Scenario — PV
Simple house in rural off-grid Africa Kenya - Kirinyaga County -0.469, 37.303

Name	Slope °	Azimuth °	Wp	Wall d/h m	Face	Bifacial	Wp counted
roof east	25	-90	3,000	—	front	—	yes
roof west	25	90	3,000	—	front	—	yes
Total counted			6,000				

Location: Example for living off-grid in rural Kenya. Testing a full living standard package in an average house typical for this area. This includes scooter, induction cooking, fridge and air conditioning. But it seems this area has more heating demand in the rain time than cooling demand.
Database PVGIS-SARAH3 2005–2023 loss 14 % azimuth 0 = south, 90 = west, −90 = east.
Price bands and charts use UTC+2 from longitude (15° per hour), not the political time zone.
Peak hour 2010-03-10 12:05 local (10:05 UTC) 4,785 W 0.797 W/Wp of 6,000 Wp.
Database gaps: 10 days with 0 yield while the sun reached the horizon at noon. 2008-01-23, 2008-03-01, 2008-03-06, 2008-05-17, 2008-05-18, 2009-04-18, 2009-04-19, 2009-08-15, 2009-08-16, 2016-10-16. Yield charts skip them. The simulation uses the lowest-yield day of that month.
Sell when the export price is above 0. At 0 cent export PV yield only, not the battery. Do not sell when the earning is negative. At 15:00 import/export scheduling.

Click here to work on this simulation. If the click does nothing, copy the address below and paste it in the browser. PEGE energy sim server has to run.

http://127.0.0.1:8765/form?name=Kenya+-+Kirinyaga+County&simname=Now+6+kW+PV+and+16+kWh+battery+and+small+electric+car&lat=-0.469&lon=37.303&startyear=2005&endyear=2023&loss=14.0&raddatabase=auto&usehorizon=1&outdir=%2Fhome

Scenario — house, heat pump, battery
Simple house in rural off-grid Africa Kenya - Kirinyaga County -0.469, 37.303

Chapter	Parameter	Value
Building	Design out / in / heat	10.0 °C / 20.0 °C / 800 W
	Heat on / cool on / ground	20.0 °C / 26.0 °C / 19.0 °C
	Curve / flow min / max	0.4 / 25.0 °C / 55.0 °C
	Thermal mass of the house	25.0 kWh/K
	Household only	3.0 kWh/day
DHW	Litres at 40 °C / tank	120 L tank 62.0 °C 8–18 h
	Water out of the pipe Q1–Q4	21 °C 19 °C 18 °C 20 °C
Heat pump	Source	air
	COP −10/0/10 @ 35 °C	1.8 2.2 2.8
	COP −10/0/10 @ 50 °C	1.5 1.8 2.3
	kW −10/0/10 @ 35 °C	0.8 1.0 1.2
	kW −10/0/10 @ 50 °C	0.6 0.8 1.2
Battery	kWh / C-rate / SOC min–max–start	16.0 kWh C 0.5 5 / 95 / 50 %
	Nameplate	Standard 16 × 314 Ah LFP
	Charge / discharge η	95 % / 90 %
Grid	Inverter / grid connection	3.0 kW / 0.0 kW
	Max export	0.0 kW
	Import cap Jan–Jun kW	Jan 1 Feb 1 Mar 1 Apr 1 May 1 Jun 1
	Import cap Jul–Dec kW	Jul 1 Aug 1 Sep 1 Oct 1 Nov 1 Dec 1
Cars	Lunch DC / night AC	0.0 kWh @ 0.0 kW night 5.0 kWh @ 1.0 kW

Clock is winter time UTC+1. Emergency import is an hour above the monthly kW cap.

Records 1–10 contribution of each PV
Kenya - Kirinyaga County -0.469, 37.303

PV	2010-03-10 10:05	2005-03-11 10:05	2005-04-01 10:05	2010-03-10 09:05	2013-03-14 10:05	2010-03-12 10:05	2017-02-16 10:05	2008-03-10 09:05	2009-02-28 10:05	2009-02-28 09:05
roof east	2,292	2,282	2,248	2,525	2,271	2,271	2,280	2,507	2,264	2,508
roof west	2,493	2,482	2,503	2,226	2,478	2,472	2,449	2,214	2,443	2,196
Watt at record	4,785	4,764	4,751	4,751	4,749	4,743	4,729	4,721	4,707	4,703
Percent of installed peak	79.7	79.4	79.2	79.2	79.2	79.0	78.8	78.7	78.4	78.4

Values are watts at that hour. Date and time are UTC. Record 4,785 W (79.7 % of 6,000 Wp).

Hours at or above a share of the record
Kenya - Kirinyaga County -0.469, 37.303

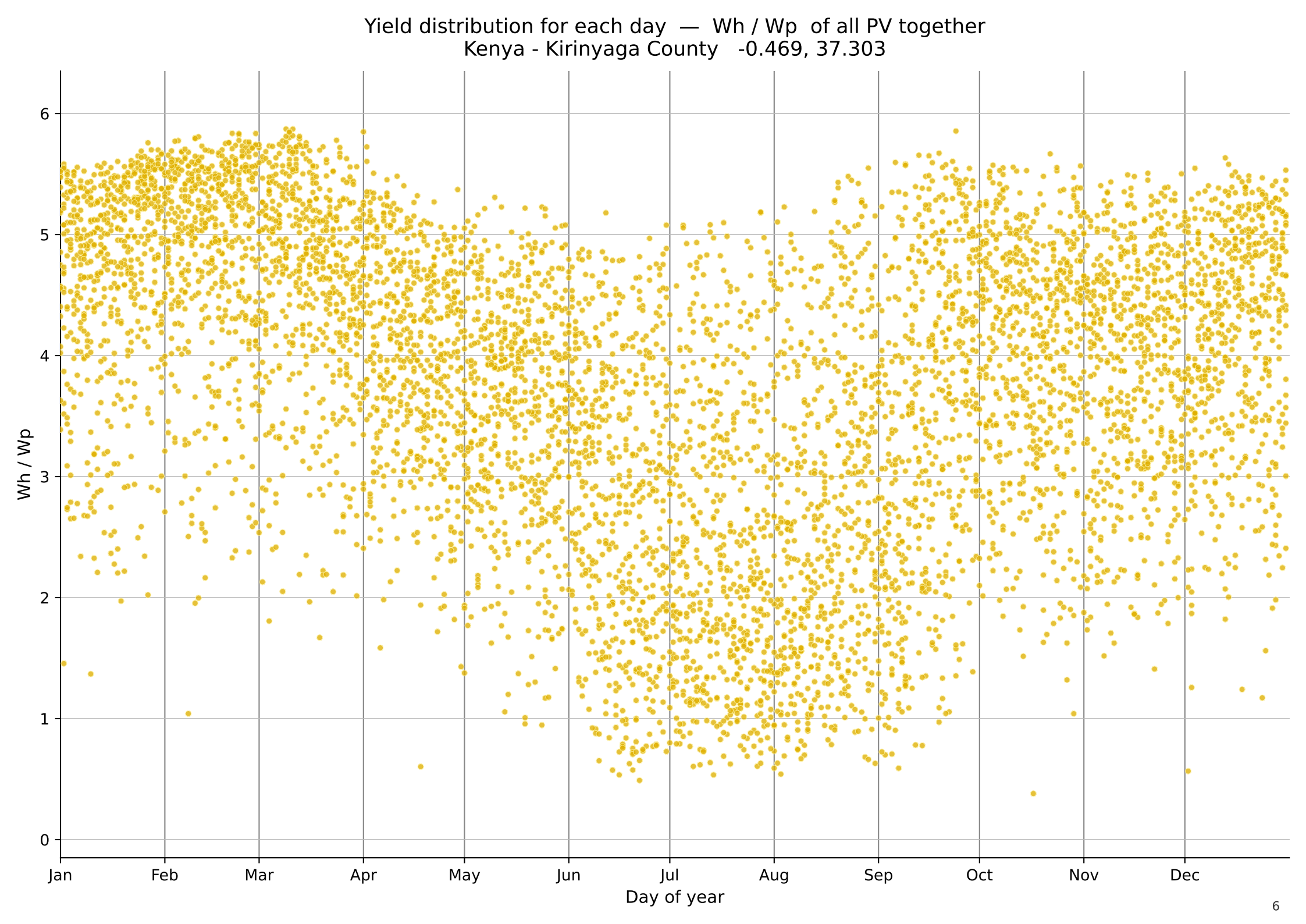
Of the record	Hours	Watts
98 %	10	4,689 W
96 %	122	4,593 W
94 %	468	4,498 W
92 %	1,155	4,402 W
90 %	2,110	4,306 W

