Scenario — PV
GEMINI-60-house-part-of-a-settlement China - K2 35.882, 76.513

Name	Slope °	Azimuth °	Wp	Wall d/h m	Face	Bifacial	Wp counted
Roof East	22	-90	19,800	—	front	—	yes
Roof West	22	90	19,800	—	front	—	yes
Terrace railing south	90	0	4,620	5 / 4	front	—	yes
Terrace railing north	90	180	4,620	5 / 4	front	—	yes
share central structure east part	8	-90	20,460	—	front	—	yes
share central strucure west part	8	90	20,460	—	front	—	yes
Total counted			89,760				

Location: Sure nobody lives there; nobody will live there.
Database PVGIS-ERA5 2005–2023 loss 14 % azimuth 0 = south, 90 = west, −90 = east.
Price bands and charts use UTC+5 from longitude (15° per hour), not the political time zone.
Peak hour 2013-05-31 11:30 local (06:30 UTC) 81,431 W 0.907 W/Wp of 89,760 Wp.
Database gaps: 0 days with 0 yield while the sun reached the horizon at noon. 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.

Scenario — house, heat pump, battery
GEMINI-60-house-part-of-a-settlement China - K2 35.882, 76.513

Chapter	Parameter	Value
Building	Design out / in / heat	-10.0 °C / 20.0 °C / 1,600 W
	Heat on / cool on / ground	22.0 °C / 25.0 °C / 10.0 °C
	Curve / flow min / max	0.3 / 25.0 °C / 55.0 °C
	Thermal mass of the house	25.0 kWh/K
	Household only	4.0 kWh/day
DHW	Litres at 40 °C / tank	200 L tank 42.0 °C 8–18 h
	Water out of the pipe Q1–Q4	1 °C 1 °C 1 °C 1 °C
Heat pump	Source	air and ground
	COP −10/0/10 @ 35 °C	2.4 3.4 4.5
	COP −10/0/10 @ 50 °C	1.9 2.6 3.3
	kW −10/0/10 @ 35 °C	4.0 5.0 6.0
	kW −10/0/10 @ 50 °C	3.5 4.5 5.0
Battery	kWh / C-rate / SOC min–max–start	257.2 kWh C 0.5 5 / 95 / 50 %
	Nameplate	—
	Charge / discharge η	95 % / 90 %
Grid	Inverter / grid connection	44.0 kW / 44.0 kW
	Max export	44.0 kW
	Import cap Jan–Jun kW	Jan 2 Feb 2 Mar 2 Apr 2 May 2 Jun 2
	Import cap Jul–Dec kW	Jul 2 Aug 2 Sep 2 Oct 2 Nov 2 Dec 2
Cars	Lunch DC / night AC	0.0 kWh @ 100.0 kW night 10.0 kWh @ 11.0 kW

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

Records 1–10 contribution of each PV
China - K2 35.882, 76.513

PV	2013-05-31 06:30	2021-04-27 06:30	2018-04-29 06:30	2005-04-19 06:30	2023-05-10 06:30	2013-05-16 06:30	2023-04-24 06:30	2015-05-03 06:30	2021-04-24 06:30	2023-05-11 06:30
Roof East	19,574	19,408	19,408	19,378	19,352	19,208	19,304	19,197	19,282	19,294
Roof West	18,519	18,202	18,225	18,032	18,277	18,277	18,057	18,160	18,041	18,240
Terrace railing south	1,778	2,466	2,394	2,714	2,087	2,208	2,544	2,437	2,539	2,067
Terrace railing north	426	247	225	235	258	693	236	571	215	262
share central structure east part	20,762	20,591	20,604	20,525	20,567	20,316	20,470	20,312	20,447	20,499
share central strucure west part	20,371	20,144	20,165	20,026	20,169	19,970	20,007	19,927	19,987	20,109
Watt at record	81,431	81,057	81,021	80,910	80,710	80,672	80,617	80,604	80,512	80,472
Percent of installed peak	90.7	90.3	90.3	90.1	89.9	89.9	89.8	89.8	89.7	89.7

Values are watts at that hour. Date and time are UTC. Record 81,431 W (90.7 % of 89,760 Wp).

Hours at or above a share of the record
China - K2 35.882, 76.513

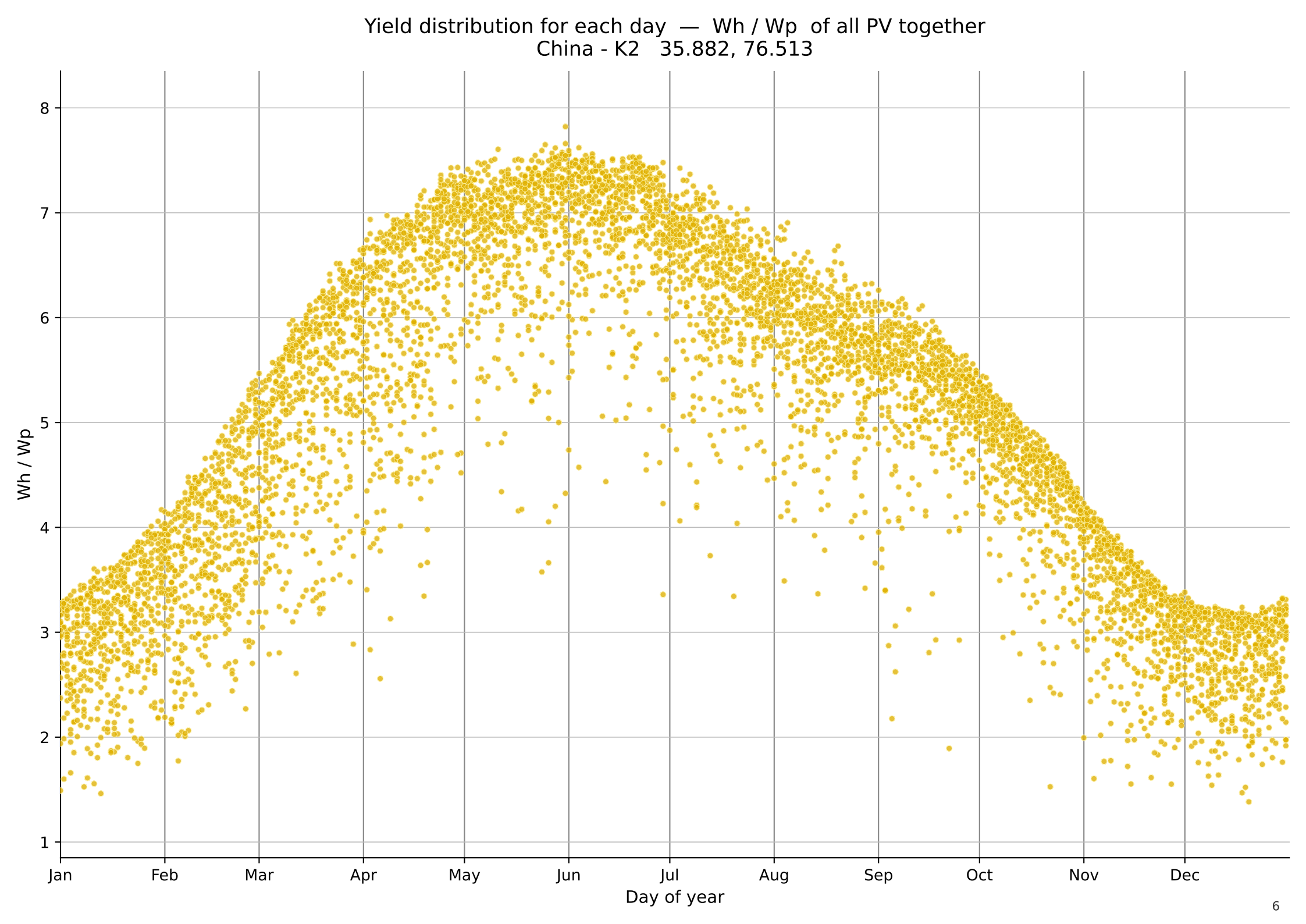
Of the record	Hours	Watts
98 %	40	79,803 W
96 %	279	78,174 W
94 %	970	76,545 W
92 %	2,013	74,917 W
90 %	3,171	73,288 W

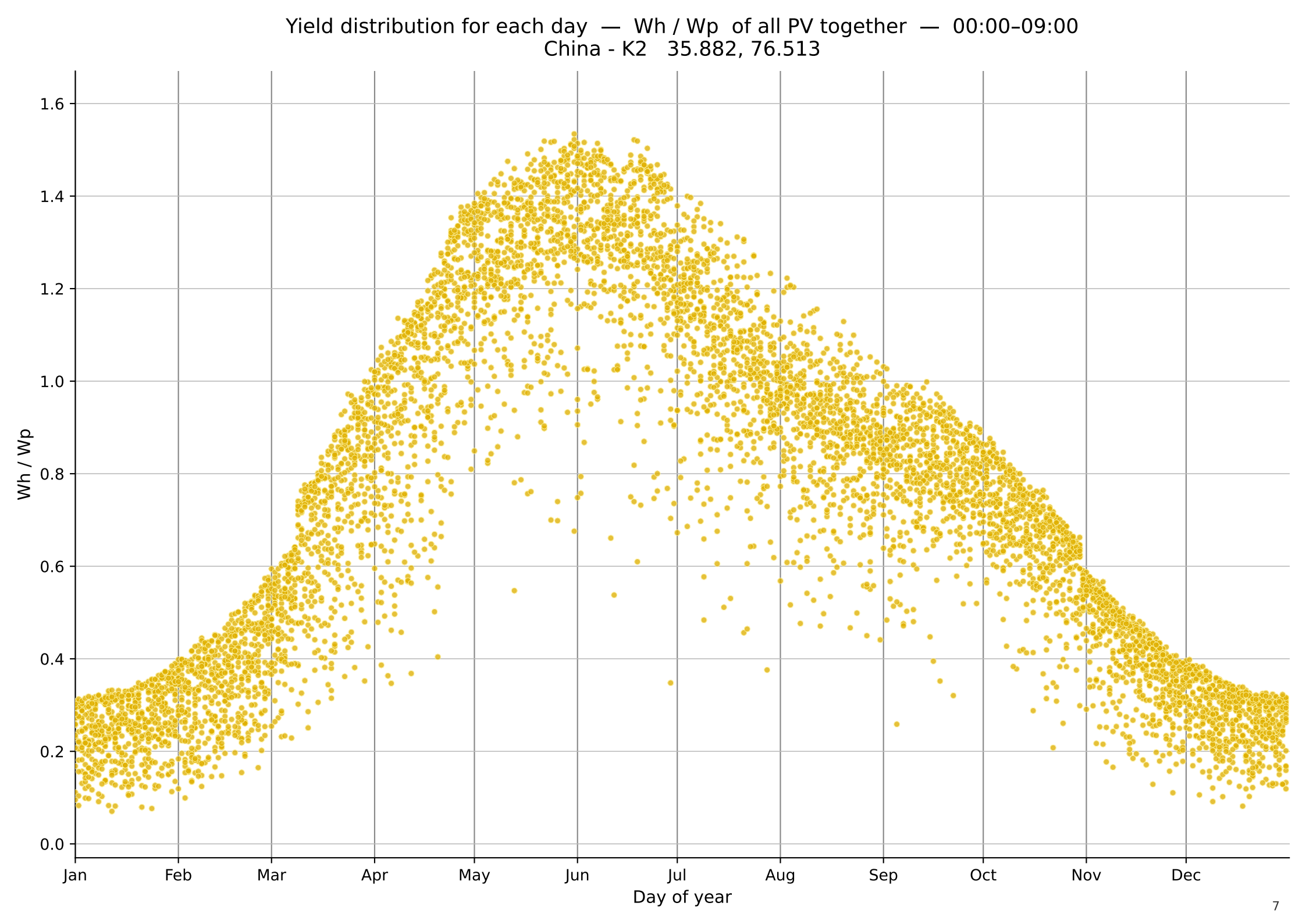
Record hour = 81,431 W combined.

