Version 7.4.8

# PVsyst - Simulation report

## Grid-Connected System

### Project: PEAKI

Variant: ΠΕΑΚΙ2

No 3D scene defined, no shadings

System power: 397 kWp

Neochorópoulo - Greece

**Author**

ENTE OE (Greece)

**PVsyst V7.4.8**
VC0, Simulation date:
07/10/24 18:10
with V7.4.8

## Project summary

**Geographical Site**
**Neochorópoulo**
Greece

**Situation**

| | |
|---|---|
| Latitude | 39.62 °N |
| Longitude | 20.85 °E |
| Altitude | 475 m |
| Time zone | UTC+2 |

**Project settings**

| | |
|---|---|
| Albedo | 0.20 |

**Weather data**
Neochorópoulo
PVGIS api TMY

## System summary

**Grid-Connected System**

**No 3D scene defined, no shadings**

**PV Field Orientation**
Fixed plane
Tilt/Azimuth 25 / 0 °

**Near Shadings**
No Shadings

**User's needs**
Unlimited load (grid)

**System information**

**PV Array**

| | |
|---|---|
| Nb. of modules | 735 units |
| Pnom total | 397 kWp |

**Inverters**

| | |
|---|---|
| Nb. of units | 4 units |
| Pnom total | 400 kWac |
| Pnom ratio | 0.992 |

## Results summary

| | | | | | |
|---|---|---|---|---|---|
| Produced Energy | 615.50 MWh/year | Specific production | 1551 kWh/kWp/year | Perf. Ratio PR | 85.28 % |

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## General parameters

**Grid-Connected System** — **No 3D scene defined, no shadings**

**PV Field Orientation**

| Orientation | | Sheds configuration | Models used | |
|---|---|---|---|---|
| Fixed plane | | No 3D scene defined | Transposition | Perez |
| Tilt/Azimuth | 25 / 0 ° | | Diffuse | Imported |
| | | | Circumsolar | separate |

**Horizon**
Free Horizon

**Near Shadings**
No Shadings

**User's needs**
Unlimited load (grid)

## PV Array Characteristics

**PV module**

| | |
|---|---|
| Manufacturer | Luxor |
| Model | LX-540M/182-144+ |
| (Original PVsyst database) | |
| Unit Nom. Power | 540 Wp |
| Number of PV modules | 735 units |
| Nominal (STC) | 397 kWp |
| Modules | 49 string x 15 In series |
| **At operating cond. (50°C)** | |
| Pmpp | 361 kWp |
| U mpp | 556 V |
| I mpp | 649 A |

**Inverter**

| | |
|---|---|
| Manufacturer | Huawei Technologies |
| Model | SUN2000-100KTL-M1-400Vac |
| (Original PVsyst database) | |
| Unit Nom. Power | 100 kWac |
| Number of inverters | 40 * MPPT 10% 4 units |
| Total power | 400 kWac |
| Operating voltage | 200-1000 V |
| Max. power (=>33°C) | 110 kWac |
| Pnom ratio (DC:AC) | 0.99 |
| No power sharing between MPPTs | |

**Total PV power**

| | |
|---|---|
| Nominal (STC) | 397 kWp |
| Total | 735 modules |
| Module area | 1900 m² |
| Cell area | 1746 m² |

**Total inverter power**

| | |
|---|---|
| Total power | 400 kWac |
| Number of inverters | 4 units |
| Pnom ratio | 0.99 |

## Array losses

**Thermal Loss factor**
Module temperature according to irradiance
Uc (const) 20.0 W/m²K
Uv (wind) 0.0 W/m²K/m/s

**DC wiring losses**
Global array res. 14 mΩ
Loss Fraction 1.5 % at STC

**Module Quality Loss**
Loss Fraction -0.8 %

**Module mismatch losses**
Loss Fraction 2.0 % at MPP

**IAM loss factor**
Incidence effect (IAM): Fresnel, AR coating, n(glass)=1.526, n(AR)=1.290

| 0° | 30° | 50° | 60° | 70° | 75° | 80° | 85° | 90° |
|---|---|---|---|---|---|---|---|---|
| 1.000 | 0.999 | 0.987 | 0.962 | 0.892 | 0.816 | 0.681 | 0.440 | 0.000 |

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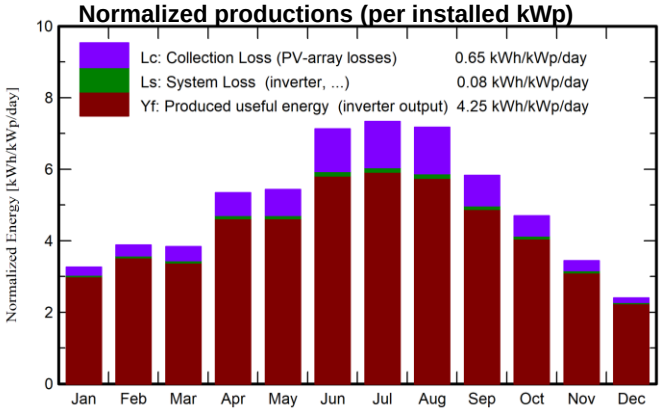
## Main results