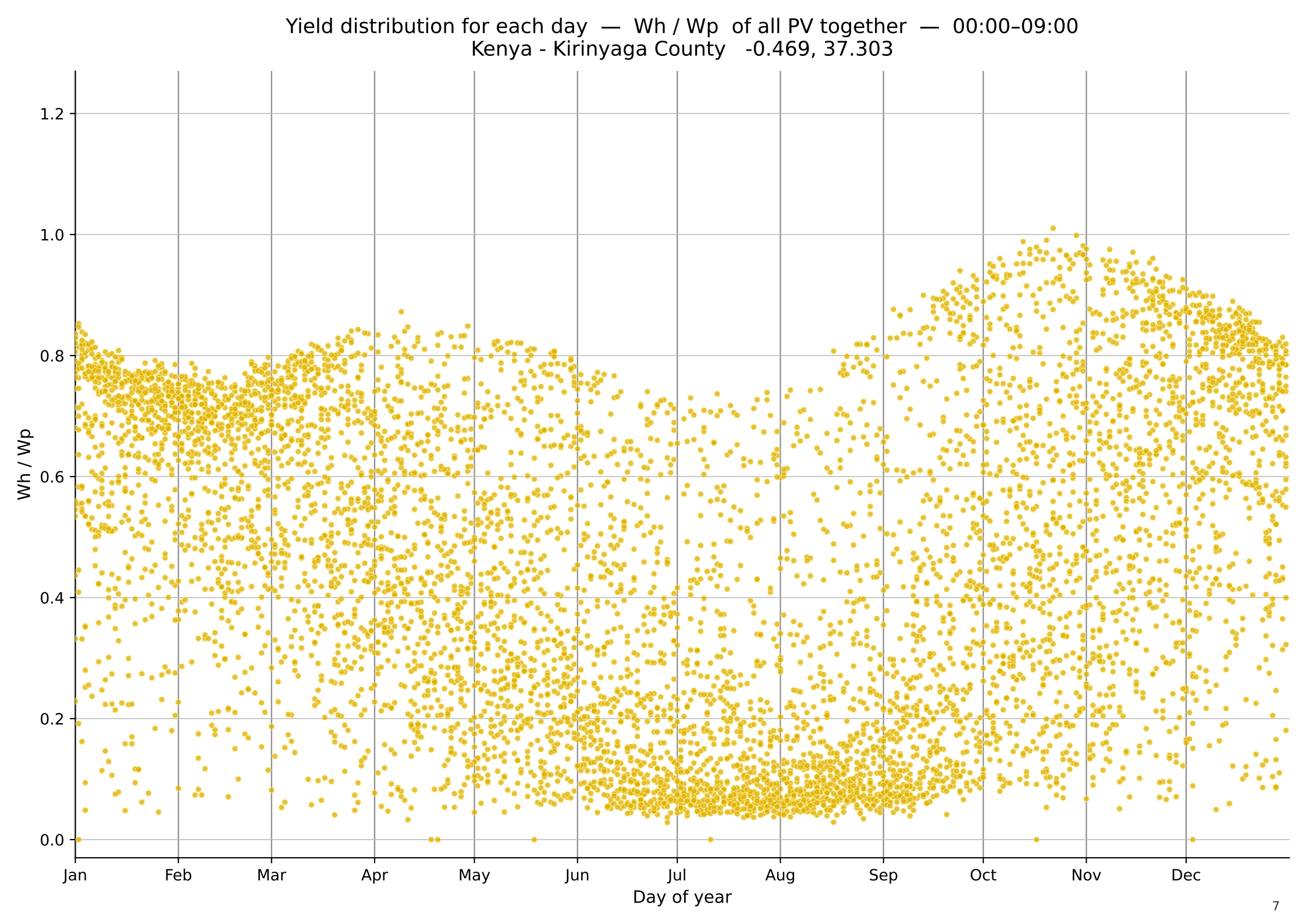
Record hour = 4,785 W combined.

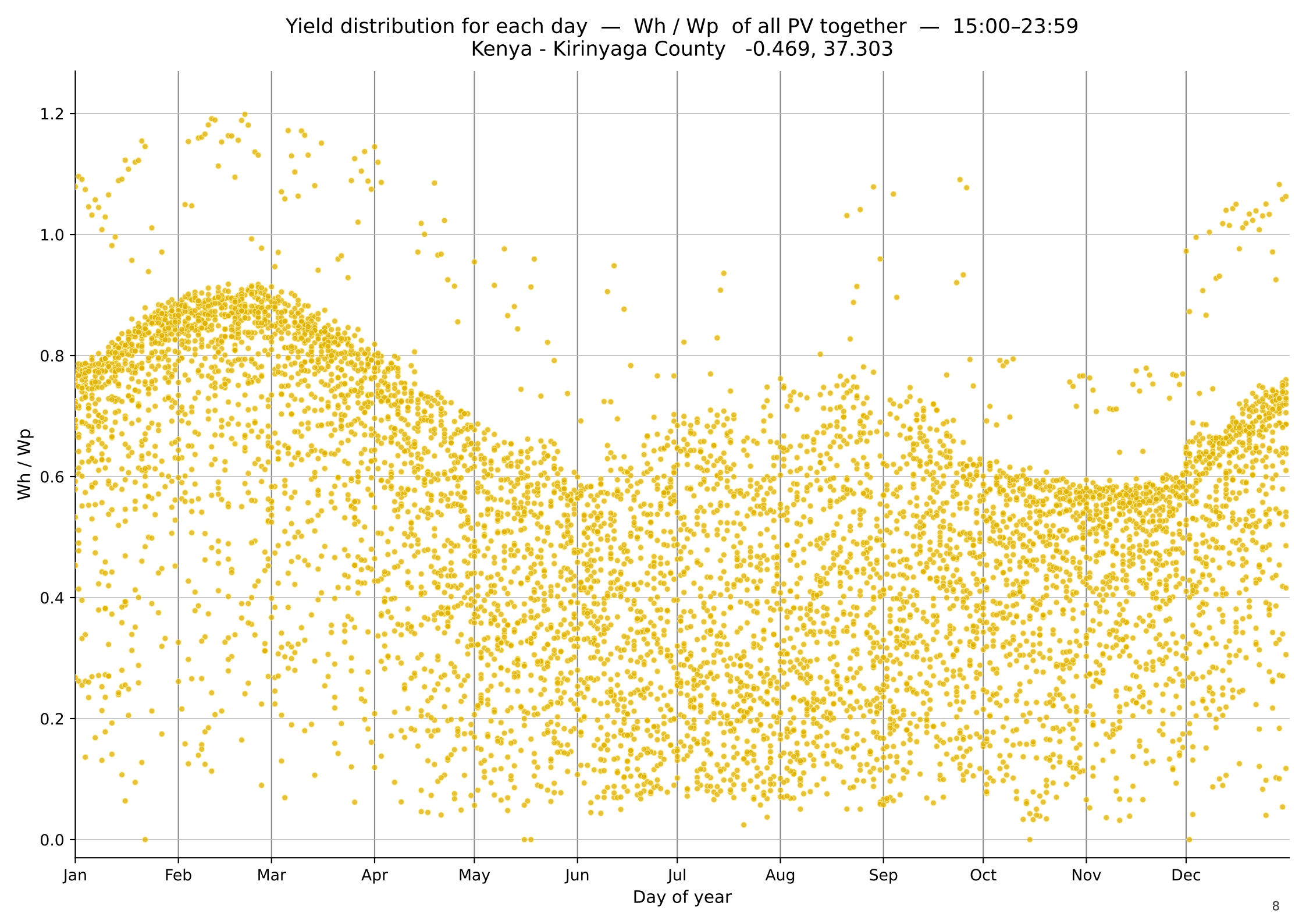
Records of each photovoltaic field
Kenya - Kirinyaga County -0.469, 37.303

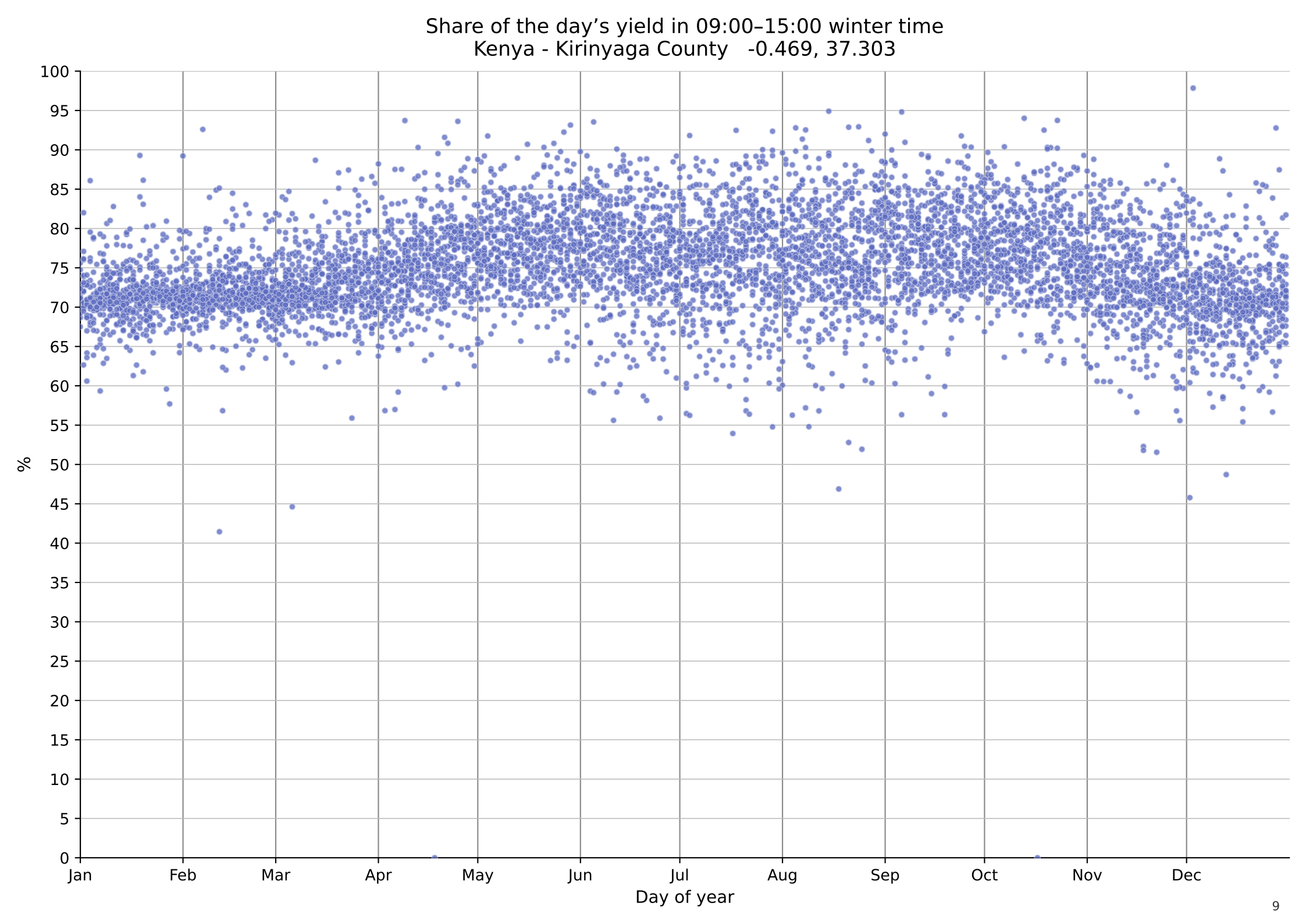
PV	Date	Watts	%	h ≥98%	h ≥96%	h ≥94%	h ≥92%	h ≥90%
roof east	2010-03-10 08:05	2,563	85.4	7	67	342	955	1911
roof west	2005-04-01 11:05	2,649	88.3	5	16	91	311	838

