

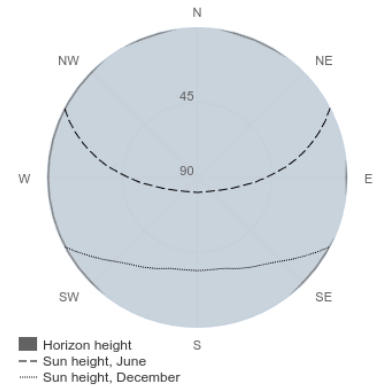
Performance of off-grid PV system

PVGIS-5 estimates of solar electricity generation

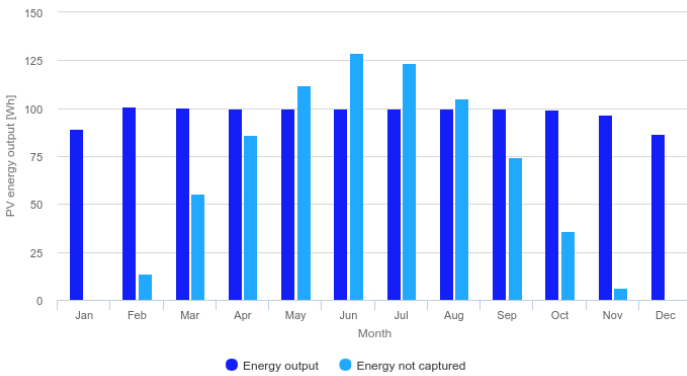
Provided inputs

Latitude/Longitude:	31.724,35.995	Slope angle:	3 °
Horizon:	Calculated	Azimuth angle:	0 °
Database used:	PVGIS-SARAH2	Simulation outputs	
PV installed:	40 Wp	Percentage days with full battery:	71.73 %
Battery capacity:	240 Wh	Percentage days with empty battery:	9.92 %
Cutoff limit:	5 %	Average energy not captured:	86.6 Wh
Consumption per day:	100 Wh	Average energy missing:	21.98 Wh

Outline of horizon at chosen location:



Power production estimate for off-grid PV:

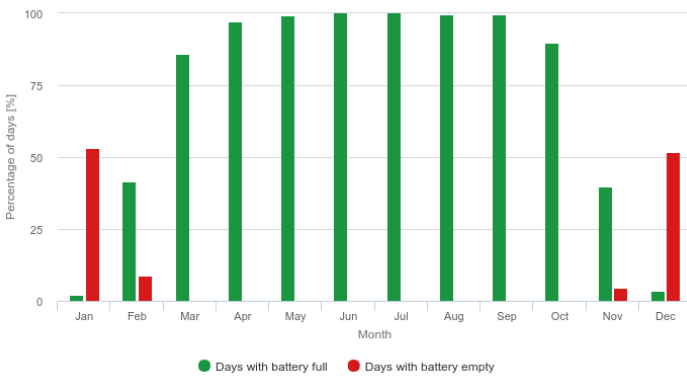


Monthly average performance

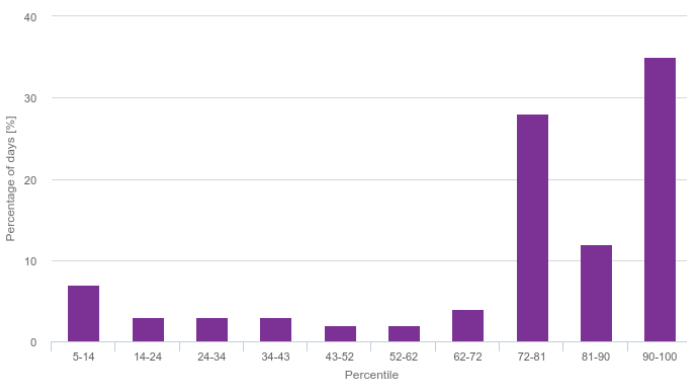
Month	E_d	E_l	f_f	f_e
January	89.5	0.5	2.2	53.0
February	101.0	13.6	41.5	8.7
March	100.4	55.5	86.1	0.0
April	100.1	86.3	97.1	0.0
May	100.0	112.0	99.2	0.0
June	100.0	128.7	100.0	0.0
July	100.0	123.4	100.0	0.0
August	100.0	105.2	99.8	0.0
September	99.9	74.7	99.6	0.0
October	99.5	35.7	89.9	0.0
November	96.8	6.1	39.8	4.6
December	86.7	0.1	3.7	51.8

E_d: Average energy production per day [Wh/day].
 E_l: Average energy not captured per day [Wh/day].
 f_f: Percentage of days when battery became full [%].
 f_e: Percentage of days when battery became empty [%].

Battery performance for off-grid PV system:



Probability of battery charge state at the end of the day:



Cs	Cb
5-14	7.0
14-24	3.0
24-34	3.0
34-43	3.0
43-52	2.0
52-62	2.0
62-72	4.0
72-81	28.0
81-90	12.0
90-100	35.0

Cs: Charge state at the end of each day [%].
 Cb: Percentage of days with this charge state [%].

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