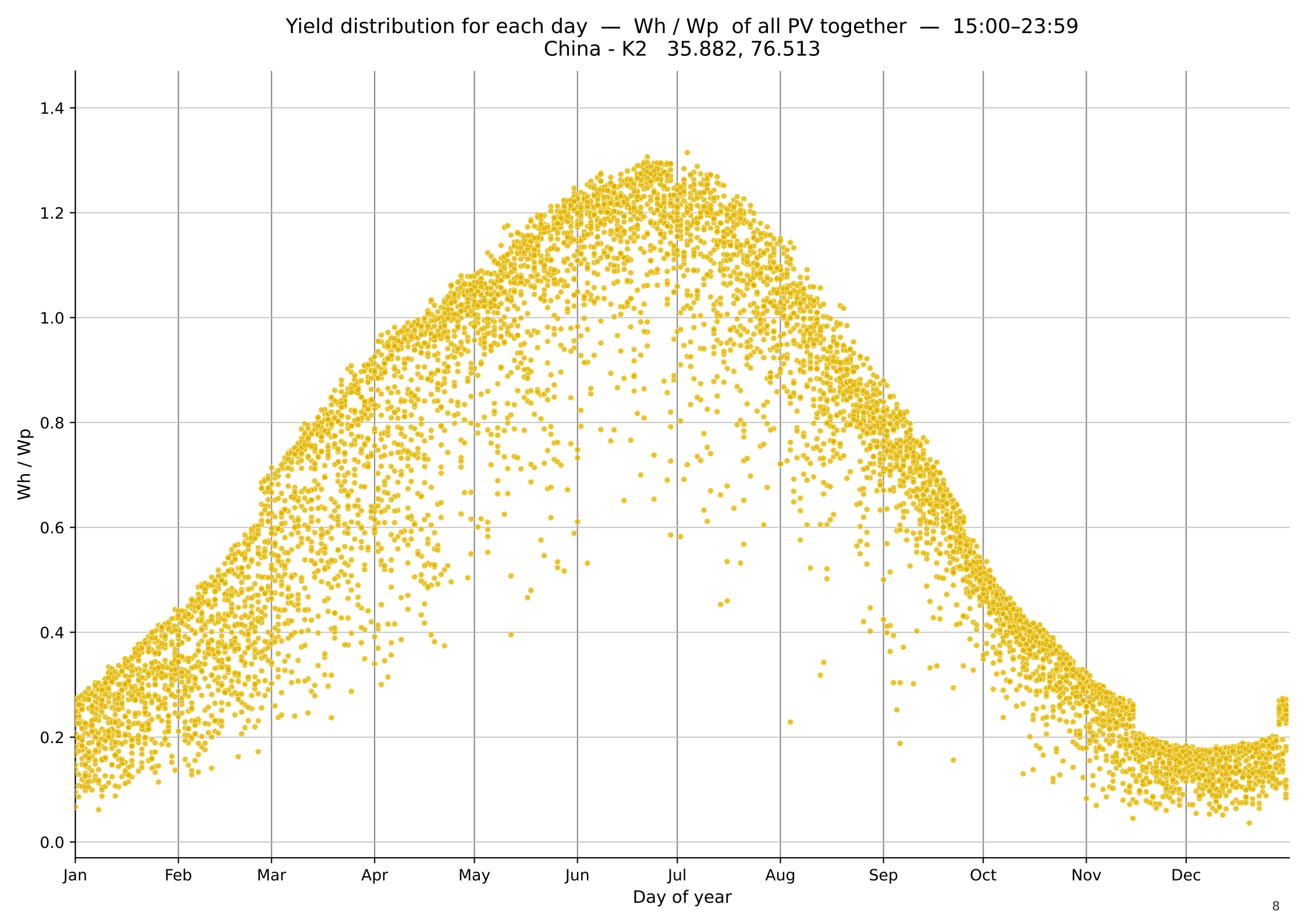
Records of each photovoltaic field
China - K2 35.882, 76.513

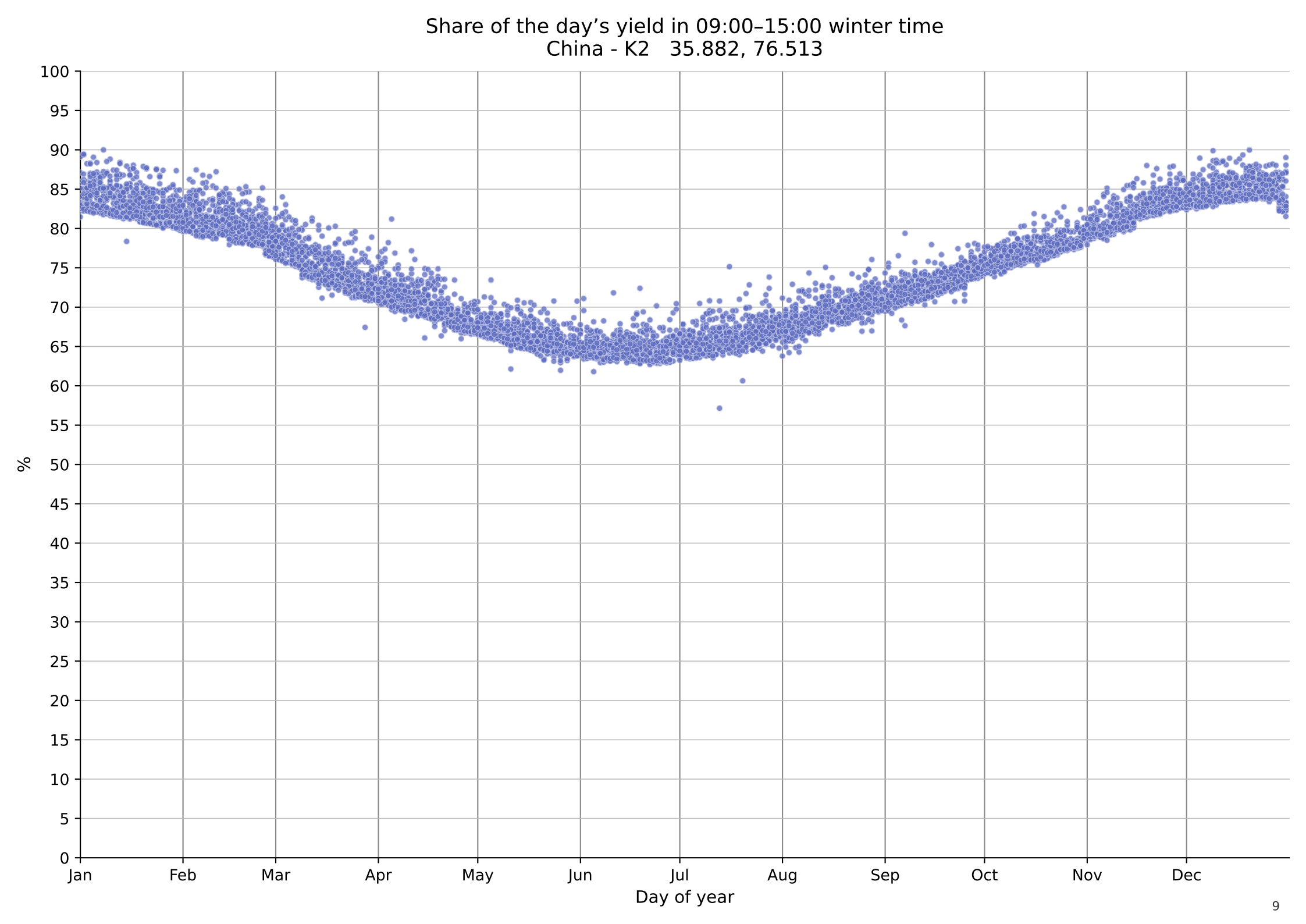
PV	Date	Watts	%	h ≥98%	h ≥96%	h ≥94%	h ≥92%	h ≥90%
Roof East	2018-04-29 05:30	20,451	103.3	32	209	618	1372	2497
Roof West	2023-05-10 08:30	19,920	100.6	38	251	861	1768	2817
Terrace railing south	2013-02-08 07:30	4,578	99.1	2	18	59	129	249
Terrace railing north	2006-04-11 06:30	1,468	31.8	1	2	5	9	20
share central structure east part	2013-05-31 06:30	20,762	101.5	29	240	830	1796	2986
share central strucure west part	2013-05-31 07:30	20,658	101.0	17	159	690	1691	2854