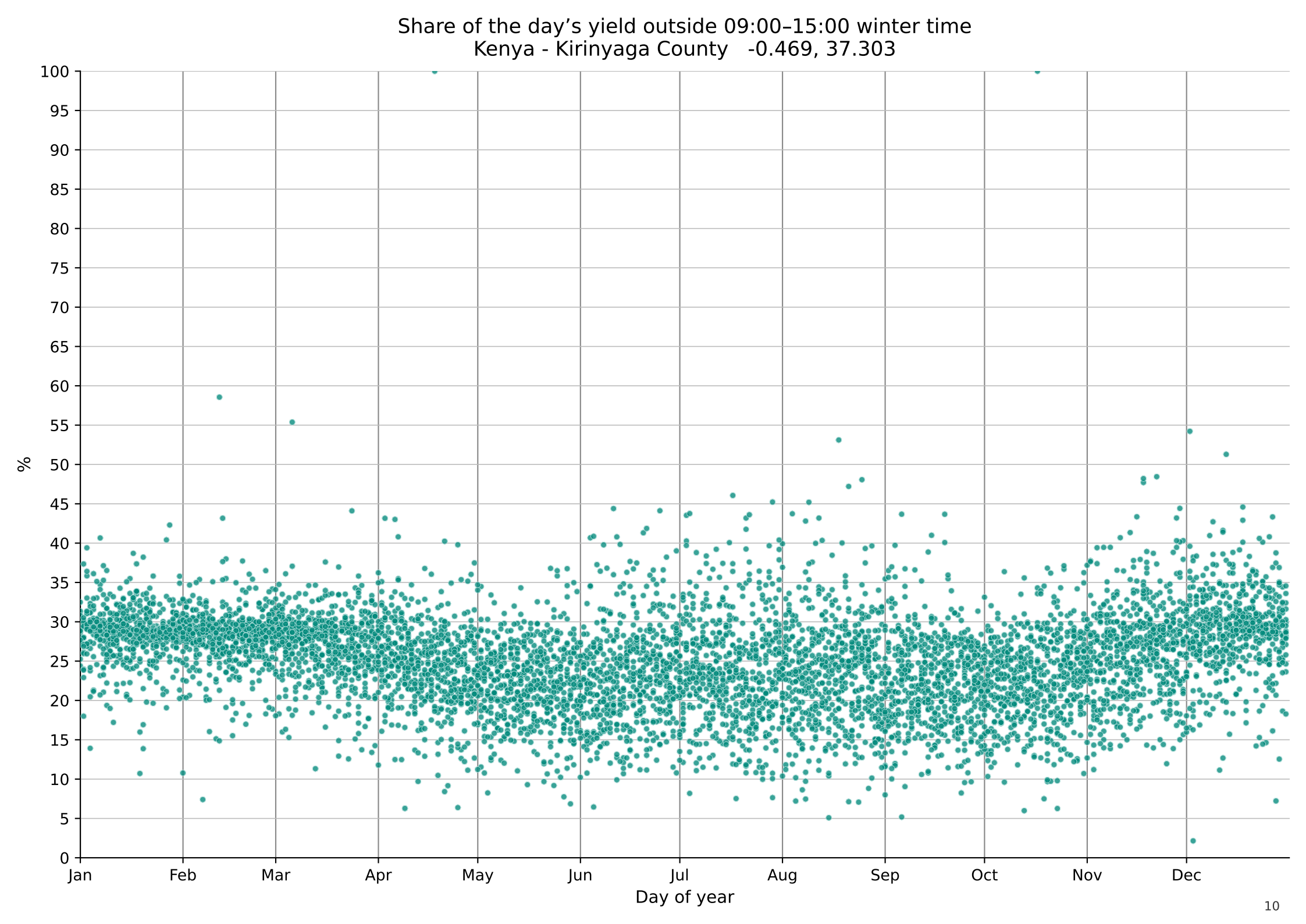
Watts is the highest hour of that field. % is of its own Wp. Hours are the count of hours at or above that share of its own record. Use this to size the MPPT or the inverter for that field.

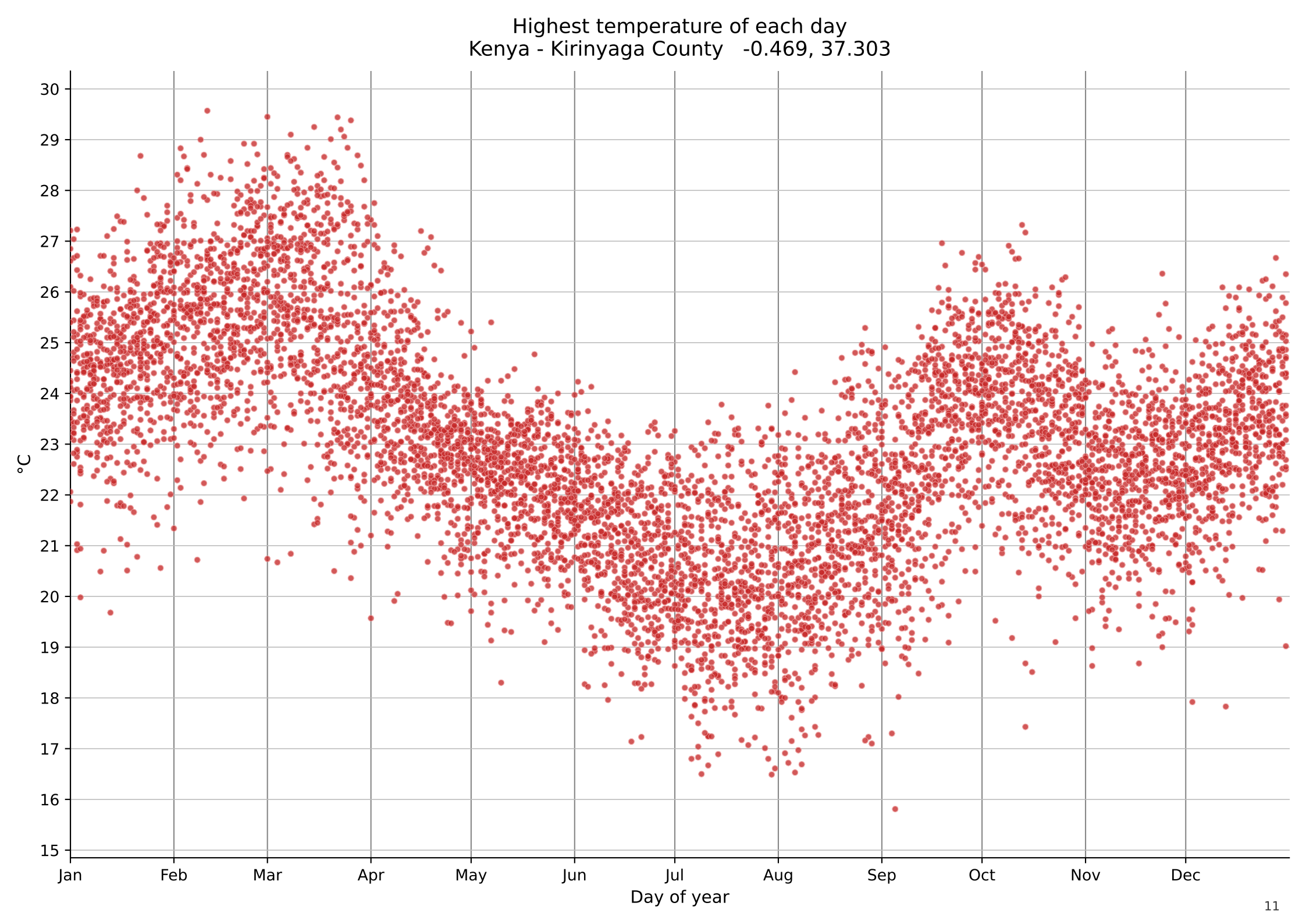

Yield distribution for each day — Wh / Wp of all PV together
Kenya - Kirinyaga County -0.469, 37.303
Wh / Wp
0
1
2
3
4
5
6
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

