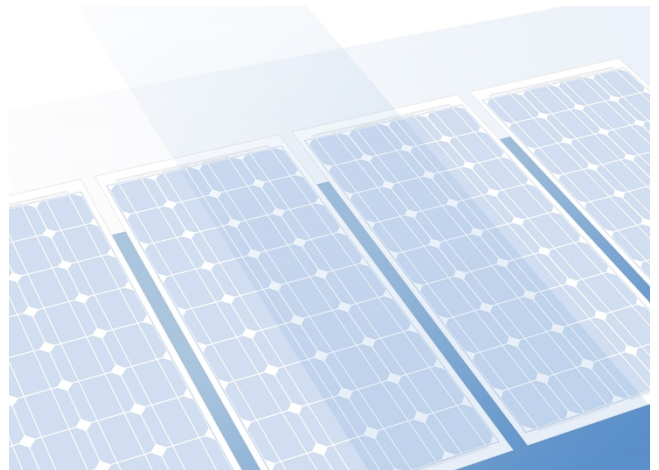


15/04/2021

Your PV system

Address of Installation



Project Overview

PV System

Grid-connected PV System

Climate Data	Berlin, DEU (1981 - 2010)
PV Generator Output	3,6 kWp
PV Generator Surface	30,2 m ²
Number of PV Modules	18
Number of Inverters	2