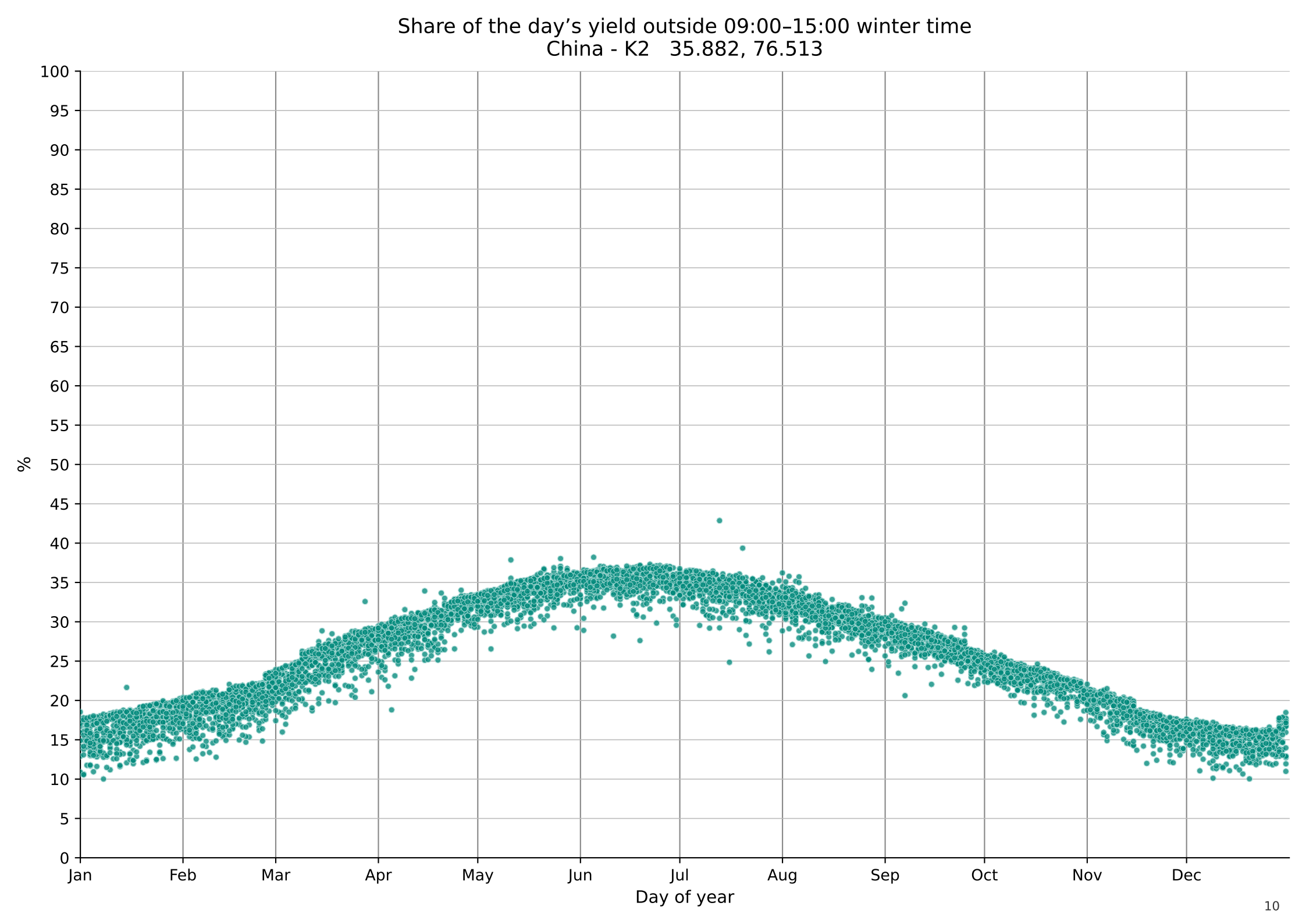
Watts is the highest hour of that field. % is of its own Wp. Hours are the count of hours at or above that share of its own record. Use this to size the MPPT or the inverter for that field.

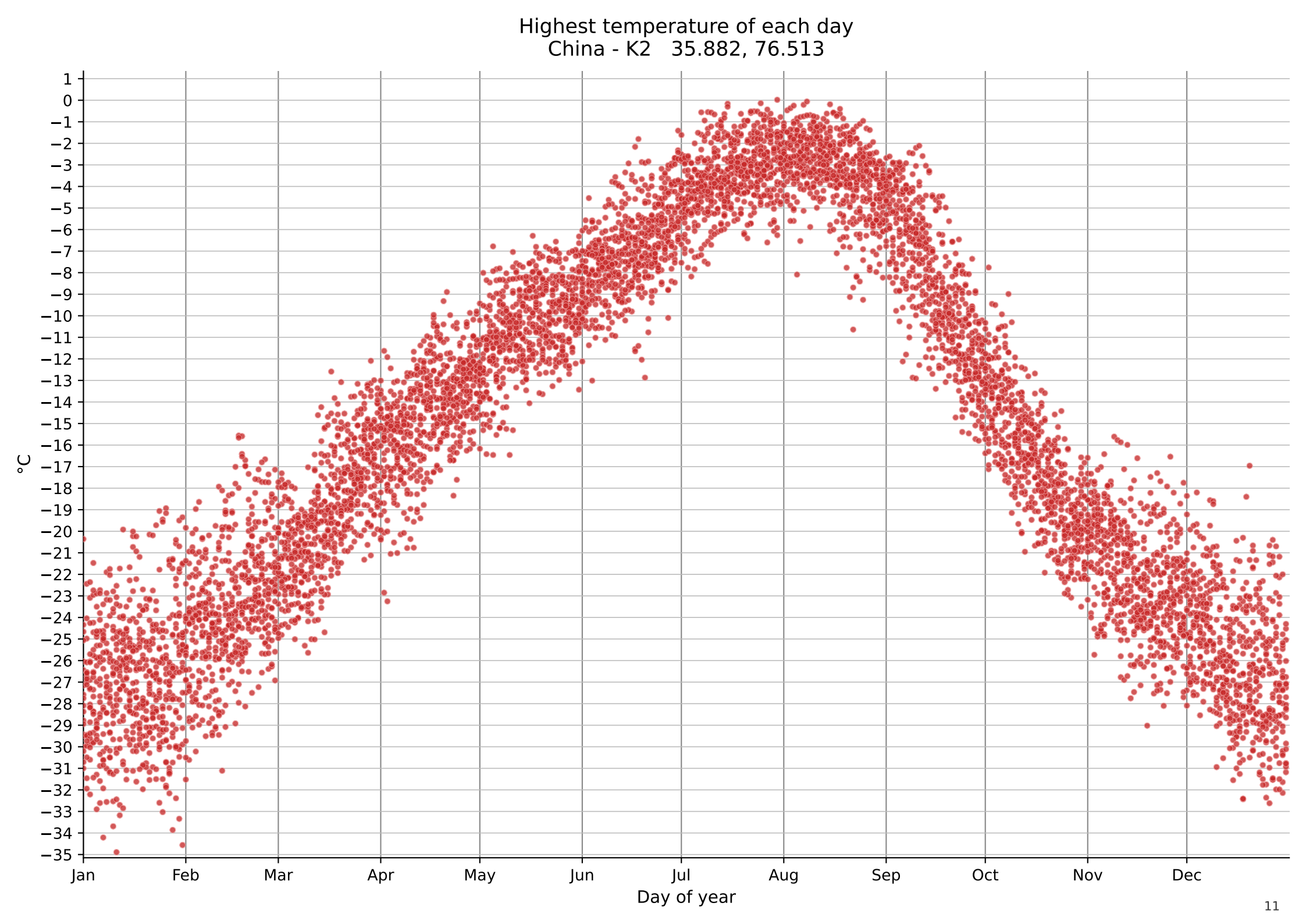

Yield distribution for each day — Wh / Wp of all PV together
China - K2 35.882, 76.513
Wh / Wp
8
7
6
5
4
3
2
1
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

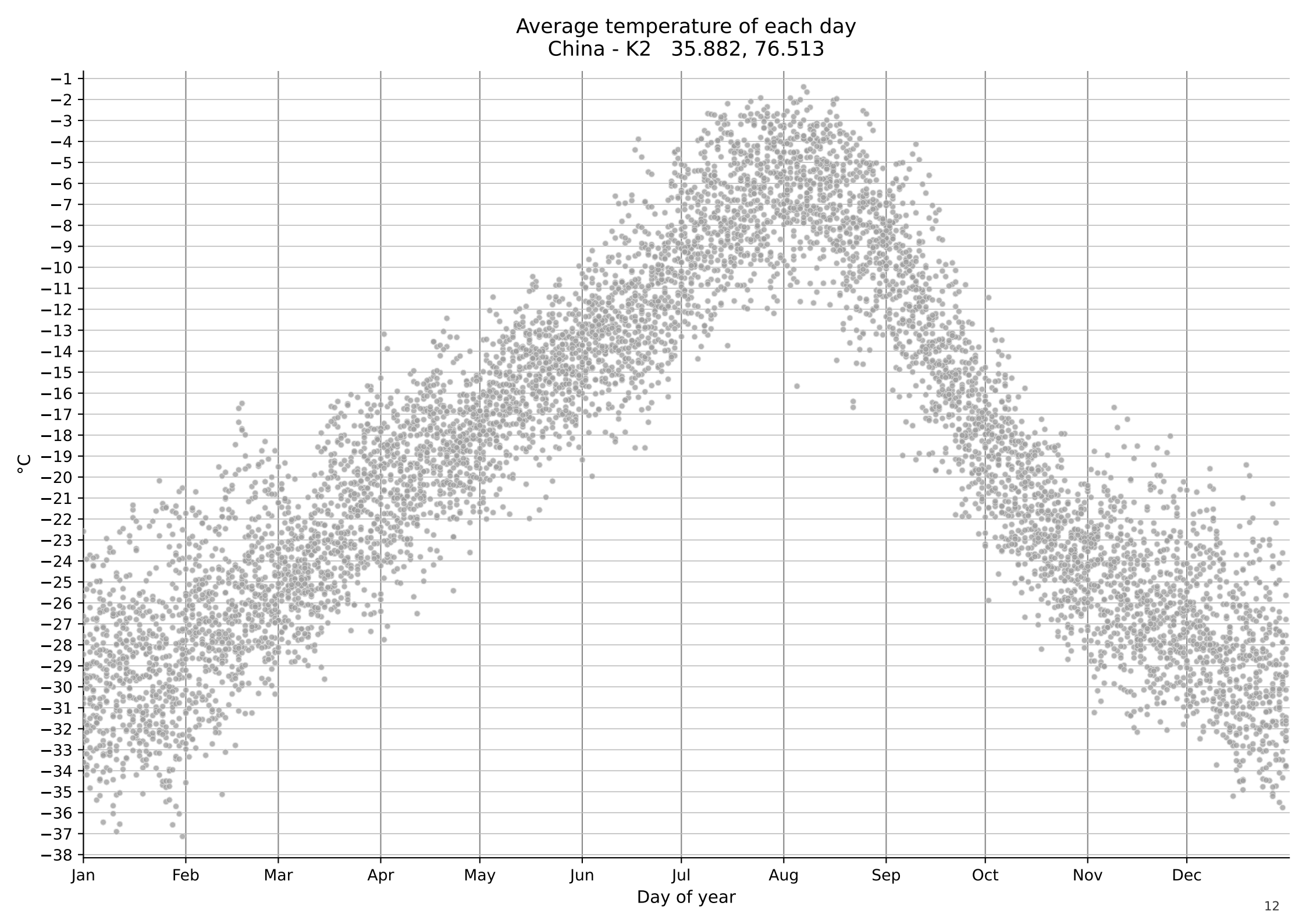

Yield distribution for each day — Wh / Wp of all PV together — 00:00–09:00
China - K2 35.882, 76.513
Wh / Wp
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