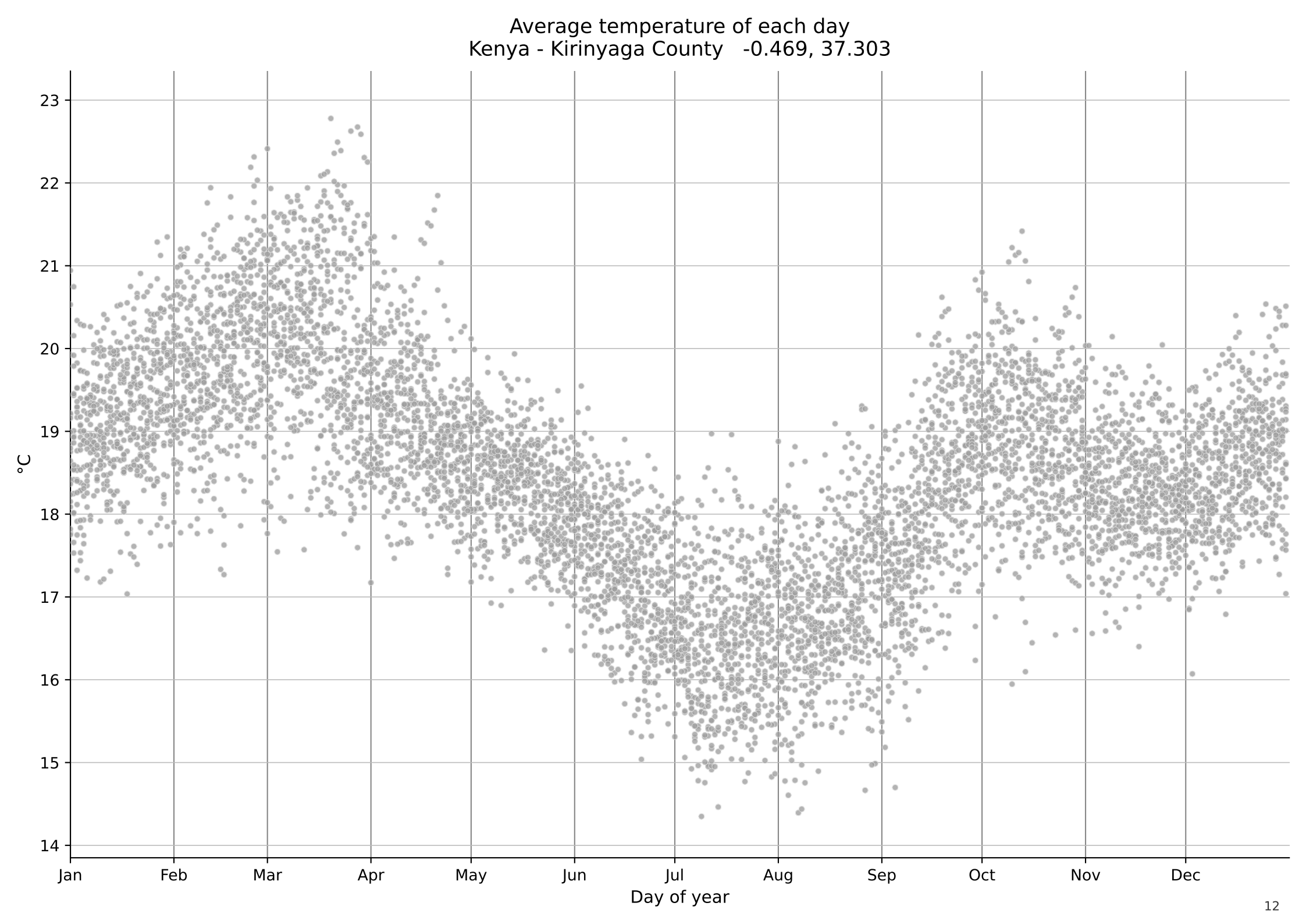

Yield distribution for each day — Wh / Wp of all PV together — 00:00–09:00
Kenya - Kirinyaga County -0.469, 37.303
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Wh / Wp
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

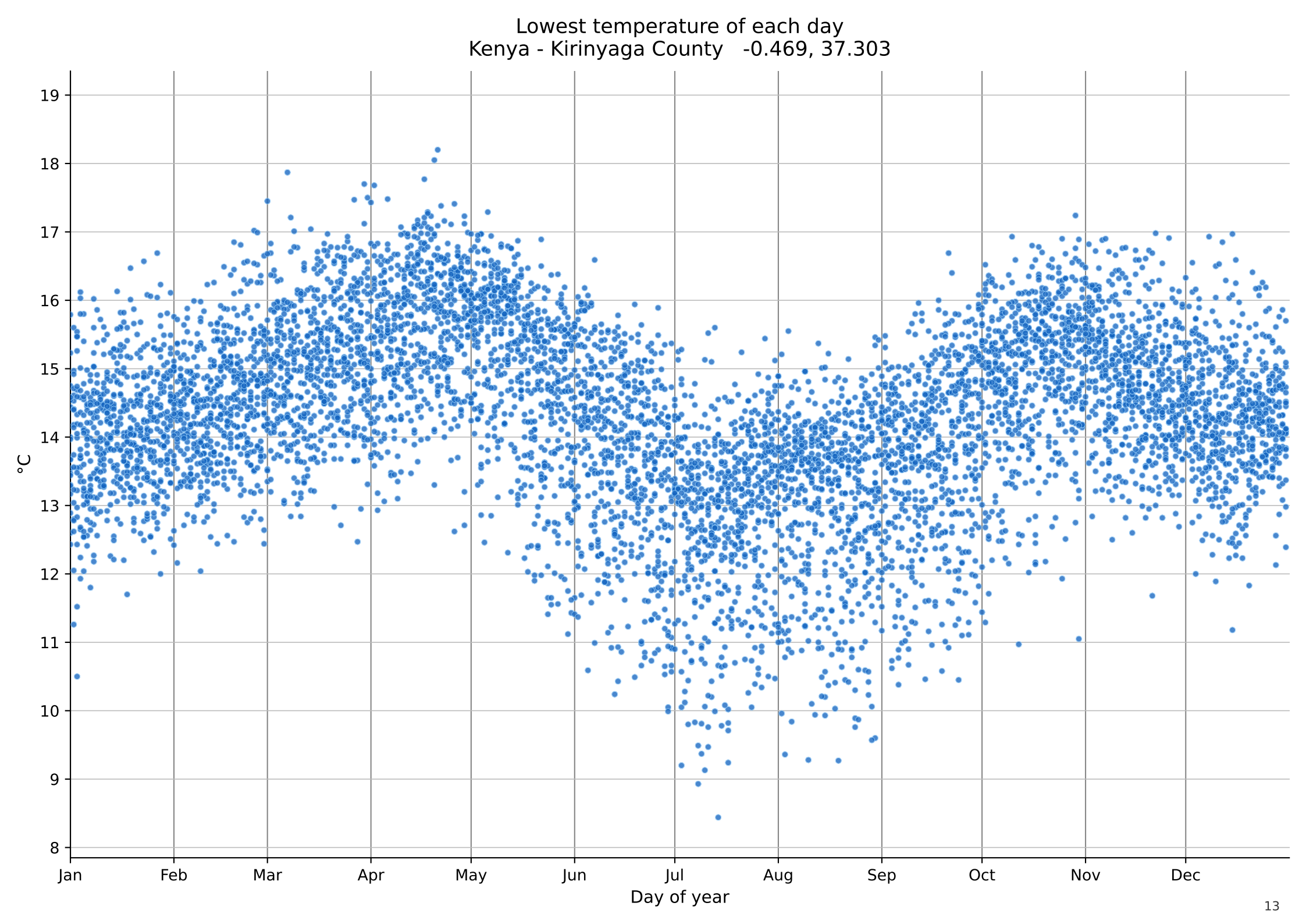

Yield distribution for each day — Wh / Wp of all PV together — 15:00–23:59
Kenya - Kirinyaga County -0.469, 37.303
Wh / Wp
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

