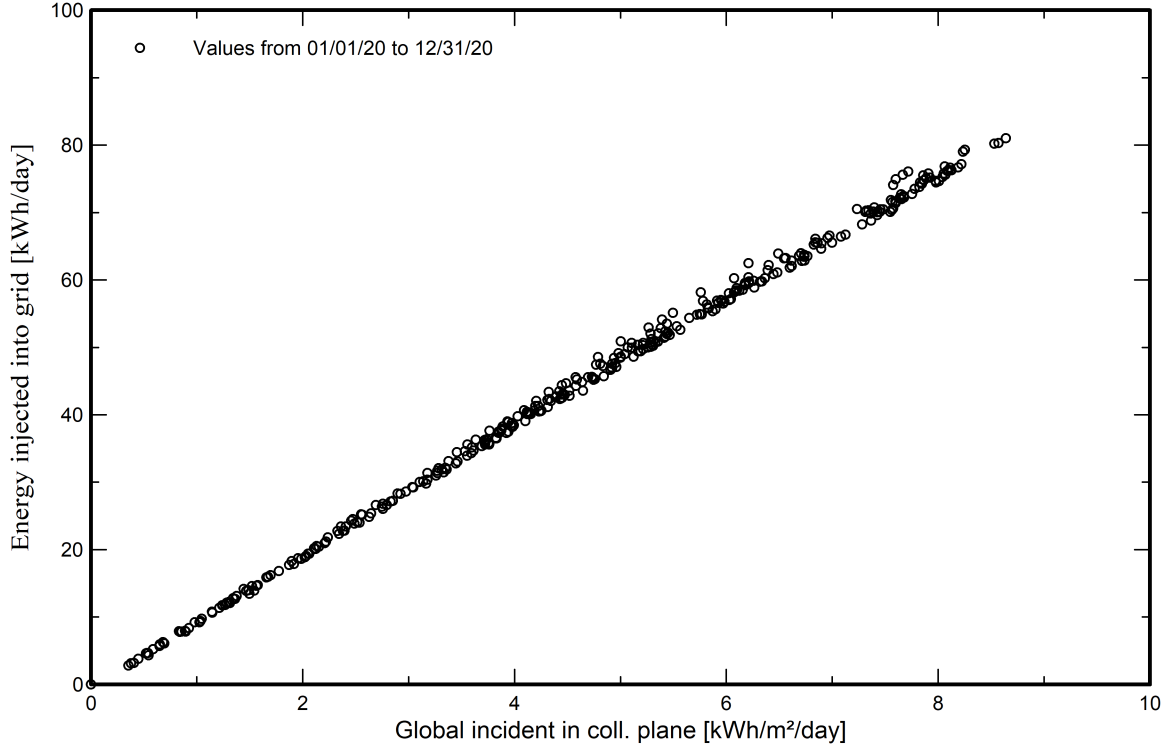


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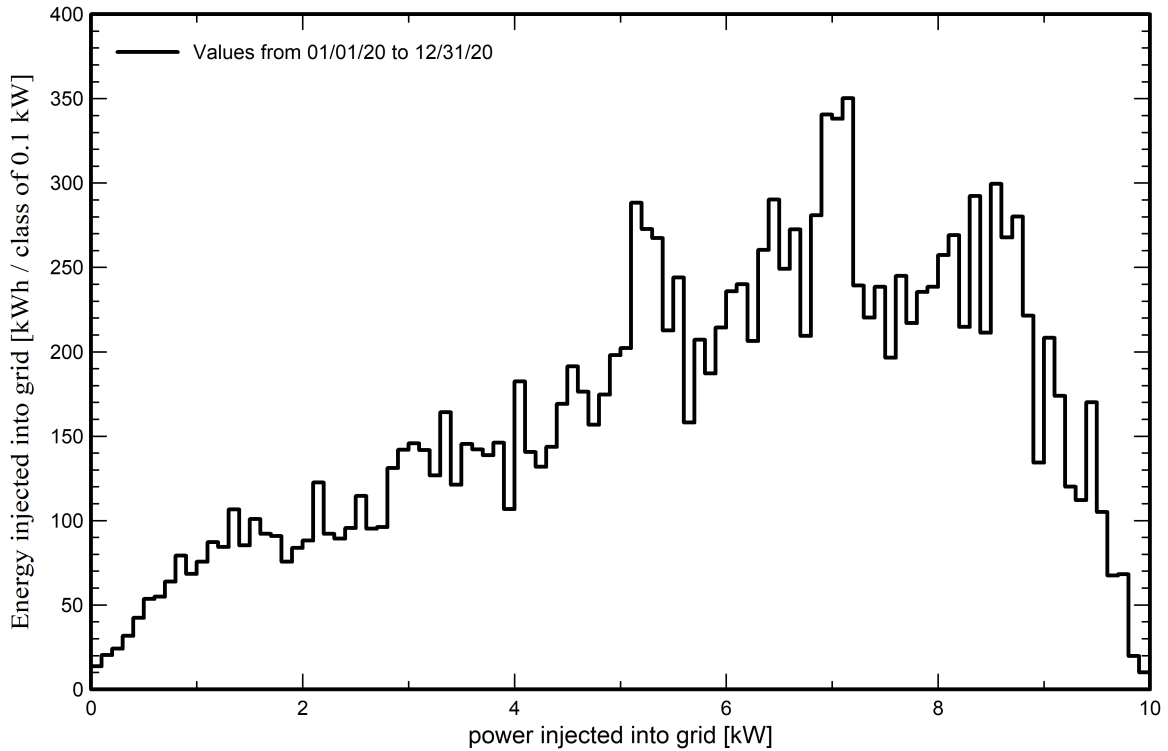
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Predef. graphs

Daily Input/Output diagram



System Output Power Distribution

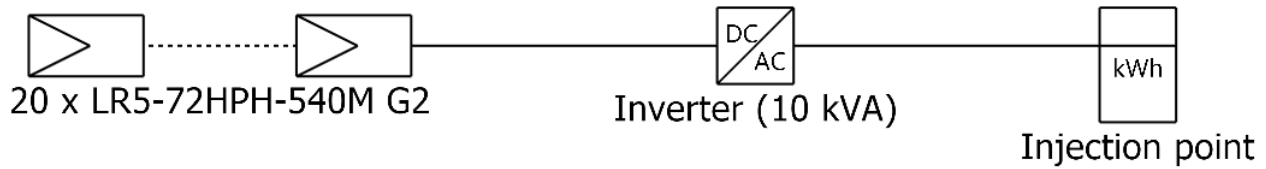




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Single-line diagram



PV module	LR5-72HPH-540M G2
Inverter	SUN2000-10KTL-M1
String	20 x LR5-72HPH-540M G2

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08/01/23