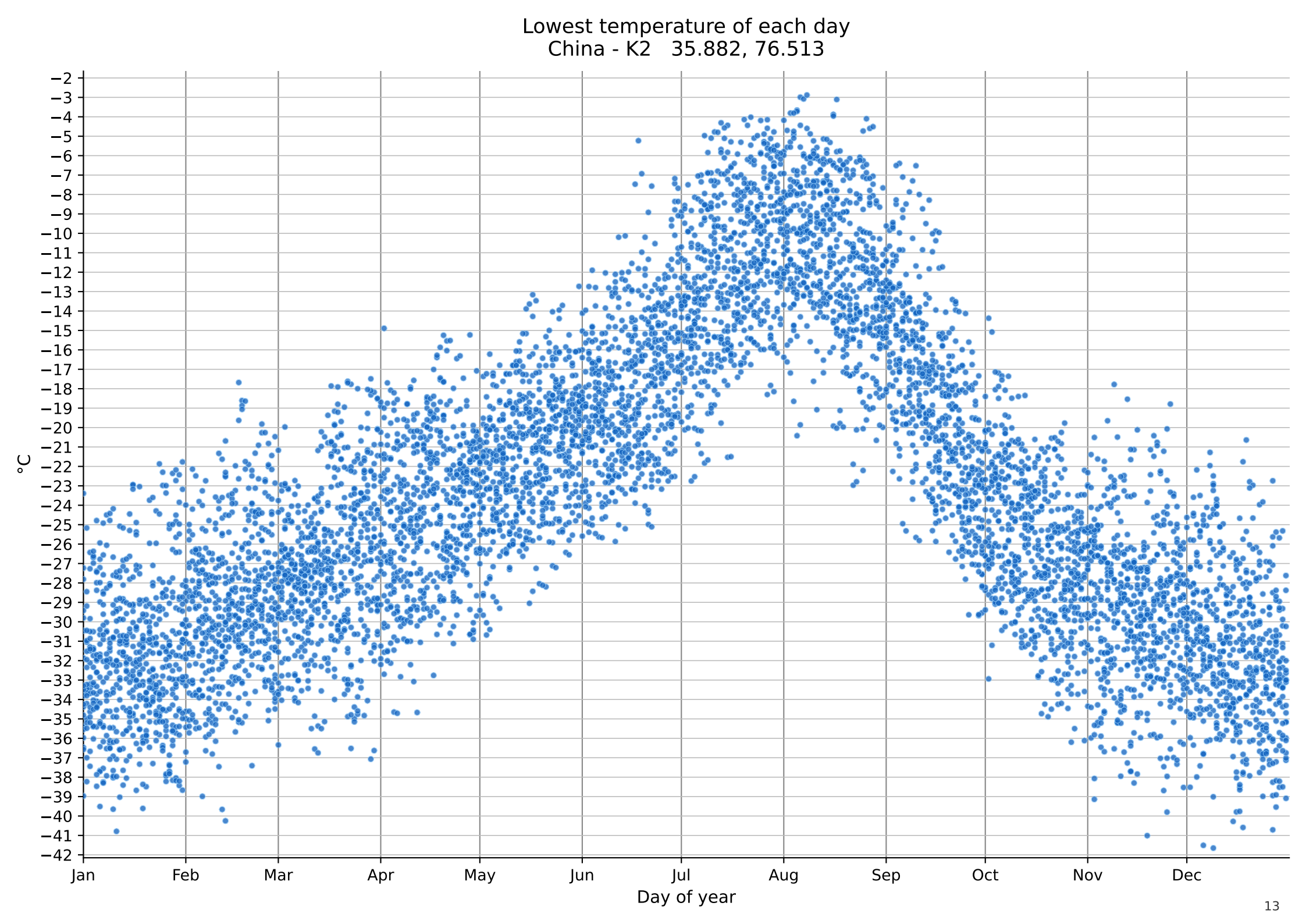

Yield distribution for each day — Wh / Wp of all PV together — 15:00–23:59
China - K2 35.882, 76.513
Wh / Wp
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

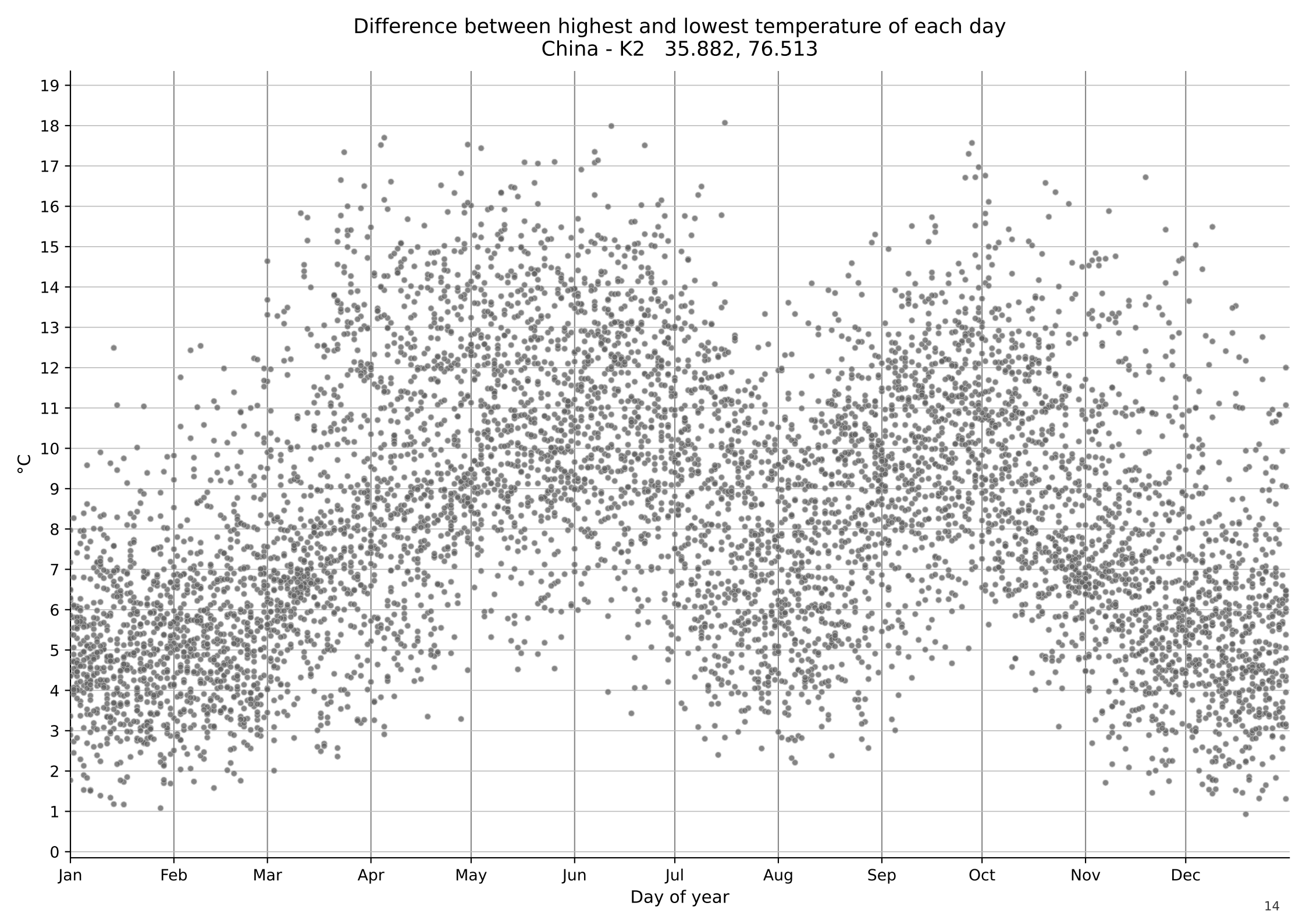

Share of the day’s yield in 09:00–15:00 winter time
China - K2 35.882, 76.513
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
%
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Share of the day’s yield outside 09:00–15:00 winter time
China - K2 35.882, 76.513
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
China - K2 35.882, 76.513
°C
1
0
−1
−2
−3
−4
−5
−6
−7
−8
−9
−10
−11
−12
−13
−14
−15
−16
−17
−18
−19
−20
−21
−22
−23
−24
−25
−26
−27
−28
−29
−30
−31
−32
−33
−34
−35
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Average temperature of each day
China - K2 35.882, 76.513
°C
−1
−2
−3
−4
−5
−6
−7
−8
−9
−10
−11
−12
−13
−14
−15
−16
−17
−18
−19
−20
−21
−22
−23
−24
−25
−26
−27
−28
−29
−30
−31
−32
−33
−34
−35
−36
−37
−38
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Lowest temperature of each day
China - K2 35.882, 76.513
°C
−2
−3
−4
−5
−6
−7
−8
−9
−10
−11
−12
−13
−14
−15
−16
−17
−18
−19
−20
−21
−22
−23
−24
−25
−26
−27
−28
−29
−30
−31
−32
−33
−34
−35
−36
−37
−38
−39
−40
−41
−42
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Difference between highest and lowest temperature of each day
China - K2 35.882, 76.513
°C
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