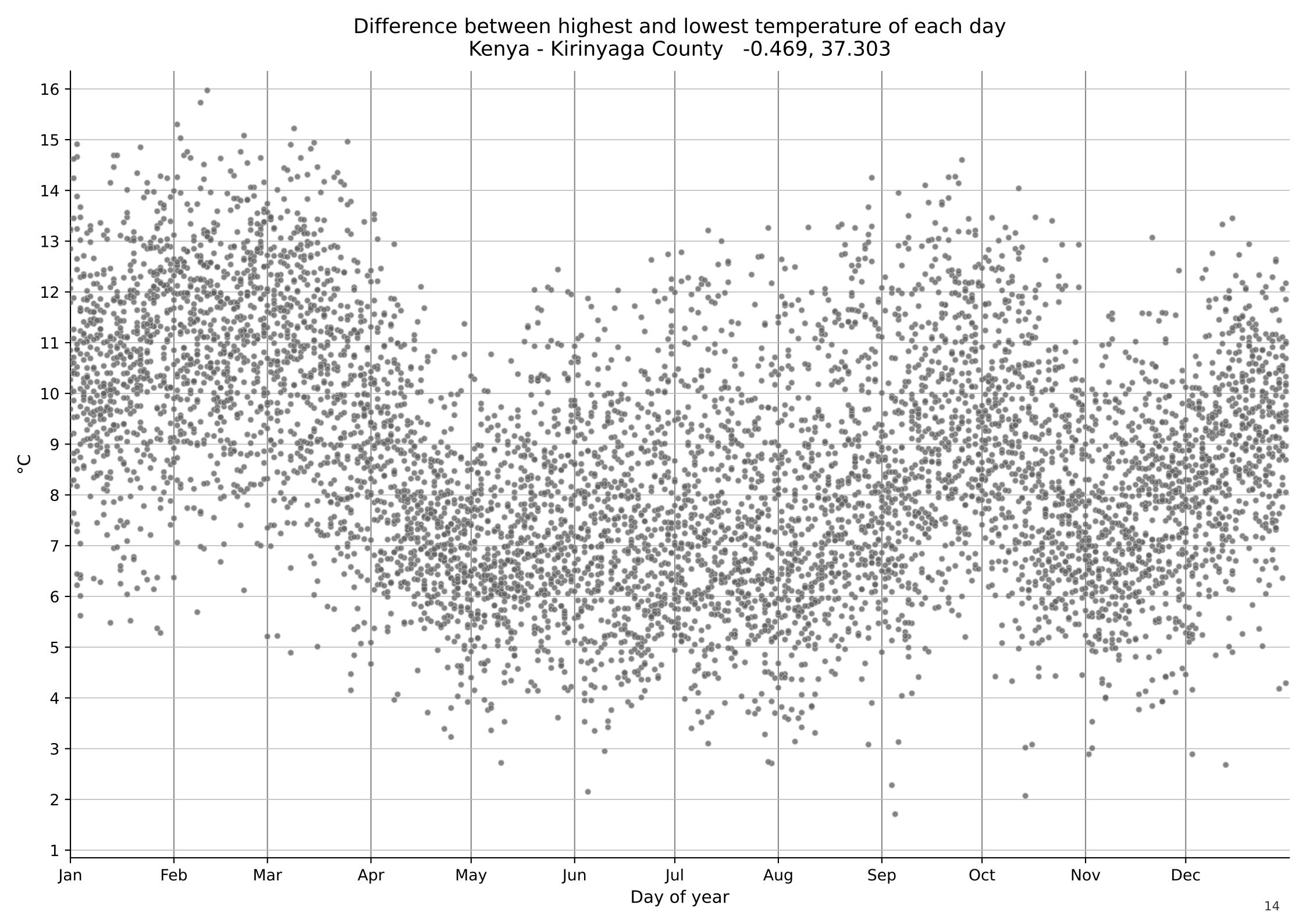

Share of the day’s yield in 09:00–15:00 winter time
Kenya - Kirinyaga County -0.469, 37.303
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
%
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Share of the day’s yield outside 09:00–15:00 winter time
Kenya - Kirinyaga County -0.469, 37.303
%
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Highest temperature of each day
Kenya - Kirinyaga County -0.469, 37.303
°C
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Average temperature of each day
Kenya - Kirinyaga County -0.469, 37.303
°C
23
22
21
20
19
18
17
16
15
14
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Lowest temperature of each day
Kenya - Kirinyaga County -0.469, 37.303
°C
19
18
17
16
15
14
13
12
11
10
9
8
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Difference between highest and lowest temperature of each day
Kenya - Kirinyaga County -0.469, 37.303
°C
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

Monthly and yearly specific yield (kWh/kWp = Wh/Wp)
Kenya - Kirinyaga County -0.469, 37.303

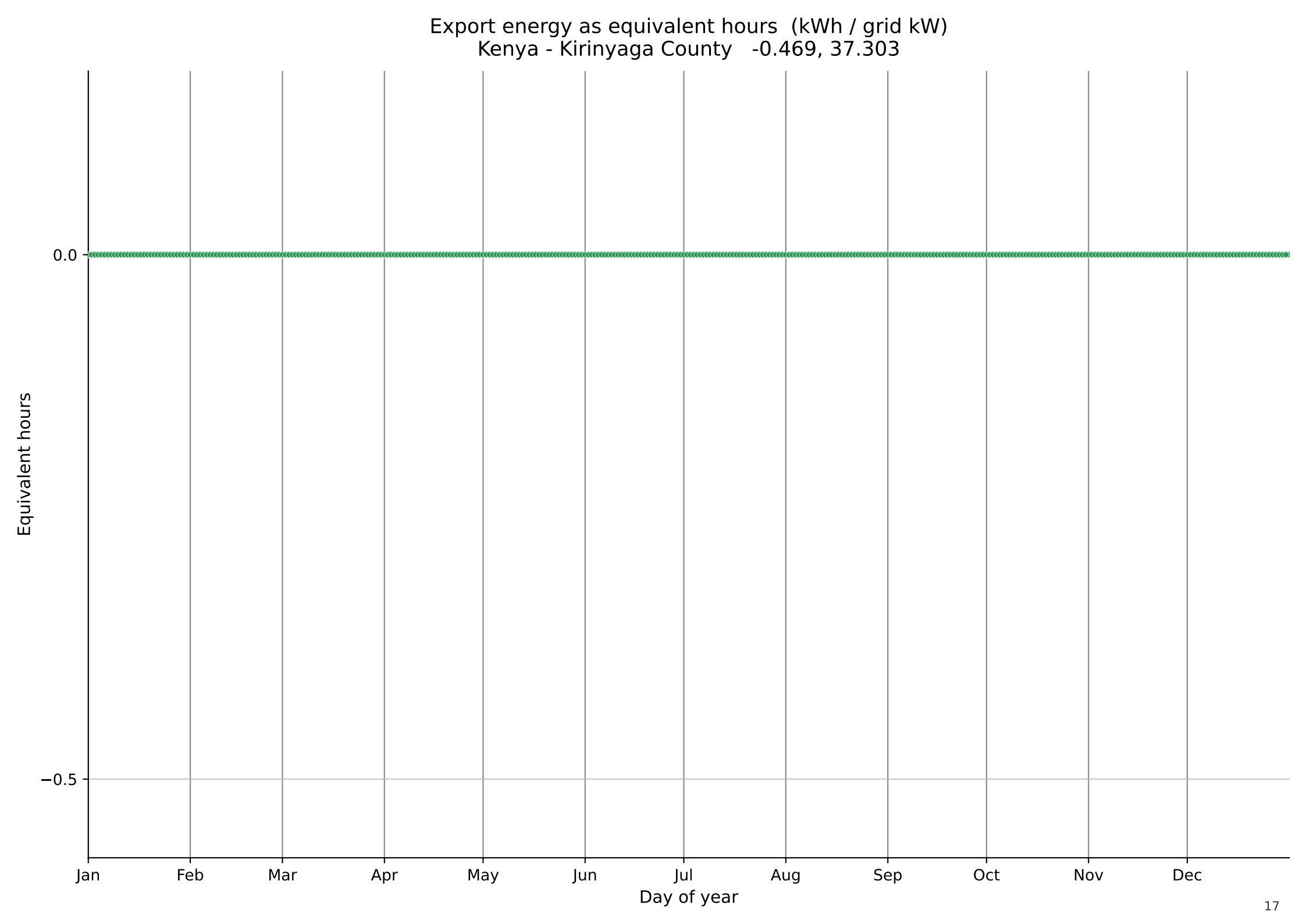
Month / year		roof east 25°/-90° 3,000 Wp	roof west 25°/90° 3,000 Wp	All together
January	Maximum	165.92	162.30	163.42
	average	144.95	144.06	144.50
	minimum	122.60	118.46	120.53
February	Maximum	148.02	156.25	146.31
	average	135.72	136.33	136.03
	minimum	114.92	114.53	116.87
March	Maximum	157.62	158.34	156.62
	average	140.38	143.45	141.92
	minimum	108.16	101.73	104.94
April	Maximum	132.29	141.53	136.91
	average	116.42	124.28	120.35
	minimum	96.04	96.98	96.51
May	Maximum	116.98	127.23	118.73
	average	107.42	113.49	110.45
	minimum	82.86	90.16	86.51
June	Maximum	108.04	111.57	109.81
	average	83.00	88.20	85.60
	minimum	62.72	70.12	66.42
July	Maximum	94.57	102.30	98.43
	average	72.12	77.91	75.01
	minimum	57.33	61.64	60.31
August	Maximum	95.14	103.52	99.33
	average	81.03	86.95	83.99
	minimum	64.97	66.28	65.63
September	Maximum	121.29	129.88	123.95
	average	100.40	106.63	103.51
	minimum	82.25	89.38	86.66
October	Maximum	133.05	139.19	134.51
	average	121.40	127.22	124.31
	minimum	112.48	106.78	111.62
November	Maximum	130.90	136.20	132.37
	average	115.65	119.03	117.34
	minimum	100.76	101.64	101.20
December	Maximum	152.51	165.10	153.57
	average	130.69	128.39	129.54
	minimum	115.38	104.52	109.95
All years	Maximum	1,430.2	1,530.5	1,455.2
	average	1,349.2	1,395.9	1,372.6
	minimum	1,265.7	1,319.2	1,292.5