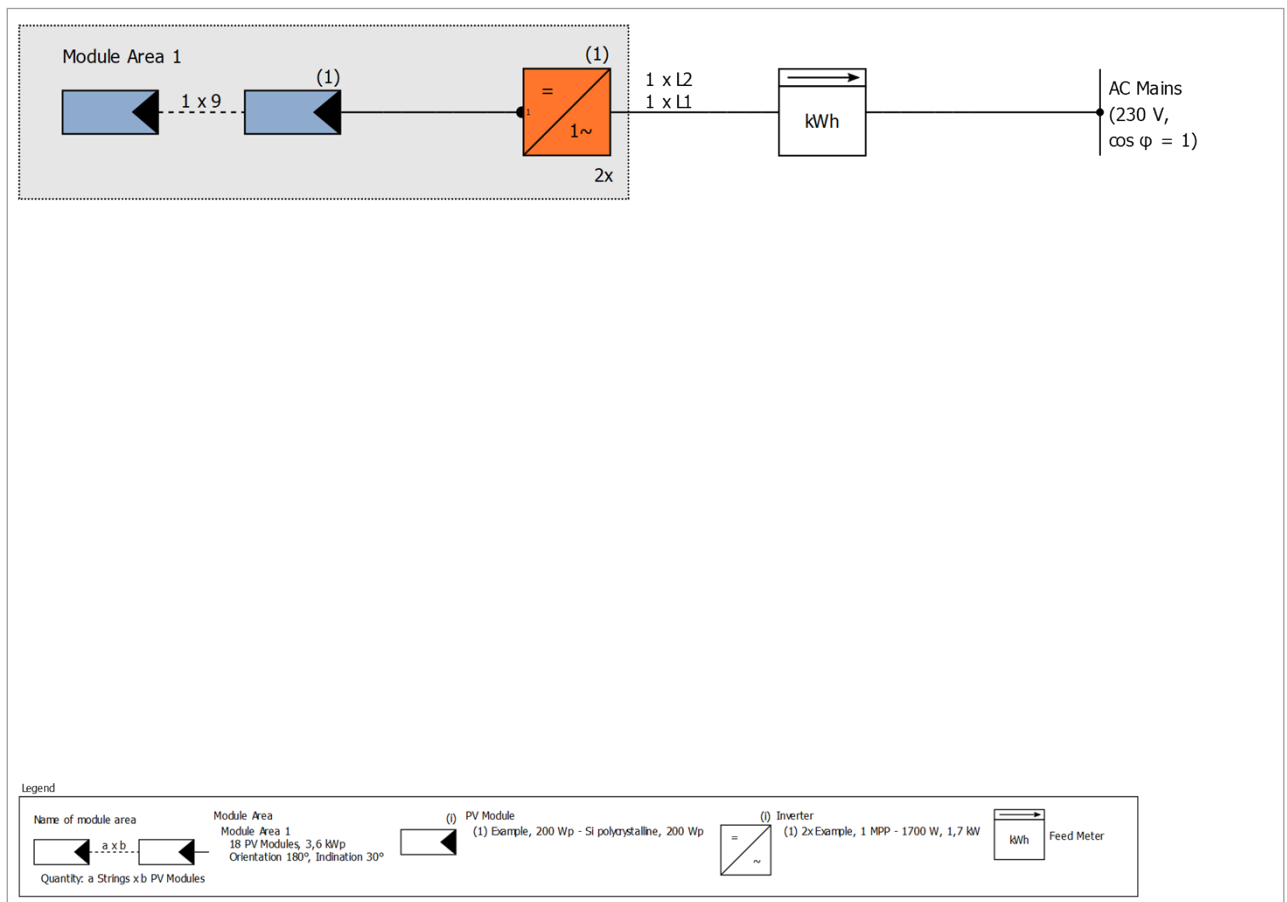


Figure: Schematic diagram

The yield

The yield

PV Generator Energy (AC grid)	3.493 kWh
Grid Feed-in	3.493 kWh
Down-regulation at Feed-in Point	0 kWh
Own Power Consumption	0,0 %
Solar Fraction	0,0 %
Spec. Annual Yield	970,17 kWh/kWp
Performance Ratio (PR)	82,8 %
CO ₂ Emissions avoided	1.642 kg / year

Financial Analysis

Your Gain

Total investment costs	5.400,00 Rp
Return on Assets	2,64 %
Amortization Period	17,2 Years
Electricity Production Costs	0,08 Rp/kWh
Energy Balance/Feed-in Concept	Full Feed-in

The results have been calculated with a mathematical model calculation from Valentin Software GmbH (PV*SOL algorithms). The actual yields from the solar power system may differ as a result of weather variations, the efficiency of the modules and inverter, and other factors.

Set-up of the System

Overview

System Data

Type of System	Grid-connected PV System
Start of Operation	15/04/2021

Climate Data

Location	Berlin, DEU (1981 - 2010)
Resolution of the data	1 h
Simulation models used:	
- Diffuse Irradiation onto Horizontal Plane	Hofmann
- Irradiance onto tilted surface	Hay & Davies

Module Areas

1. Module Area - Module Area 1

PV Generator, 1. Module Area - Module Area 1

Name	Module Area 1
PV Modules	18 x 200 Wp - Si polycrystalline (v2)
Manufacturer	Example
Inclination	30 °
Orientation	South 180 °
Installation Type	Roof parallel
PV Generator Surface	30,2 m ²

Inverter configuration

Configuration 1

Module Area	Module Area 1
Inverter 1	
Model	1 MPP - 1700 W (v3)
Manufacturer	Example
Quantity	2
Sizing Factor	105,9 %
Configuration	MPP 1: 1 x 9

AC Mains

AC Mains

Number of Phases	3
Mains Voltage (1-phase)	230 V
Displacement Power Factor (cos phi)	+/- 1

Simulation Results

Results Total System

PV System

PV Generator Output	3,6 kWp
Spec. Annual Yield	970,17 kWh/kWp
Performance Ratio (PR)	82,8 %
Grid Feed-in	3.493 kWh/Year
Grid Feed-in in the first year (incl. module degradation)	3.493 kWh/Year
Standby Consumption (Inverter)	1 kWh/Year
CO ₂ Emissions avoided	1.642 kg / year