Monthly and yearly specific yield (kWh/kWp = Wh/Wp)
China - K2 35.882, 76.513

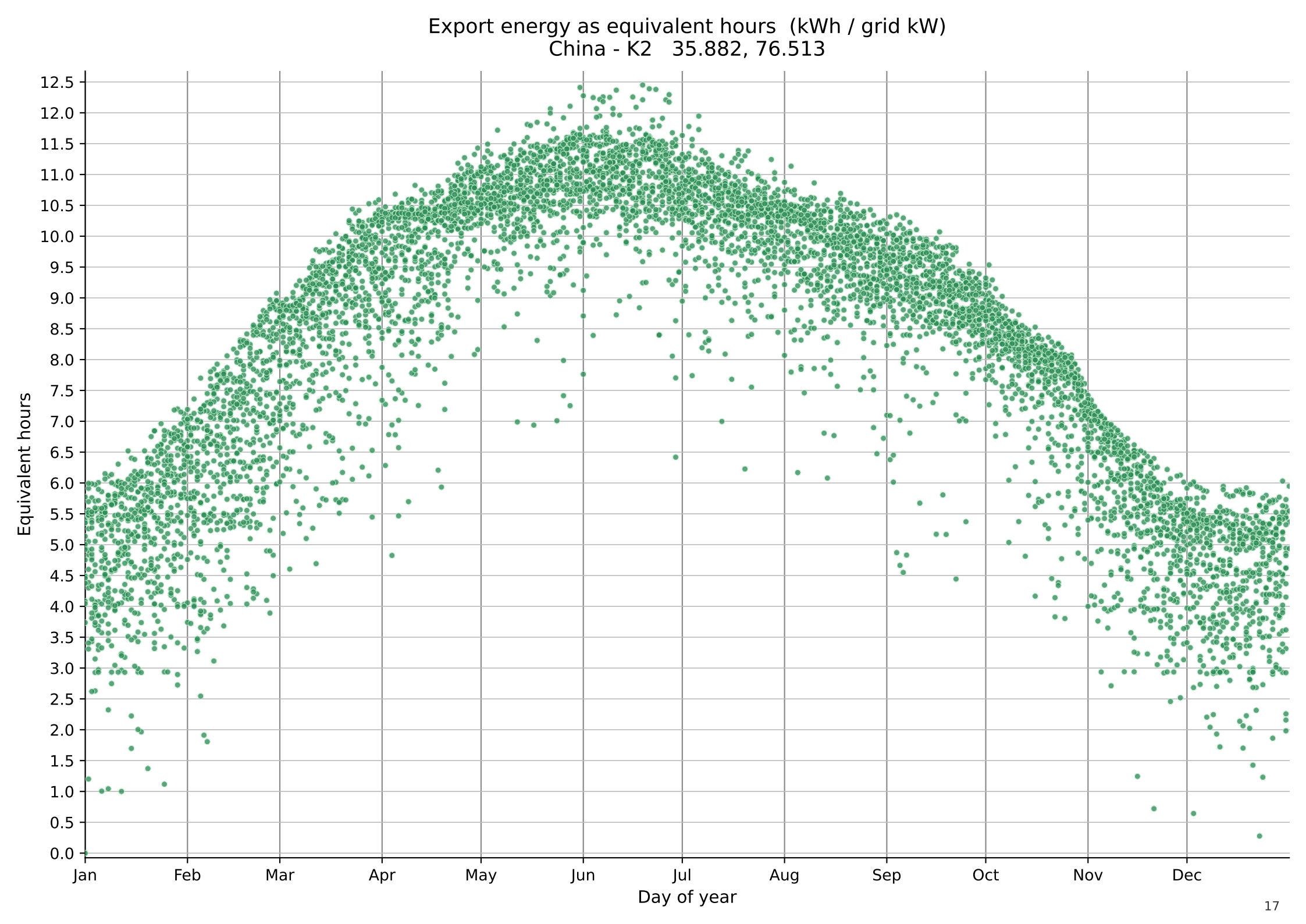
Month / year		Roof East 22°/-90° 19,800 Wp	Roof West 22°/90° 19,800 Wp	Terrace railing south 90°/0° 4,620 Wp	Terrace railing north 90°/180° 4,620 Wp	share central structure east 8°/-90° 20,460 Wp	share central strucure west p 8°/90° 20,460 Wp	All together
January	Maximum	114.57	110.56	17.61	17.61	113.05	111.58	101.98
	average	105.08	101.89	14.79	14.79	104.03	102.85	94.33
	minimum	90.04	87.95	10.86	10.86	89.86	89.12	81.86
February	Maximum	134.51	130.95	60.27	24.80	136.03	134.55	123.98
	average	117.68	113.99	54.04	18.51	118.99	117.45	108.73
	minimum	105.35	101.78	44.98	13.59	107.28	106.39	98.99
March	Maximum	187.87	183.02	119.09	28.51	190.22	188.12	175.14
	average	172.20	167.88	109.85	24.10	174.59	172.75	161.09
	minimum	161.36	157.57	103.84	18.59	163.83	162.11	151.43
April	Maximum	206.47	207.85	111.75	33.54	213.97	214.75	196.09
	average	196.38	194.44	107.55	29.67	202.07	201.52	185.27
	minimum	186.15	183.23	102.32	24.09	191.06	190.14	175.36
May	Maximum	231.44	233.51	88.86	45.55	240.18	240.74	218.06
	average	223.97	226.50	85.01	41.23	232.38	233.28	212.01
	minimum	210.62	213.86	79.93	34.25	218.78	220.06	200.26
June	Maximum	225.60	231.65	71.02	45.30	235.46	237.67	214.23
	average	217.49	224.94	68.09	41.96	227.47	230.30	207.60
	minimum	209.11	215.30	63.38	37.04	219.98	221.30	200.62
July	Maximum	211.71	224.46	78.09	46.85	222.63	228.15	204.88
	average	202.87	212.45	75.81	44.67	212.75	216.69	195.70
	minimum	188.74	199.78	73.91	42.36	198.82	203.60	183.74
August	Maximum	197.06	202.61	98.19	38.64	205.68	208.10	189.05
	average	183.94	191.34	95.12	36.04	192.59	195.72	178.05
	minimum	175.73	181.26	92.83	31.49	183.56	185.91	169.83
September	Maximum	173.10	176.70	114.01	27.45	178.98	180.03	165.75
	average	165.79	169.88	109.81	23.80	171.98	173.68	159.71
	minimum	152.82	159.10	102.40	20.35	159.17	161.76	148.64
October	Maximum	153.60	152.65	91.42	19.54	156.12	156.04	144.32
	average	147.65	146.97	88.21	17.19	150.20	150.21	138.89
	minimum	137.93	138.79	82.71	13.22	141.00	141.55	130.70
November	Maximum	120.06	117.14	19.94	16.95	120.85	119.34	108.32
	average	108.21	105.86	15.71	12.65	109.28	108.12	98.23
	minimum	93.69	92.70	12.33	8.89	95.27	94.81	86.34
December	Maximum	103.55	97.51	13.94	13.94	101.79	99.67	91.33
	average	96.93	92.06	11.80	11.80	95.64	93.95	86.12
	minimum	87.66	83.65	9.47	9.47	86.89	85.47	78.51
All years	Maximum	1,966.0	1,977.9	854.5	333.6	2,020.4	2,025.9	1,851.5
	average	1,938.2	1,948.2	835.8	316.4	1,992.0	1,996.5	1,825.7
	minimum	1,892.4	1,911.6	817.5	303.2	1,948.5	1,956.8	1,789.8

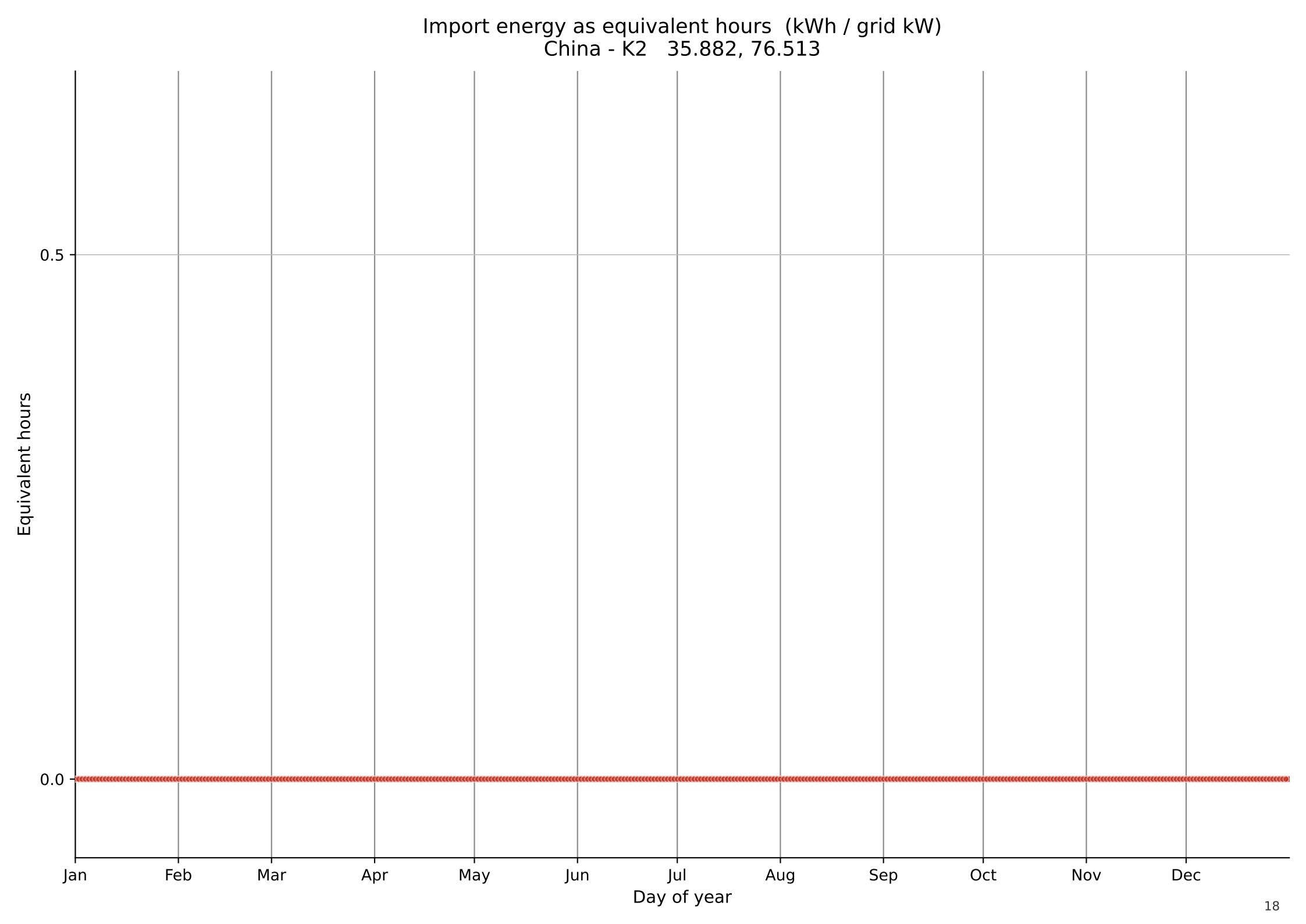
Highest combined yield hour: 2013-05-31 06:30 UTC 81,431.3 W (0.907 W/Wp) of 89,760 Wp installed. Use this hour to size battery charge power.