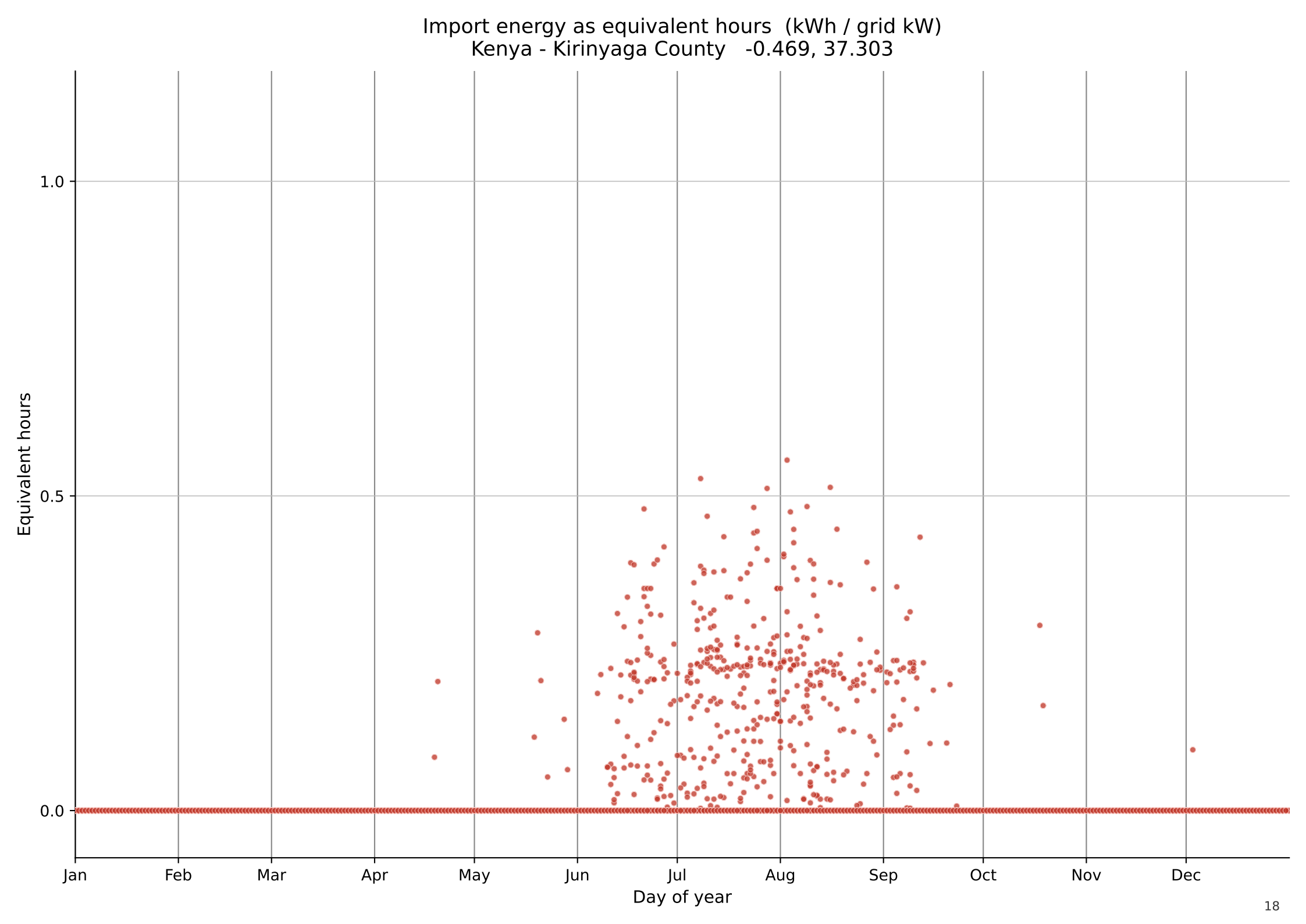
Highest combined yield hour: 2010-03-10 10:05 UTC 4,784.6 W (0.797 W/Wp) of 6,000 Wp installed. Use this hour to size battery charge power.

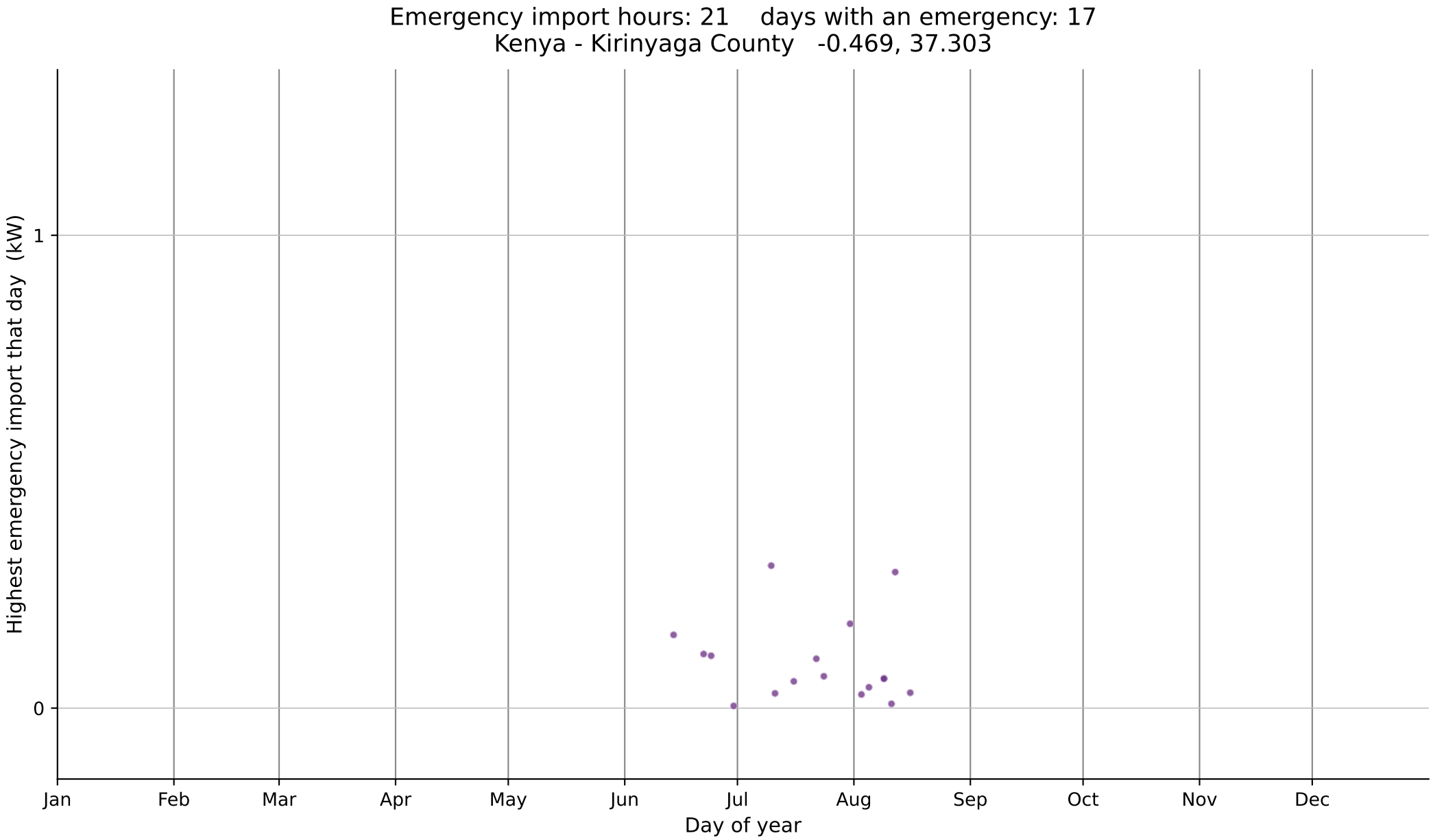
Monthly and yearly total yield (kWh)
Kenya - Kirinyaga County -0.469, 37.303

Month / year		roof east 25°/-90° 3,000 Wp	roof west 25°/90° 3,000 Wp	All together
January	Maximum	497.77	486.90	980.50
	average	434.84	432.17	867.01
	minimum	367.81	355.39	723.20
February	Maximum	444.06	468.74	877.85
	average	407.17	408.99	816.16
	minimum	344.75	343.60	701.20
March	Maximum	472.85	475.02	939.71
	average	421.15	430.36	851.51
	minimum	324.48	305.18	629.66
April	Maximum	396.87	424.59	821.46
	average	349.25	372.84	722.08
	minimum	288.13	290.94	579.07
May	Maximum	350.94	381.68	712.39
	average	322.25	340.47	662.72
	minimum	248.57	270.47	519.04
June	Maximum	324.13	334.72	658.85
	average	248.99	264.61	513.60
	minimum	188.17	210.35	398.52
July	Maximum	283.71	306.89	590.60
	average	216.35	233.72	450.07
	minimum	172.00	184.91	361.88
August	Maximum	285.43	310.55	595.98
	average	243.09	260.84	503.93
	minimum	194.92	198.85	393.77
September	Maximum	363.88	389.64	743.67
	average	301.20	319.89	621.09
	minimum	246.74	268.13	519.98
October	Maximum	399.16	417.57	807.05
	average	364.20	381.65	745.85
	minimum	337.44	320.33	669.74
November	Maximum	392.71	408.61	794.24
	average	346.96	357.10	704.06
	minimum	302.29	304.93	607.22
December	Maximum	457.52	495.29	921.40
	average	392.08	385.17	777.26
	minimum	346.15	313.56	659.70
All years	Maximum	4,290.7	4,591.6	8,731.3
	average	4,047.5	4,187.8	8,235.3
	minimum	3,797.1	3,957.6	7,754.7

Highest combined yield hour: 2010-03-10 10:05 UTC 4,784.6 W (0.797 W/Wp) of 6,000 Wp installed. Use this hour to size battery charge power.


Export energy as equivalent hours (kWh / grid kW)
Kenya - Kirinyaga County   -0.469, 37.303
0.0
−0.5
Equivalent hours
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Import energy as equivalent hours (kWh / grid kW)
Kenya - Kirinyaga County -0.469, 37.303
Equivalent hours
1.0
0.5
0.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year



Emergency = this hour’s grid import is above the month’s max import kW. 2 kW means up to 48 kWh in 24 hours. More than 2 kW in an hour is the higher grid fee.
Import inside that cap is not an emergency. Preferred cheap hours are 00:00–06:00 and 09:00–15:00 winter time.

