	PVSYST V6.26	Quentin Gargan	04/05/15	Page 1/3
	18, Northern Cross Bus Pk. Finglas			

Grid-Connected System: Simulation parameters

Project :

10 panel Dublin

Geographical Site

Dublin

Country

Ireland

Situation

Latitude 51.2°N

Longitude 6.7°W

Time defined as

Legal Time Time zone UT

Altitude 95 m

Albedo 0.20

Meteo data:

Dublin

Synthetic - Meteonorm 6.1

Simulation variant :

New simulation variant

Simulation date 04/05/15 22h26

Simulation parameters

Collector Plane Orientation

Tilt 35°

Azimuth 0°

Models used

Transposition Perez

Diffuse Erbs, Meteonorm

Horizon

Free Horizon

Near Shadings

No Shadings

PV Array Characteristics

PV module

Si-mono

Model

TSM-260 D05A

Manufacturer

Trina Solar

In series

10 modules

In parallel

1 strings

Total number of PV modules

Nb. modules

10

Unit Nom. Power

260 Wp

Array global power

Nominal (STC)

2600 Wp

At operating cond.

2336 Wp (50°C)

Array operating characteristics (50°C)

U mpp

272 V

I mpp

8.6 A

Total area

Module area

16.4 m²

Inverter

Model

GCI-2K

Manufacturer

Ginlong

Operating Voltage

100-500 V

Unit Nom. Power

2.00 kW AC

PV Array loss factors

Thermal Loss factor

Uc (const)

20.0 W/m²K

Uv (wind)

0.0 W/m²K / m/s

Wiring Ohmic Loss

Global array res.

529 mOhm

Loss Fraction

1.5 % at STC

Module Quality Loss

Loss Fraction

-0.8 %

Module Mismatch Losses

Loss Fraction

1.0 % at MPP

Incidence effect, ASHRAE parametrization

IAM = 1 - bo (1/cos i - 1)

bo Param.

0.05

User's needs :

Unlimited load (grid)

## Grid-Connected System: Main results

**Project :** 10 panel Dublin

**Simulation variant :** New simulation variant

### Main system parameters

PV Field Orientation

PV modules

PV Array

Inverter

User's needs

System type

tilt

Model

Nb. of modules

Model

Unlimited load (grid)

**Grid-Connected**

35°

TSM-260 D05A

10

GCI-2K

azimuth 0°

Pnom 260 Wp

Pnom total **2600 Wp**

Pnom 2000 W ac

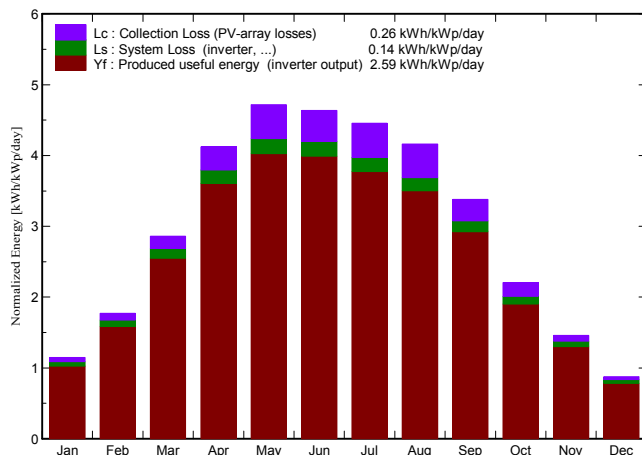
### Main simulation results

System Production

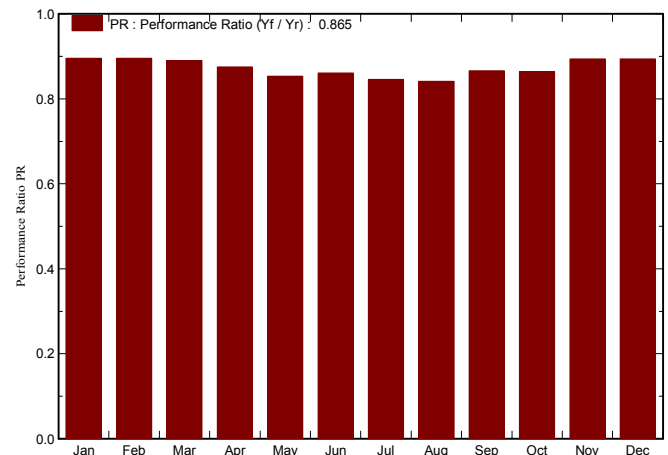
**Produced Energy 2454 kWh/year**  
Performance Ratio PR 86.5 %

Specific prod. 944 kWh/kWp/year

Normalized productions (per installed kWp): Nominal power 2600 Wp



Performance Ratio PR



### New simulation variant Balances and main results

	GlobHor kWh/m <sup>2</sup>	T Amb °C	GlobInc kWh/m <sup>2</sup>	GlobEff kWh/m <sup>2</sup>	EArray kWh	E_Grid kWh	EffArrR %	EffSysR %
January	20.1	5.54	35.6	34.4	87.8	82.8	15.09	14.22
February	32.9	5.54	49.5	48.0	122.0	115.4	15.04	14.23
March	69.2	6.84	88.7	86.0	216.5	205.5	14.91	14.15
April	106.6	8.06	123.6	119.6	296.1	281.3	14.64	13.91
May	143.6	10.67	146.2	141.3	341.6	324.5	14.27	13.56
June	143.3	13.34	139.1	134.0	327.6	311.2	14.39	13.67
July	139.9	14.95	138.2	133.3	320.1	304.0	14.15	13.44
August	119.0	15.16	129.1	124.8	297.4	282.3	14.08	13.36
September	81.4	13.44	101.3	98.2	240.2	228.2	14.48	13.76
October	49.1	10.33	68.3	66.3	162.1	153.5	14.50	13.73
November	24.5	7.53	43.7	42.4	107.6	101.7	15.02	14.20
December	14.1	5.73	27.2	26.2	67.2	63.2	15.10	14.20
Year	943.6	9.79	1090.6	1054.4	2586.3	2453.5	14.49	13.74

Legends:

- GlobHor: Horizontal global 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
- EffArrR: Effic. Eout array / rough area
- EffSysR: Effic. Eout system / rough area

## Grid-Connected System: Loss diagram

**Project :** 10 panel Dublin

**Simulation variant :** New simulation variant

### Main system parameters

PV Field Orientation

PV modules

PV Array

Inverter

User's needs

System type

tilt

Model

Nb. of modules

Model

Unlimited load (grid)

**Grid-Connected**

35°

TSM-260 D05A

10

GCI-2K

azimuth 0°

Pnom 260 Wp

Pnom total **2600 Wp**

Pnom 2000 W ac

### Loss diagram over the whole year