Monthly and yearly total yield (kWh)
China - K2 35.882, 76.513

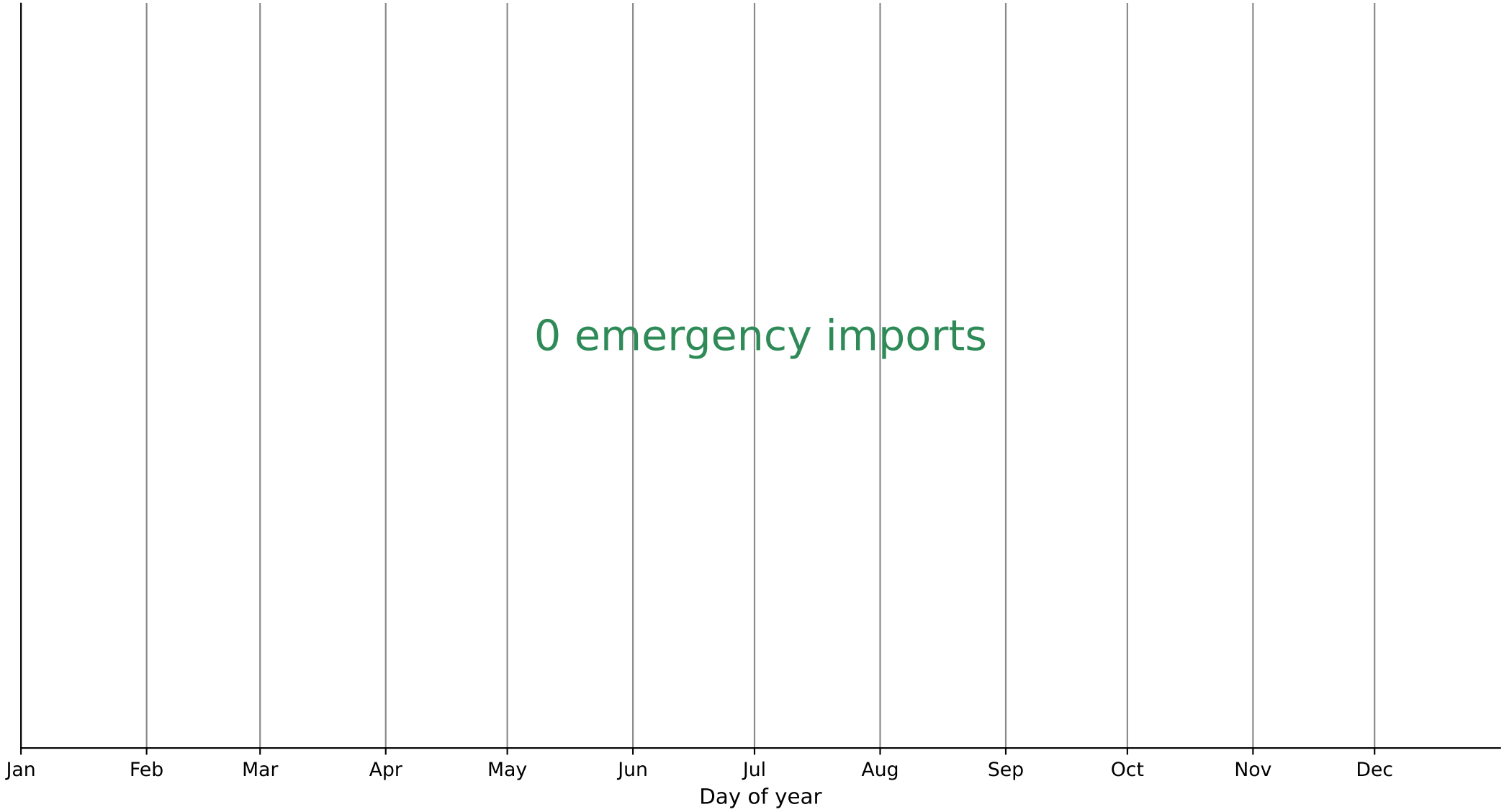
Month / year		Roof East 22°/-90° 19,800 Wp	Roof West 22°/90° 19,800 Wp	Terrace railing south 90°/0° 4,620 Wp	Terrace railing north 90°/180° 4,620 Wp	share central structure east 8°/-90° 20,460 Wp	share central strucure west p 8°/90° 20,460 Wp	All together
January	Maximum	2,268.47	2,189.11	81.34	81.34	2,313.01	2,282.99	9,153.94
	average	2,080.54	2,017.40	68.33	68.33	2,128.50	2,104.32	8,467.42
	minimum	1,782.87	1,741.44	50.18	50.18	1,838.50	1,823.43	7,348.04
February	Maximum	2,663.30	2,592.90	278.44	114.56	2,783.17	2,752.84	11,128.19
	average	2,330.04	2,257.09	249.64	85.53	2,434.49	2,402.94	9,759.73
	minimum	2,085.99	2,015.22	207.81	62.77	2,195.03	2,176.79	8,885.30
March	Maximum	3,719.78	3,623.70	550.21	131.71	3,891.94	3,848.95	15,720.48
	average	3,409.60	3,324.00	507.52	111.33	3,572.04	3,534.52	14,459.00
	minimum	3,194.91	3,119.88	479.72	85.90	3,351.91	3,316.81	13,592.00
April	Maximum	4,088.05	4,115.51	516.30	154.95	4,377.88	4,393.86	17,601.42
	average	3,888.42	3,849.82	496.87	137.07	4,134.38	4,123.19	16,629.74
	minimum	3,685.74	3,627.93	472.71	111.29	3,909.09	3,890.27	15,740.45
May	Maximum	4,582.59	4,623.43	410.53	210.45	4,914.15	4,925.60	19,573.29
	average	4,434.51	4,484.64	392.73	190.49	4,754.40	4,772.97	19,029.75
	minimum	4,170.34	4,234.42	369.27	158.25	4,476.14	4,502.52	17,975.09
June	Maximum	4,466.89	4,586.59	328.09	209.27	4,817.51	4,862.66	19,229.19
	average	4,306.33	4,453.86	314.57	193.87	4,653.94	4,711.91	18,634.48
	minimum	4,140.38	4,262.90	292.81	171.11	4,500.79	4,527.88	18,007.51
July	Maximum	4,191.89	4,444.31	360.76	216.46	4,555.03	4,667.99	18,390.16
	average	4,016.87	4,206.58	350.26	206.38	4,352.88	4,433.48	17,566.45
	minimum	3,737.03	3,955.71	341.46	195.68	4,067.94	4,165.65	16,492.29
August	Maximum	3,901.78	4,011.71	453.64	178.51	4,208.22	4,257.68	16,969.40
	average	3,641.98	3,788.49	439.43	166.51	3,940.46	4,004.52	15,981.40
	minimum	3,479.44	3,588.99	428.86	145.47	3,755.63	3,803.62	15,243.94
September	Maximum	3,427.37	3,498.57	526.73	126.82	3,661.92	3,683.48	14,878.16
	average	3,282.71	3,363.62	507.34	109.97	3,518.73	3,553.44	14,335.81
	minimum	3,025.85	3,150.18	473.11	94.02	3,256.57	3,309.69	13,342.21
October	Maximum	3,041.27	3,022.37	422.35	90.29	3,194.19	3,192.61	12,953.75
	average	2,923.53	2,909.98	407.51	79.41	3,073.14	3,073.32	12,466.88
	minimum	2,731.10	2,747.97	382.11	61.08	2,884.84	2,896.16	11,732.02
November	Maximum	2,377.12	2,319.40	92.12	78.32	2,472.50	2,441.64	9,722.71
	average	2,142.49	2,095.94	72.60	58.43	2,235.84	2,212.12	8,817.42
	minimum	1,855.08	1,835.54	56.96	41.06	1,949.13	1,939.80	7,749.98
December	Maximum	2,050.22	1,930.65	64.40	64.40	2,082.65	2,039.34	8,198.01
	average	1,919.17	1,822.81	54.52	54.52	1,956.79	1,922.23	7,730.04
	minimum	1,735.66	1,656.27	43.74	43.74	1,777.68	1,748.67	7,047.08
All years	Maximum	38,927.4	39,161.7	3,947.6	1,541.4	41,337.8	41,450.9	166,193.3
	average	38,376.2	38,574.2	3,861.3	1,461.8	40,755.6	40,849.0	163,878.1
	minimum	37,470.0	37,849.2	3,776.7	1,400.8	39,866.7	40,036.1	160,654.3

Highest combined yield hour: 2013-05-31 06:30 UTC 81,431.3 W (0.907 W/Wp) of 89,760 Wp installed. Use this hour to size battery charge power.