Energy in kWh
Kenya - Kirinyaga County -0.469, 37.303

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export to grid													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	-0	-0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
month minimum	-0	-0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
day minimum	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Import from grid													
month Maximum	0	0	0	5	10	53	64	85	19	8	0	2	146
month average	0	0	0	0	1	14	33	25	6	0	0	0	80
month minimum	0	0	0	0	0	0	0	4	0	0	0	0	19
day Maximum	0.0	0.0	0.0	3.5	4.8	8.1	9.0	9.5	7.4	5.0	0.0	1.6	9.5
day average	0.0	0.0	0.0	0.0	0.0	0.5	1.1	0.8	0.2	0.0	0.0	0.0	0.2
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total energy used for house													
month Maximum	305	274	297	304	322	335	366	362	320	313	311	317	3,741
month average	293	257	281	291	312	321	351	343	310	299	301	306	3,664
month minimum	282	249	275	283	302	307	331	329	290	280	282	289	3,556
day Maximum	10.7	10.4	10.5	12.0	12.3	12.4	13.1	13.1	12.7	11.4	11.2	11.4	13.1
day average	9.4	9.1	9.1	9.7	10.1	10.7	11.3	11.1	10.3	9.6	10.0	9.9	10.0
day minimum	8.9	8.9	8.9	9.0	9.0	9.0	9.1	9.0	9.0	8.9	9.0	8.9	8.9

Month rows: kWh in that month. Day rows: best / average / worst day.
Total energy used for house = household + car + heating + cooling + DHW + direct electric.
PV not exported and not marked wasted is still in the battery, or could not leave because the grid was already full. It is not house use.

Energy by price
Kenya - Kirinyaga County -0.469, 37.303

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	-0	-0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
month minimum	-0	-0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
day minimum	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Import													
month Maximum	0	0	0	1	3	12	18	22	5	2	0	1	38
month average	0	0	0	0	0	4	9	7	2	0	0	0	21
month minimum	0	0	0	0	0	0	0	1	0	0	0	0	6
day Maximum	0.0	0.0	0.0	1.0	1.3	2.2	2.5	2.2	2.0	1.5	0.0	0.6	2.5
day average	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak grid fee													
month Maximum	0	0	0	4	6	8	9	8	6	4	0	5	34
month average	0	0	0	0	1	5	6	6	4	0	0	0	22
month minimum	0	0	0	0	0	0	0	6	0	0	0	0	12
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Import incl. peak fee													
month Maximum	0	0	0	5	8	19	25	29	11	6	0	6	70
month average	0	0	0	0	1	8	15	13	6	0	0	0	44
month minimum	0	0	0	0	0	0	0	7	0	0	0	0	20
day Maximum	0.0	0.0	0.0	1.0	1.3	2.2	2.5	2.2	2.0	1.5	0.0	0.6	2.5
day average	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Balance													
month Maximum	0	0	0	0	0	0	0	-7	0	0	0	0	-20
month average	-0	-0	0	-0	-1	-8	-15	-13	-6	-0	-0	-0	-44
month minimum	-0	-0	0	-5	-8	-19	-25	-29	-11	-6	-0	-6	-70
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	-0.0	-0.0	0.0	-0.0	-0.0	-0.1	-0.3	-0.2	-0.1	-0.0	-0.0	-0.0	-0.1
day minimum	-0.0	-0.0	0.0	-1.0	-1.3	-2.2	-2.5	-2.2	-2.0	-1.5	-0.0	-0.6	-2.5

Currency in Your units. Import and export use the cent/kWh of that hour. Peak fee 6.33 / kW / month is the highest import hour of the month (hourly stand-in for the 15-minute peak) and is added to that month's
Sell only when export is above 0. At 0 cent, export PV yield only, not the battery. Do not sell when the earning is negative.

Export in kWh during price hours
Kenya - Kirinyaga County -0.469, 37.303

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export total													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	-0	-0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
month minimum	-0	-0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
day minimum	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Export during high price hours													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	-0	-0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
month minimum	-0	-0	0	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
day minimum	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
Export during medium price hours													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	0	0	0	0	0	-0	0	0	0	0	-0	0	-0
month minimum	0	0	0	0	0	-0	0	0	0	0	-0	0	-0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	0.0	-0.0
day minimum	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	0.0	0.0	0.0	-0.0	0.0	-0.0
Export during low price hours													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	0	0	0	0	0	0	0	0	0	0	-0	-0	-0
month minimum	0	0	0	0	0	0	0	0	0	0	-0	-0	-0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0

kWh exported while that price band was active. Not the money. Winter time. High 06:00–09:00 and 17:00–20:00, sold first. Low 09:00–15:00, sold last. Medium is the rest.

Heat pump
Kenya - Kirinyaga County -0.469, 37.303

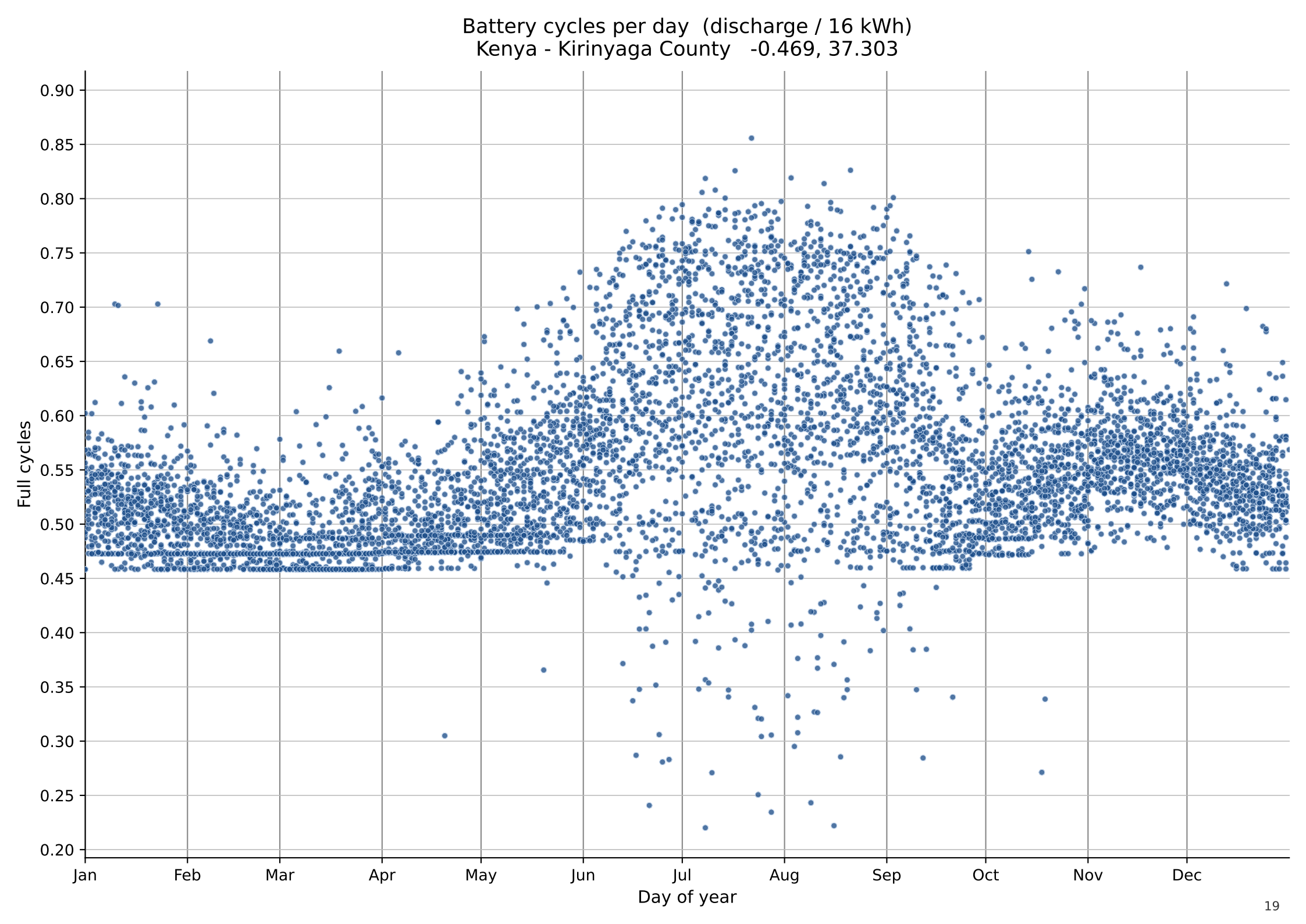
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Heating													
month Maximum	29	16	20	33	42	63	82	78	48	34	41	39	452
month average	17	6	5	21	32	49	68	61	37	21	31	28	376
month minimum	6	0	0	12	22	36	48	47	18	3	13	12	273
day Maximum	1.7	1.5	1.5	3.0	3.3	3.4	4.0	4.0	3.7	2.4	2.2	2.3	4.0
day average	0.5	0.2	0.2	0.7	1.0	1.6	2.2	2.0	1.2	0.7	1.0	0.9	1.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cooling													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	0	0	0	0	0	0	0	0	0	0	0	0	0
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DHW													
month Maximum	28	26	29	31	32	32	35	35	33	31	30	31	369
month average	28	25	28	31	32	32	35	34	32	30	29	30	366
month minimum	27	25	27	30	32	31	34	34	31	29	29	29	363
day Maximum	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.1	1.0	1.0	1.2
day average	0.9	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
day minimum	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.0	1.0	0.9	0.9	0.9	0.9
Direct electric													
month Maximum	0	0	0	0	0	1	5	2	1	0	0	0	8
month average	0	0	0	0	0	0	2	1	0	0	0	0	3
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	0
day Maximum	0.1	0.0	0.0	0.0	0.3	0.7	1.5	0.9	0.5	0.2	0.0	0.2	1.5
day average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