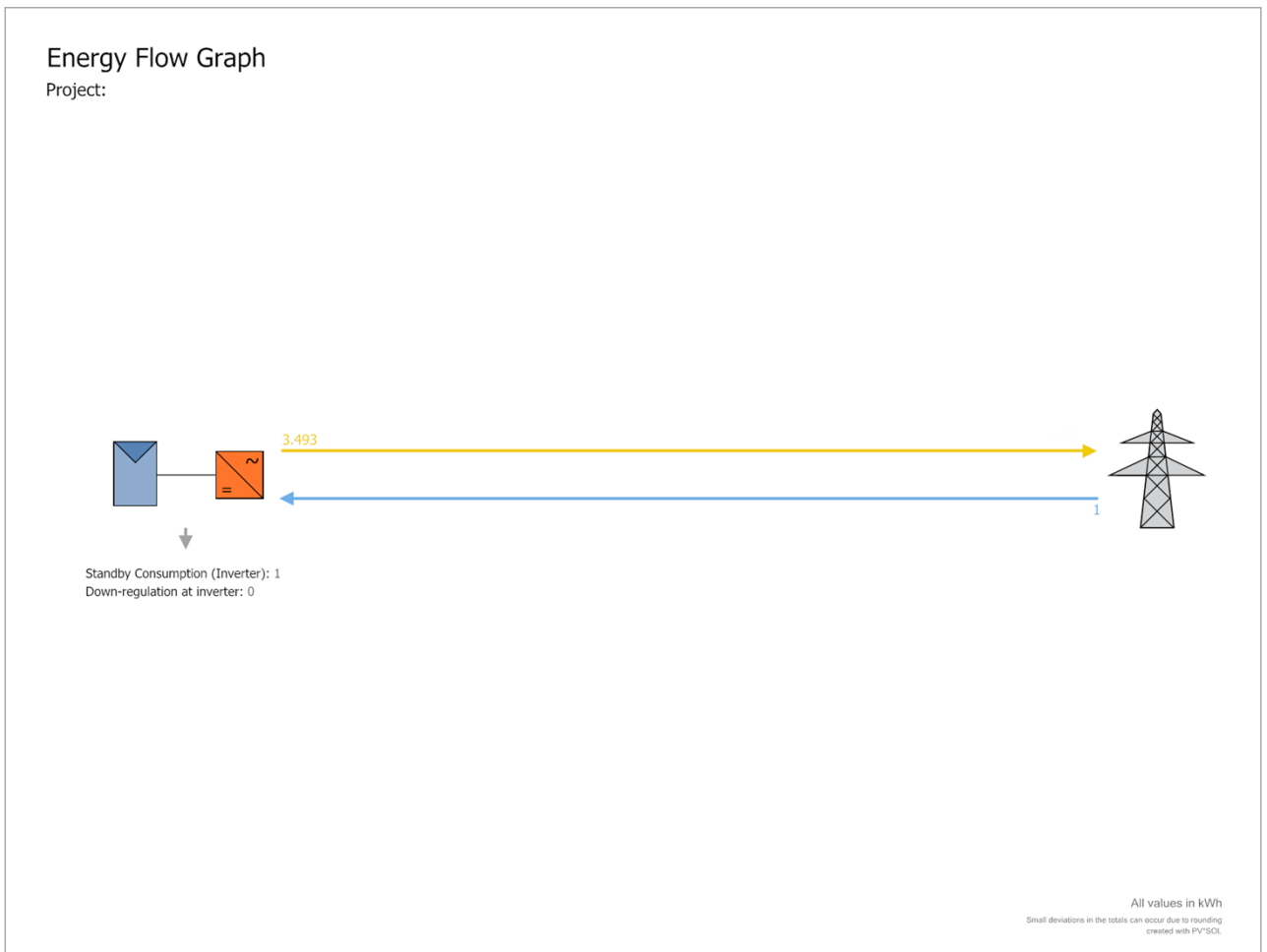


Figure: Energy Flow Graph

Yield for EnEV

Yield in accordance with DIN 15316-4-6

January	139,8 kWh
February	138,9 kWh
March	338,3 kWh
April	587,1 kWh
May	643 kWh
June	652 kWh
July	581,5 kWh
August	556,3 kWh
September	424,7 kWh
October	307,5 kWh
November	110,9 kWh
December	72,7 kWh
Annual Value	4.552,6 kWh