Export energy as equivalent hours (kWh / grid kW)
China - K2 35.882, 76.513
Equivalent hours
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Import energy as equivalent hours (kWh / grid kW)
China - K2 35.882, 76.513
0.5
0.0
Equivalent hours
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year

Emergency import hours: 0 days with an emergency: 0
China - K2 35.882, 76.513



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
China - K2 35.882, 76.513

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export to grid													
month Maximum	7,615	9,374	12,668	13,534	14,890	14,698	14,464	13,659	12,218	10,891	8,203	6,635	134,215
month average	6,927	8,215	11,821	13,016	14,595	14,398	14,069	13,167	11,854	10,568	7,353	6,209	132,191
month minimum	5,938	7,407	11,196	12,479	14,053	14,159	13,497	12,719	11,169	9,980	6,358	5,571	130,322
day Maximum	316.8	399.3	465.9	502.8	546.1	547.8	525.7	489.9	455.2	419.5	326.5	265.4	547.8
day average	223.4	291.2	381.3	433.9	470.8	479.9	453.8	424.7	395.1	340.9	245.1	200.3	362.0
day minimum	0.0	79.5	202.6	212.3	305.2	282.4	274.0	267.5	195.5	167.3	31.7	12.2	0.0
Import from 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
Total energy used for house													
month Maximum	1,043	920	930	857	851	796	789	791	819	915	942	1,024	10,463
month average	992	860	908	842	838	781	764	762	792	893	908	979	10,318
month minimum	943	808	887	822	822	754	742	742	772	870	873	935	10,195
day Maximum	40.3	37.1	32.1	31.0	29.0	28.3	26.6	27.3	29.2	32.1	34.5	38.1	40.3
day average	32.0	30.5	29.3	28.1	27.0	26.0	24.6	24.6	26.4	28.8	30.3	31.6	28.3
day minimum	20.3	27.2	27.0	26.1	25.4	23.7	23.1	22.9	23.7	25.8	27.3	28.1	20.3

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
China - K2 35.882, 76.513

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export													
month Maximum	1,249	1,331	1,549	1,298	1,306	1,269	1,341	1,363	1,313	1,479	1,273	1,147	15,566
month average	1,167	1,221	1,519	1,276	1,283	1,253	1,311	1,338	1,295	1,441	1,187	1,093	15,384
month minimum	1,072	1,154	1,463	1,239	1,253	1,218	1,276	1,301	1,260	1,396	1,059	1,004	15,180
day Maximum	56.0	59.1	60.4	56.9	55.6	54.6	55.3	55.4	54.4	57.4	54.0	54.4	60.4
day average	37.7	43.3	49.0	42.5	41.4	41.8	42.3	43.2	43.2	46.5	39.6	35.3	42.1
day minimum	0.0	9.5	24.2	23.6	23.0	23.7	23.1	24.0	22.4	20.1	3.8	1.5	0.0
Import													
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
Peak grid fee													
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 incl. peak fee													
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
Balance													
month Maximum	1,249	1,331	1,549	1,298	1,306	1,269	1,341	1,363	1,313	1,479	1,273	1,147	15,566
month average	1,167	1,221	1,519	1,276	1,283	1,253	1,311	1,338	1,295	1,441	1,187	1,093	15,384
month minimum	1,072	1,154	1,463	1,239	1,253	1,218	1,276	1,301	1,260	1,396	1,059	1,004	15,180
day Maximum	56.0	59.1	60.4	56.9	55.6	54.6	55.3	55.4	54.4	57.4	54.0	54.4	60.4
day average	37.7	43.3	49.0	42.5	41.4	41.8	42.3	43.2	43.2	46.5	39.6	35.3	42.1
day minimum	0.0	9.5	24.2	23.6	23.0	23.7	23.1	24.0	22.4	20.1	3.8	1.5	0.0

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
China - K2 35.882, 76.513

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export total													
month Maximum	7,615	9,374	12,668	13,534	14,890	14,698	14,464	13,659	12,218	10,891	8,203	6,635	134,215
month average	6,927	8,215	11,821	13,016	14,595	14,398	14,069	13,167	11,854	10,568	7,353	6,209	132,191
month minimum	5,938	7,407	11,196	12,479	14,053	14,159	13,497	12,719	11,169	9,980	6,358	5,571	130,322
day Maximum	316.8	399.3	465.9	502.8	546.1	547.8	525.7	489.9	455.2	419.5	326.5	265.4	547.8
day average	223.4	291.2	381.3	433.9	470.8	479.9	453.8	424.7	395.1	340.9	245.1	200.3	362.0
day minimum	0.0	79.5	202.6	212.3	305.2	282.4	274.0	267.5	195.5	167.3	31.7	12.2	0.0
Export during high price hours													
month Maximum	5,791	5,756	6,232	5,200	4,796	4,503	5,207	5,590	5,822	6,314	5,820	5,494	64,843
month average	5,545	5,447	6,052	5,047	4,596	4,377	4,908	5,381	5,568	6,182	5,596	5,323	64,022
month minimum	5,178	5,190	5,845	4,882	4,475	4,229	4,789	5,182	5,444	5,977	5,204	4,986	62,946
day Maximum	252.3	243.8	230.7	219.2	203.3	214.0	216.4	221.4	218.9	228.5	245.3	247.4	252.3
day average	178.9	193.1	195.2	168.2	148.2	145.9	158.3	173.6	185.6	199.4	186.5	171.7	175.3
day minimum	0.0	79.5	161.9	141.6	133.2	130.3	137.7	146.2	140.1	128.7	31.7	12.2	0.0
Export during medium price hours													
month Maximum	707	1,133	2,403	3,546	4,451	4,590	4,277	3,470	2,209	1,198	556	383	26,818
month average	579	906	1,942	3,130	4,199	4,400	3,992	3,110	2,022	1,069	436	301	26,085
month minimum	377	723	1,658	2,816	3,829	4,194	3,603	2,744	1,649	877	319	193	25,054
day Maximum	37.2	61.5	120.0	171.4	196.4	202.8	197.2	170.1	113.9	86.3	27.0	22.3	202.8
day average	18.7	32.1	62.7	104.3	135.4	146.7	128.8	100.3	67.4	34.5	14.5	9.7	71.4
day minimum	0.0	0.0	4.3	3.2	31.5	50.5	28.5	19.2	0.0	0.0	0.0	0.0	0.0
Export during low price hours													
month Maximum	1,135	2,490	4,419	5,127	5,988	5,863	5,398	5,008	4,538	3,614	1,827	830	43,167
month average	803	1,862	3,826	4,840	5,801	5,621	5,168	4,677	4,264	3,317	1,321	586	42,084
month minimum	370	1,386	3,324	4,481	5,427	5,437	4,687	4,384	3,698	2,849	835	310	41,030
day Maximum	82.8	129.7	172.6	204.9	216.4	216.4	200.7	182.4	173.0	156.1	91.4	57.8	216.4
day average	25.9	66.0	123.4	161.3	187.1	187.4	166.7	150.9	142.1	107.0	44.0	18.9	115.2
day minimum	0.0	0.0	0.0	0.0	35.9	0.0	18.1	17.5	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
China - K2 35.882, 76.513

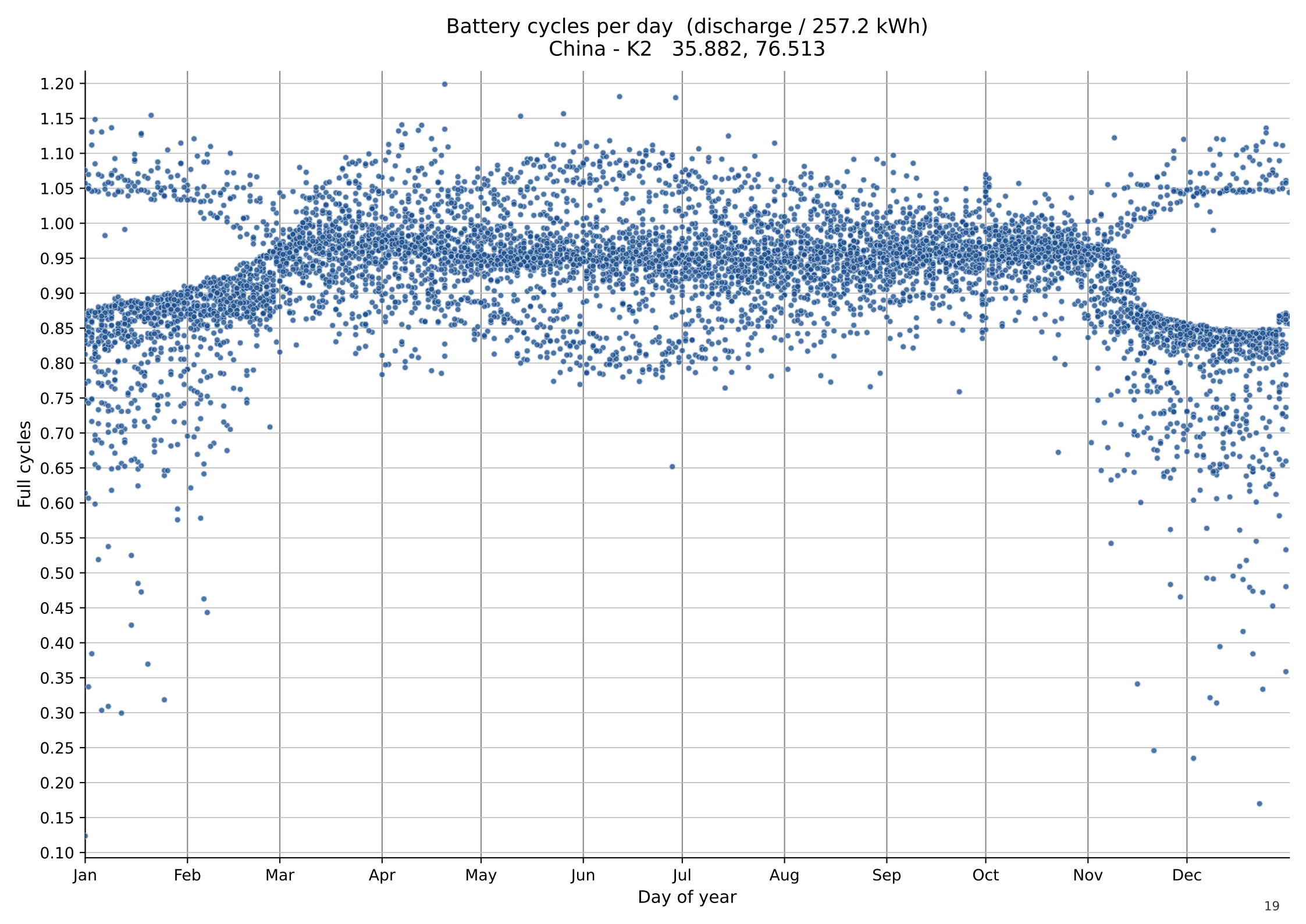
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Heating													
month Maximum	538	448	424	368	346	307	283	286	330	409	453	519	4,496
month average	487	400	402	353	332	292	259	256	303	388	418	474	4,364
month minimum	437	352	381	333	317	265	236	237	283	365	384	430	4,229
day Maximum	24.0	20.8	15.8	14.7	12.7	12.0	10.3	11.0	12.9	15.8	18.2	21.8	24.0
day average	15.7	14.2	13.0	11.8	10.7	9.7	8.3	8.3	10.1	12.5	13.9	15.3	12.0
day minimum	4.0	10.9	10.7	9.8	9.1	7.4	6.8	6.6	7.4	9.5	11.0	11.8	4.0
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	71	67	71	69	71	69	71	71	69	71	69	71	843
month average	71	65	71	69	71	69	71	71	69	71	69	71	841
month minimum	71	64	71	69	71	69	71	71	69	71	69	71	840
day Maximum	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
day average	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
day minimum	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Direct electric													
month Maximum	44	16	4	0	0	0	0	0	0	2	11	35	74
month average	19	3	1	0	0	0	0	0	0	0	3	13	40
month minimum	1	0	0	0	0	0	0	0	0	0	0	1	9
day Maximum	7.5	4.3	1.2	0.4	0.0	0.0	0.0	0.0	0.0	1.2	2.4	5.3	7.5
day average	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	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