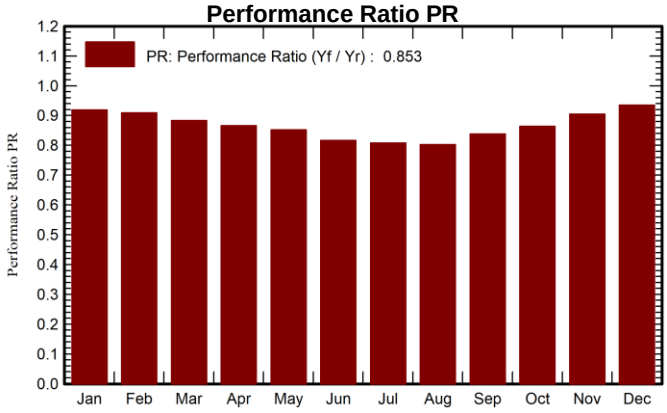
### System Production

| | | | |
|---|---|---|---|
| Produced Energy | 615.50 MWh/year | Specific production | 1551 kWh/kWp/year |
| | | Perf. Ratio PR | 85.28 % |

**Normalized productions (per installed kWp)**




**Performance Ratio PR**




### Balances and main results

| | GlobHor kWh/m² | DiffHor kWh/m² | T_Amb °C | GlobInc kWh/m² | GlobEff kWh/m² | EArray MWh | E_Grid MWh | PR ratio |
|---|---|---|---|---|---|---|---|---|
| **January** | 64.7 | 25.06 | 3.37 | 101.1 | 98.9 | 37.51 | 36.87 | 0.919 |
| **February** | 79.7 | 37.13 | 4.12 | 108.7 | 106.3 | 39.88 | 39.20 | 0.909 |
| **March** | 102.3 | 51.61 | 6.55 | 118.9 | 116.1 | 42.45 | 41.68 | 0.883 |
| **April** | 149.1 | 73.86 | 10.85 | 160.2 | 156.5 | 56.08 | 55.06 | 0.866 |
| **May** | 167.7 | 78.42 | 14.13 | 168.3 | 164.7 | 58.01 | 56.90 | 0.852 |
| **June** | 219.3 | 67.18 | 21.31 | 213.8 | 209.4 | 70.74 | 69.28 | 0.817 |
| **July** | 227.8 | 65.41 | 23.76 | 227.2 | 222.6 | 74.44 | 72.87 | 0.808 |
| **August** | 207.6 | 57.33 | 24.12 | 222.3 | 217.7 | 72.37 | 70.84 | 0.803 |
| **September** | 149.2 | 54.60 | 18.28 | 174.7 | 171.4 | 59.33 | 58.15 | 0.838 |
| **October** | 108.9 | 39.44 | 12.93 | 145.6 | 142.9 | 50.89 | 49.93 | 0.864 |
| **November** | 70.3 | 31.41 | 9.04 | 103.2 | 101.0 | 37.71 | 37.06 | 0.905 |
| **December** | 48.1 | 23.08 | 3.59 | 74.4 | 72.9 | 28.12 | 27.63 | 0.935 |
| **Year** | 1594.6 | 604.53 | 12.72 | 1818.5 | 1780.4 | 627.51 | 615.50 | 0.853 |