Boundary Conditions:

Climate Data according to DIN V 18599-10

MODULE AREA 1

System Power Factor: 0.75

Peak Power Coefficient: 0.166

Orientation: South

Inclination: 30°

Financial Analysis

Overview

System Data

Grid Feed-in in the first year (incl. module degradation)	3.493 kWh/Year
PV Generator Output	3,6 kWp
Start of Operation of the System	15/04/2021
Assessment Period	20 Years
Interest on Capital	1 %

Economic Parameters

Return on Assets	2,64 %
Accrued Cash Flow (Cash Balance)	1.038,34 Rp
Amortization Period	17,2 Years
Electricity Production Costs	0,08 Rp/kWh

Payment Overview

Specific Investment Costs	1.500,00 Rp/kWp
Investment Costs	5.400,00 Rp
One-off Payments	0,00 Rp
Incoming Subsidies	0,00 Rp
Annual Costs	0,00 Rp/Year
Other Revenue or Savings	0,00 Rp/Year

Remuneration and Savings

Total Payment from Utility in First Year	344,72 Rp/Year
EEG 2020 (Januar) - Gebäudeanlage	
Validity	15/04/2021 - 31/12/2041
Specific feed-in / export Remuneration	0,0987 Rp/kWh
Feed-in / Export Tariff	344,72 Rp/Year

Cash flow

Cashflow Table

	Year 1	Year 2	Year 3	Year 4	Year 5
Investments	-Rp5.400,00	Rp0,00	Rp0,00	Rp0,00	Rp0,00
Feed-in / Export Tariff	Rp323,10	Rp337,93	Rp334,58	Rp331,27	Rp327,99
Annual Cash Flow	-Rp5.076,90	Rp337,93	Rp334,58	Rp331,27	Rp327,99
Accrued Cash Flow (Cash Balance)	-Rp5.076,90	-Rp4.738,97	-Rp4.404,39	-Rp4.073,12	-Rp3.745,13

	Year 6	Year 7	Year 8	Year 9	Year 10
Investments	Rp0,00	Rp0,00	Rp0,00	Rp0,00	Rp0,00
Feed-in / Export Tariff	Rp324,74	Rp321,53	Rp318,34	Rp315,19	Rp312,07
Annual Cash Flow	Rp324,74	Rp321,53	Rp318,34	Rp315,19	Rp312,07
Accrued Cash Flow (Cash Balance)	-Rp3.420,39	-Rp3.098,86	-Rp2.780,52	-Rp2.465,33	-Rp2.153,26

	Year 11	Year 12	Year 13	Year 14	Year 15
Investments	Rp0,00	Rp0,00	Rp0,00	Rp0,00	Rp0,00
Feed-in / Export Tariff	Rp308,98	Rp305,92	Rp302,89	Rp299,89	Rp296,92
Annual Cash Flow	Rp308,98	Rp305,92	Rp302,89	Rp299,89	Rp296,92
Accrued Cash Flow (Cash Balance)	-Rp1.844,28	-Rp1.538,36	-Rp1.235,46	-Rp935,57	-Rp638,64

	Year 16	Year 17	Year 18	Year 19	Year 20
Investments	Rp0,00	Rp0,00	Rp0,00	Rp0,00	Rp0,00
Feed-in / Export Tariff	Rp293,98	Rp291,07	Rp288,19	Rp285,34	Rp282,51
Annual Cash Flow	Rp293,98	Rp291,07	Rp288,19	Rp285,34	Rp282,51
Accrued Cash Flow (Cash Balance)	-Rp344,66	-Rp53,59	Rp234,61	Rp519,94	Rp802,46

	Year 21
Investments	Rp0,00
Feed-in / Export Tariff	Rp235,89
Annual Cash Flow	Rp235,89
Accrued Cash Flow (Cash Balance)	Rp1.038,34

Degradation and inflation rates are applied on a monthly basis over the entire observation period. This is done in the first year.