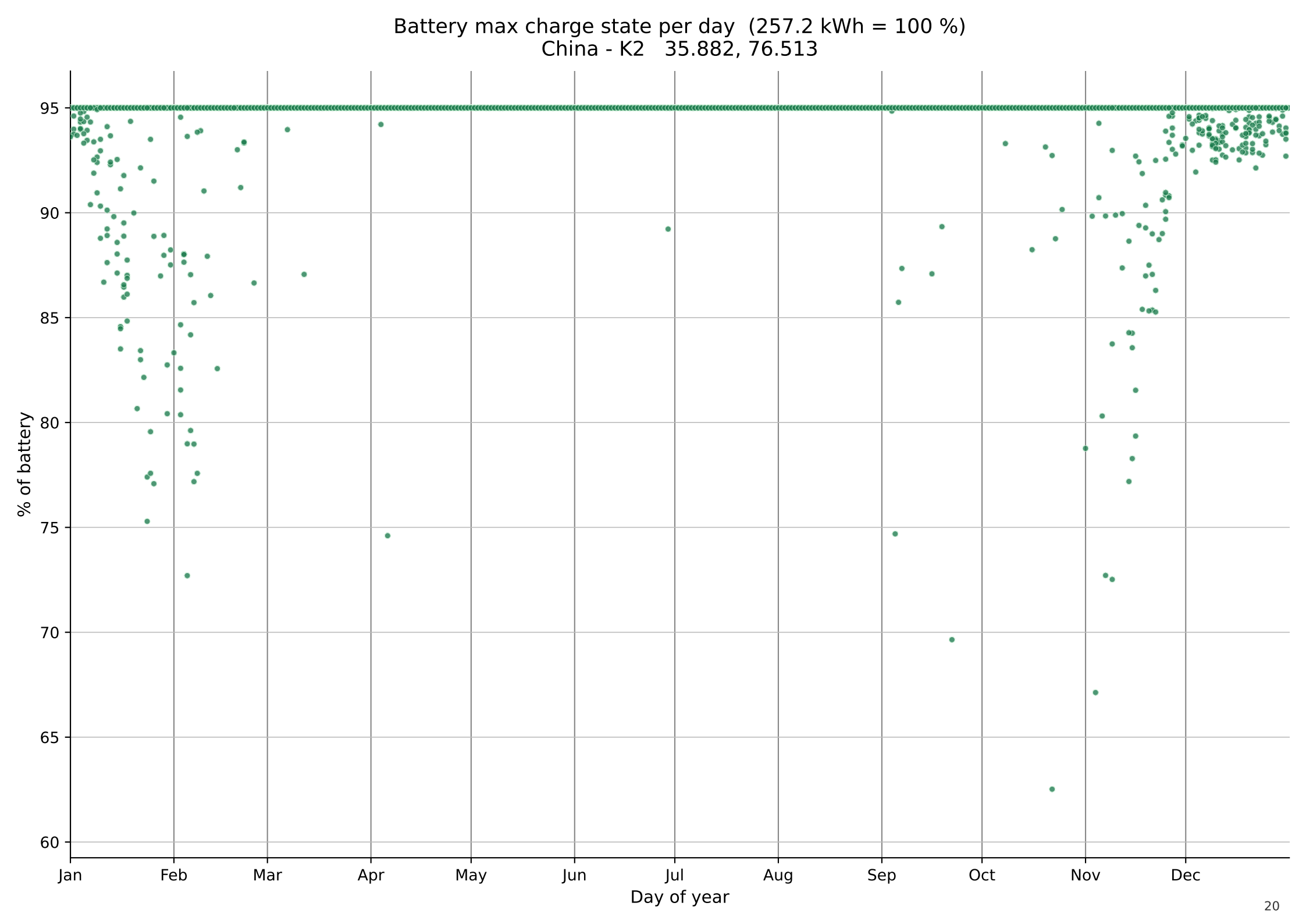
Heating, cooling and DHW are electricity. Direct electric is the part the heat pump could not cover.

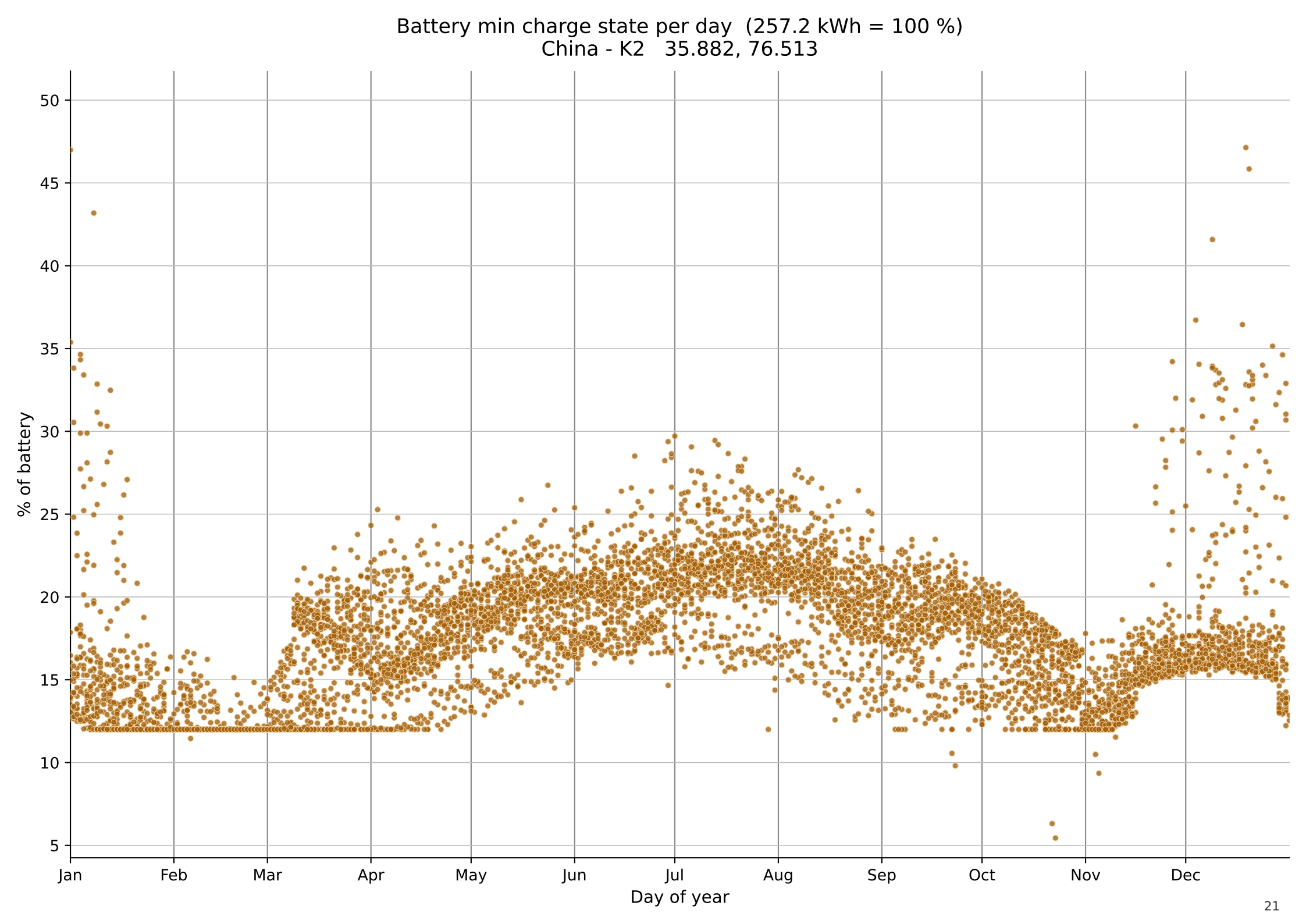
Battery
China - K2 35.882, 76.513

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Wasted													
month Maximum	8	304	1,517	2,668	3,213	3,159	2,565	1,889	1,261	525	12	0	15,444
month average	0	148	1,123	2,182	2,971	2,848	2,108	1,431	1,077	381	4	0	14,275
month minimum	0	61	834	1,752	2,492	2,479	1,621	1,163	797	247	0	0	13,049
day Maximum	7.6	41.8	96.9	127.2	142.1	123.4	117.5	103.5	67.2	41.6	3.0	0.0	142.1
day average	0.0	5.3	36.2	72.7	95.8	94.9	68.0	46.2	35.9	12.3	0.1	0.0	39.1
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
Full cycles													
month Maximum	27	27	30	29	30	29	30	30	29	30	27	26	340
month average	26	25	30	29	30	28	29	30	29	30	26	25	337
month minimum	25	24	30	29	29	28	29	29	28	29	25	24	334
day Maximum	1.2	1.1	1.1	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.2
day average	0.9	0.9	1.0	1.0	1.0	0.9	0.9	1.0	1.0	1.0	0.9	0.8	0.9
day minimum	0.1	0.4	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.7	0.2	0.2	0.1
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	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3
day average	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
day minimum	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Discharge C													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	2
month average	0	0	0	0	0	0	0	0	0	0	0	0	2
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	2
day Maximum	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 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	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0

Wasted = PV left when the export price is negative and the battery is full. Full cycles = discharge kWh / 257.2 kWh. Battery export only into hours whose export price is above 0, highest price first. At 0 cent on


Battery cycles per day (discharge / 257.2 kWh)
China - K2 35.882, 76.513
Full cycles
1.20
1.15
1.10
1.05
1.00
0.95
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
0.15
0.10
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Battery max charge state per day (257.2 kWh = 100 %)
China - K2 35.882, 76.513
% of battery
95
90
85
80
75
70
65
60
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year


Battery min charge state per day (257.2 kWh = 100 %)
China - K2 35.882, 76.513
% of battery
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