### 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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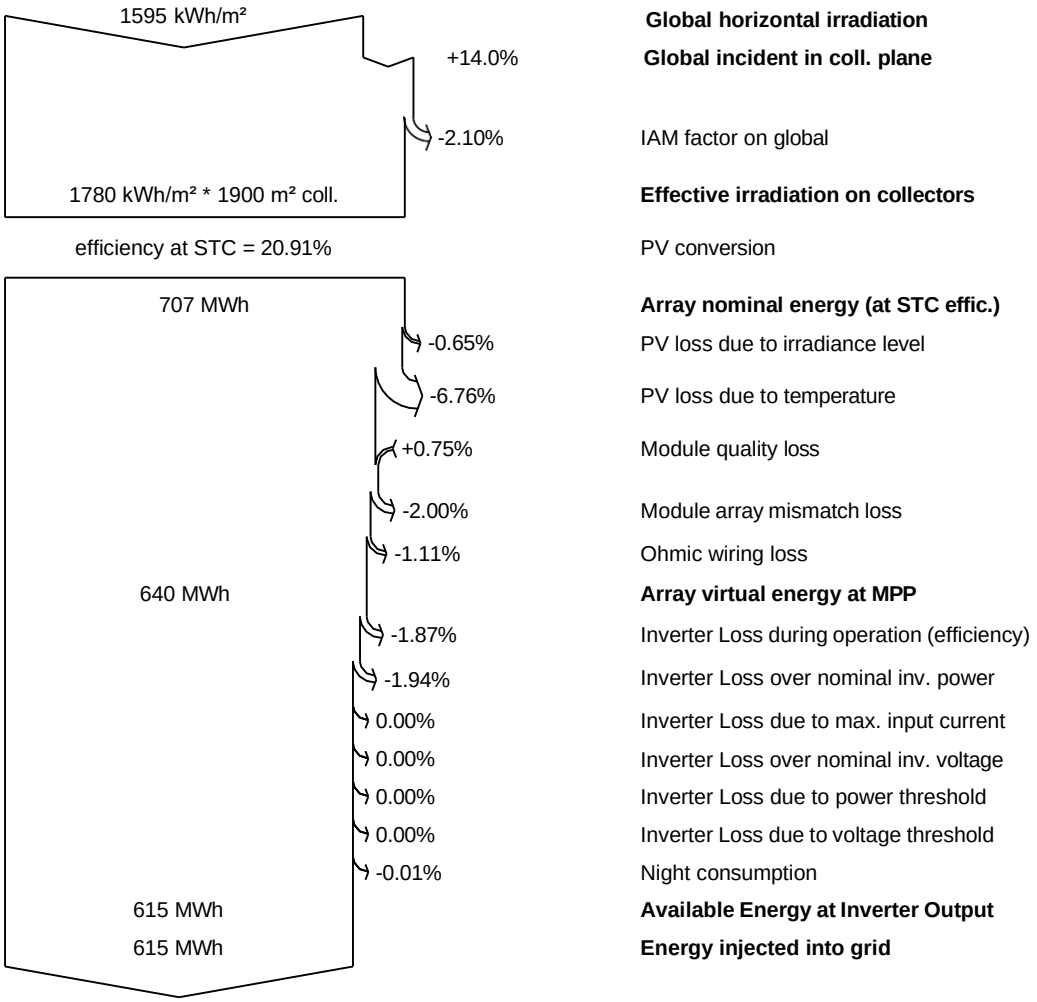
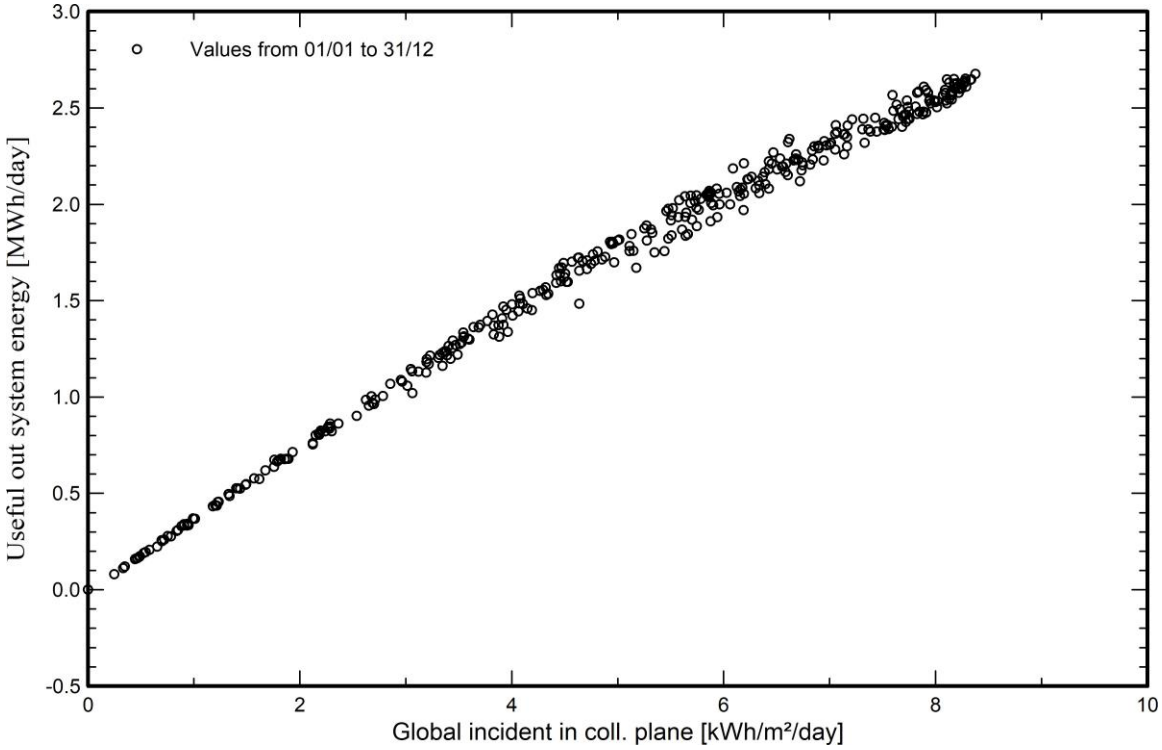
## Loss diagram



## Predef. graphs

### Daily Input/Output diagram




### System Output Power Distribution