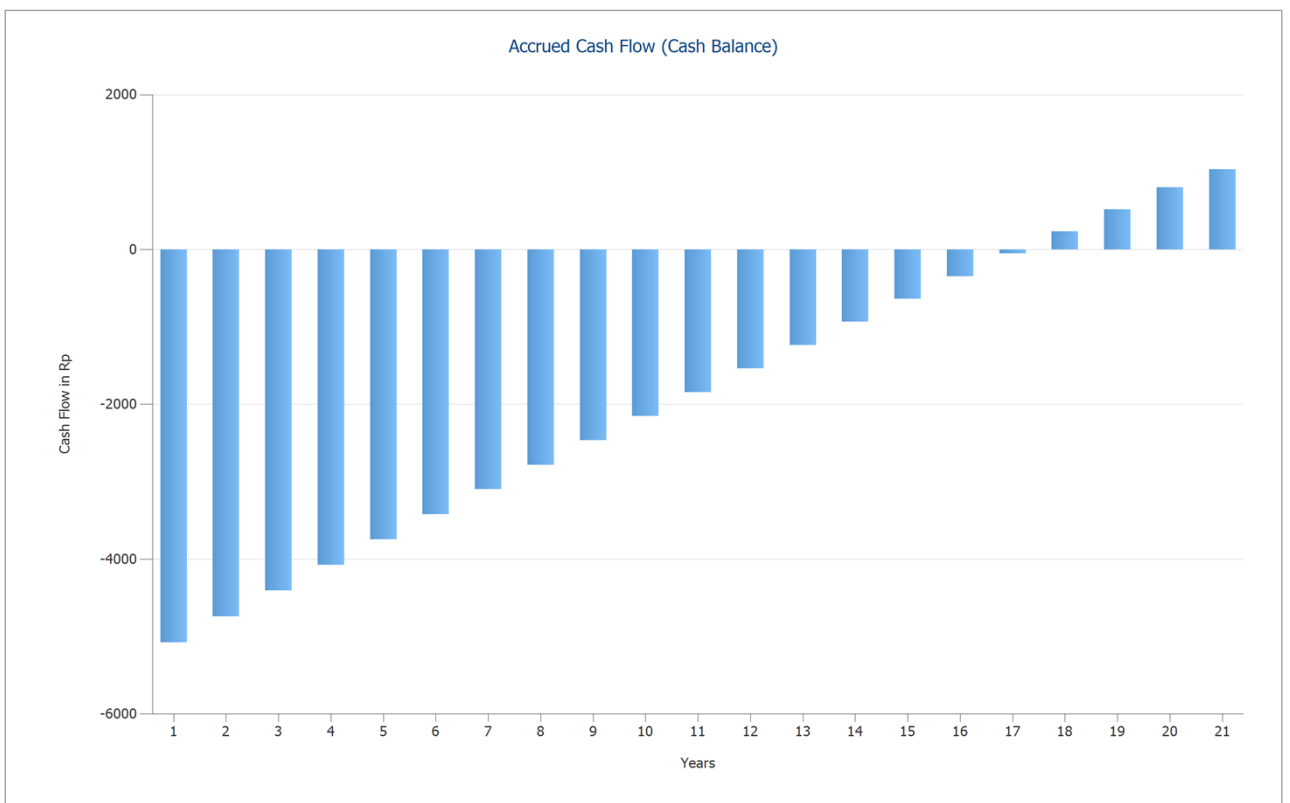


Figure: Accrued Cash Flow (Cash Balance)