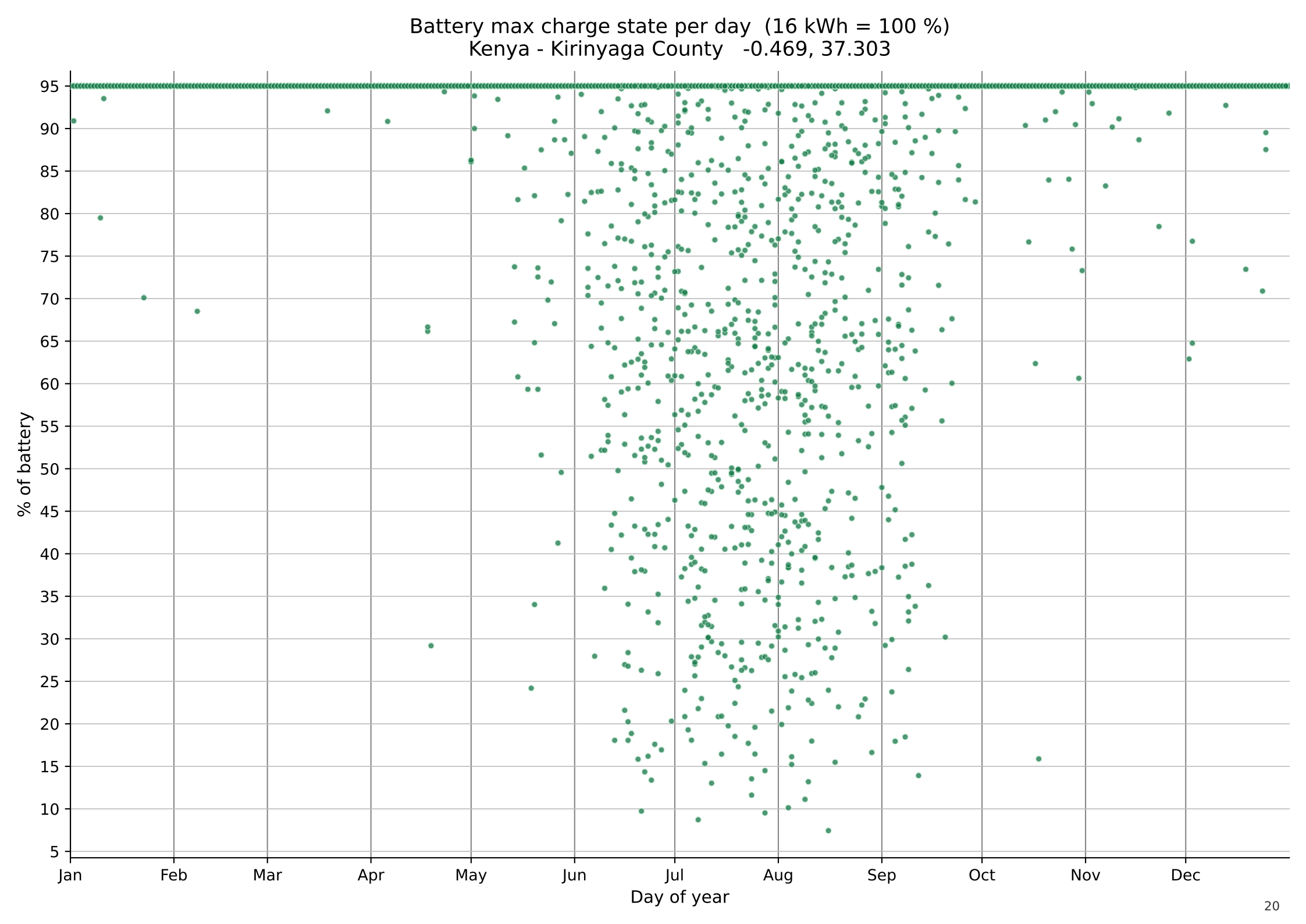
Heating, cooling and DHW are electricity. Direct electric is the part the heat pump could not cover.

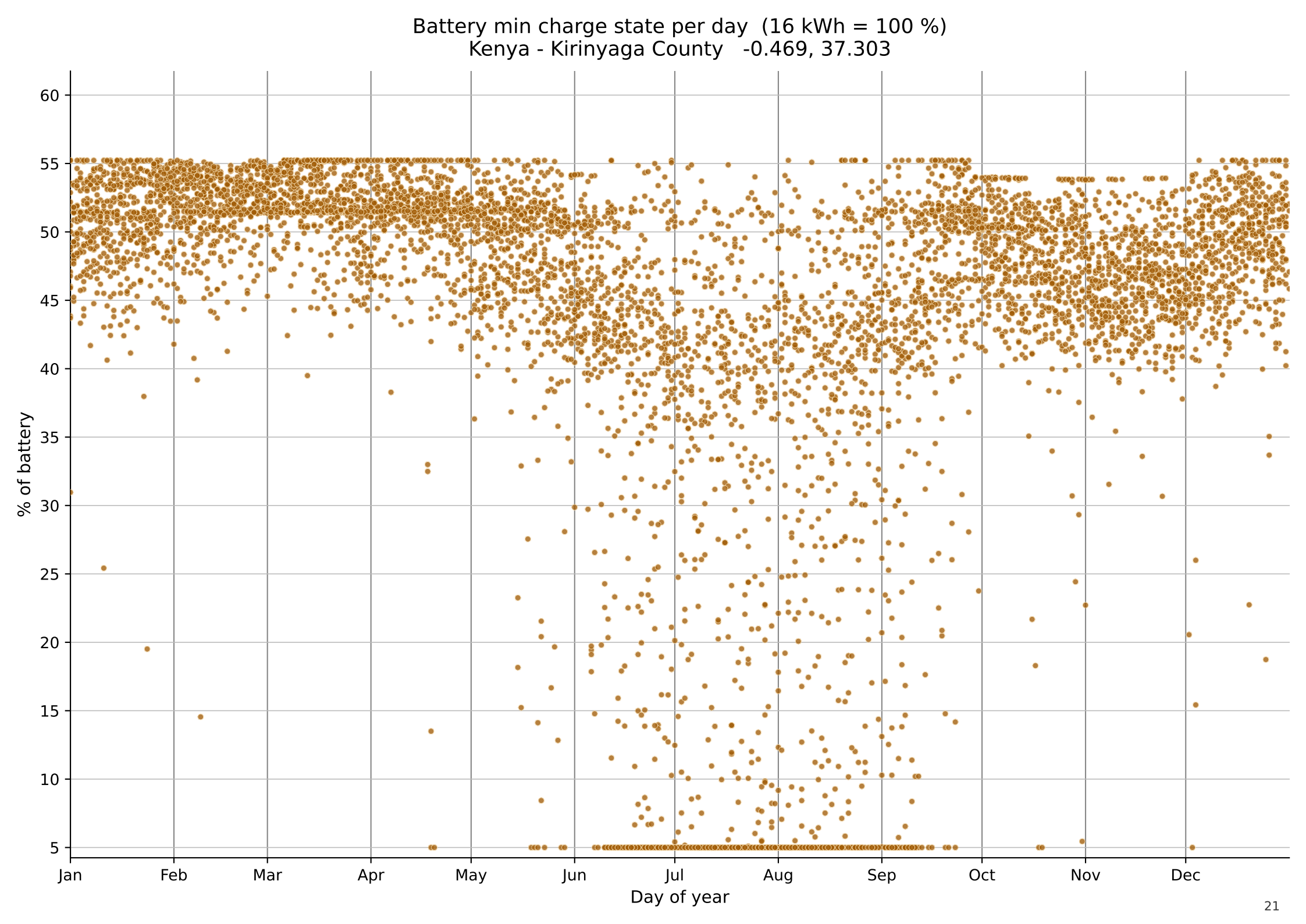
Battery
Kenya - Kirinyaga County -0.469, 37.303

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Wasted													
month Maximum	676	609	643	516	380	329	224	240	418	490	489	602	4,904
month average	552	539	550	410	329	183	108	158	292	424	380	447	4,371
month minimum	403	415	310	254	180	91	43	63	191	349	290	321	3,942
day Maximum	24.6	25.5	25.7	25.4	21.9	19.5	20.1	23.1	24.1	23.8	22.3	23.0	25.7
day average	17.8	19.1	17.7	13.7	10.6	6.1	3.5	5.1	9.7	13.7	12.7	14.4	12.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Full cycles													
month Maximum	17	15	17	16	18	19	21	21	19	18	18	18	205
month average	16	14	15	15	17	18	19	19	17	17	17	17	201
month minimum	15	13	14	14	16	16	18	18	15	15	15	15	193
day Maximum	0.7	0.7	0.7	0.7	0.7	0.8	0.9	0.8	0.8	0.8	0.7	0.7	0.9
day average	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.5
day minimum	0.5	0.5	0.5	0.3	0.4	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.2
Charge C													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	3
month average	0	0	0	0	0	0	0	0	0	0	0	0	3
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	3
day Maximum	0.3	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
day average	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
day minimum	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Discharge C													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	1
month average	0	0	0	0	0	0	0	0	0	0	0	0	1
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	1
day Maximum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
day average	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Wasted = PV left when the export price is negative and the battery is full. Full cycles = discharge kWh / 16 kWh. Battery export only into hours whose export price is above 0, highest price first. At 0 cent only P


Battery cycles per day (discharge / 16 kWh)
Kenya - Kirinyaga County -0.469, 37.303
Full cycles
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Battery max charge state per day (16 kWh = 100 %)
Kenya - Kirinyaga County -0.469, 37.303
% of battery
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Battery min charge state per day (16 kWh = 100 %)
Kenya - Kirinyaga County -0.469, 37.303
% of battery
60
55
50
45
40
35
30
25
20
15
10
5
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year