Plans and parts list

Circuit Diagram

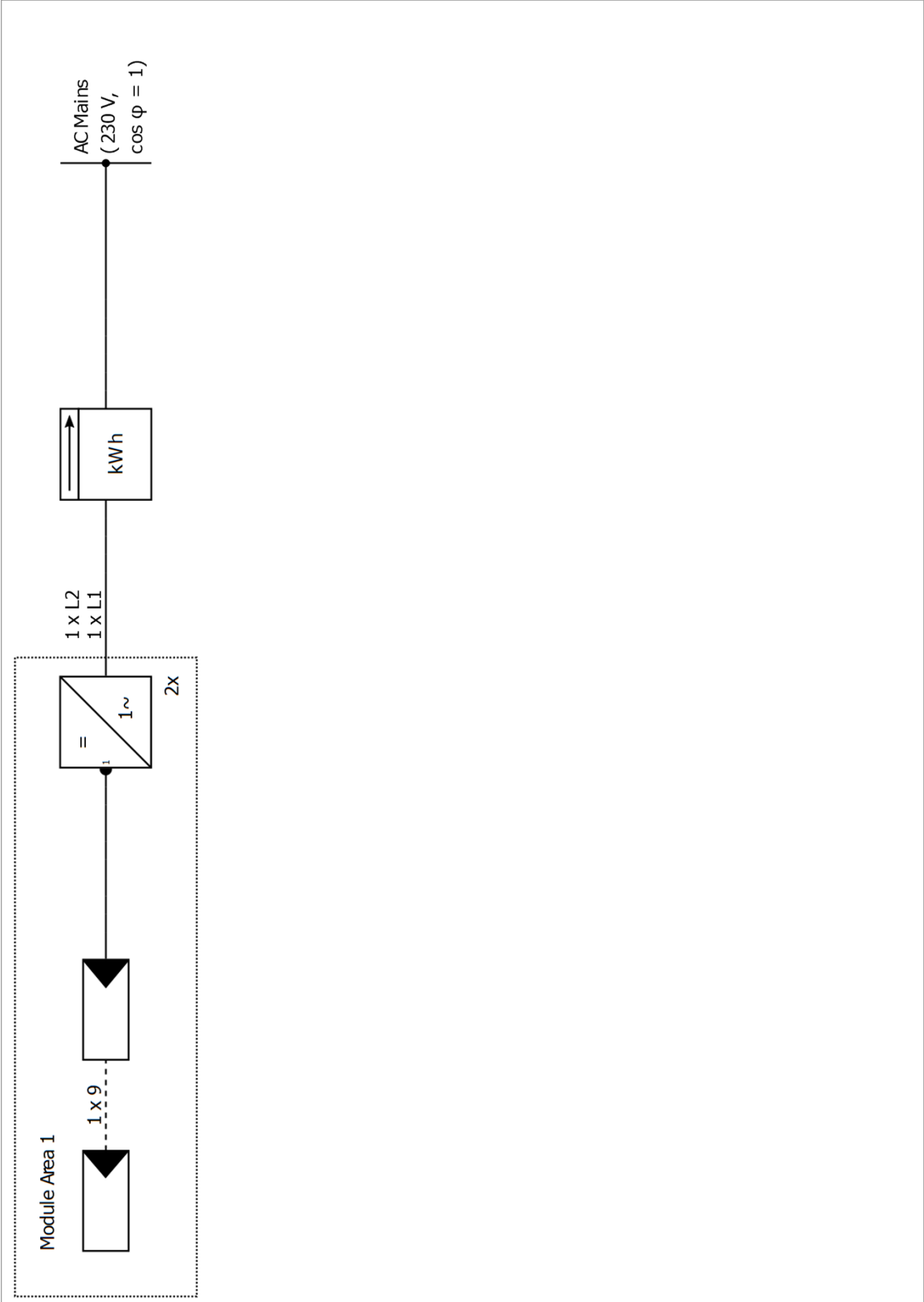


Figure: Circuit Diagram

Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		Example	200 Wp - Si polycrystalline	18	Piece
2	Inverter		Example	1 MPP - 1700 W	2	Piece
3	Meter			Feed Meter	1	Piece