

Scenario — PV

GEMINI-60-house-with-garage Austria - Inning 48.182, 15.417

Name	Slope °	Azimuth °	Wp	Wall d/h m	Face	Bifacial	Wp counted
Roof East	22	-90	19800	—	front	—	yes
Roof West	22	90	19800	—	front	—	yes
Terrace railing south	90	0	4620	5 / 4	front	—	yes
Terrace railing north	90	180	4620	5 / 4	front	—	yes
Garage roof	1	0	10740	—	front	—	yes
Garage side wall south	90	0	3475	5 / 4	front	—	yes
Garage side wall north	90	180	3475	5 / 4	front	—	yes
Garage door side west	90	90	700	5 / 4	front	—	yes
Garage back side east	90	-90	2540	5 / 4	front	—	yes
Garden fence east	90	-90	6000	5 / 4	face 1	—	yes
Garden fence east face2	90	90	4800	5 / 4	face 2	80 %	no
Total counted			75770				

Location: My most visited location in “lower Austria”, just at the Tesla SuC.
Database PVGIS-SARAH3 2005–2023 loss 14 % azimuth 0 = south, 90 = west, –90 = east.
Price bands and charts use UTC+1 from longitude (15° per hour), not the political time zone.
Peak hour 2009-06-13 11:10 local (10:10 UTC) 42862 W 0.566 W/Wp of 75770 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 winter time, battery export is only the kWh that would not fit in the next 72 h.



Scenario — house, heat pump, battery
GEMINI-60-house-with-garage Austria - Inning 48.182, 15.417

Chapter	Parameter	Value
Building	Design out / in / heat	-10.0 °C / 20.0 °C / 1600.0 W
	Heat on / cool on / ground	22.0 °C / 25.0 °C / 10.0 °C
	Curve / flow min / max	0.4 / 25.0 °C / 55.0 °C
	Thermal mass of the house	25.0 kWh/K
	Household only	4.0 kWh/day
DHW	Litres at 40 °C / tank	200.0 L tank 42.0 °C 8-18 h
	Water out of the pipe Q1-Q4	8 °C 10 °C 12 °C 10 °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 5 6
	kW -10/0/10 @ 50 °C	3.5 4.5 5
Battery	kWh / C-rate / SOC min-max-start	176.8 kWh C 0.5 5 / 95 / 50 %
	Nameplate	—
	Charge / discharge η	95 % / 90 %
Grid	Inverter / grid connection	34.0 kW / 17.0 kW
	Max export	17.0 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 @ 40.0 kW night 10.0 kWh @ 11.0 kW

Records 1-10 — contribution of each PV
Austria - Inning 48.182, 15.417

PV	2009-06-13 10:10	2016-05-15 12:10	2020-05-24 10:10	2012-05-18 10:10	2009-06-03 10:10	2013-05-13 11:10	2021-05-26 10:10	2009-06-13 11:10	2020-05-07 10:10	2005-04-22 11:10
Roof East	15272	12163	15115	14892	15107	13831	15100	14180	14873	13630
Roof West	13169	15912	13082	12912	13065	14598	13072	14741	12722	14359
Terrace railing south	2017	2262	2192	2274	2066	2425	2155	2083	2449	2899
Terrace railing north	228	184	223	259	230	217	164	221	201	153
Garage roof	8237	8180	8175	8050	8164	8243	8172	8369	8024	8152
Garage side wall south	1517	1701	1648	1711	1554	1824	1621	1567	1842	2180
Garage side wall north	172	138	168	195	173	163	123	166	152	115
Garage door side west	35	245	34	39	35	93	25	87	31	80
Garage back side east	589	101	567	583	571	119	544	121	564	84
Garden fence east	1391	239	1339	1376	1349	281	1285	287	1333	199
Garden fence east face2	237	1677	232	269	239	637	170	599	209	547
Watt at record	42862	42802	42775	42560	42553	42432	42431	42421	42400	42399
Percent of installed peak	56.6	56.5	56.5	56.2	56.2	56.0	56.0	56.0	56.0	56.0

Hours at or above a share of the record
Austria - Inning 48.182, 15.417

Of the record	Hours	Watts
98 %	17	42005 W
96 %	95	41148 W
94 %	348	40291 W
92 %	816	39433 W
90 %	1644	38576 W

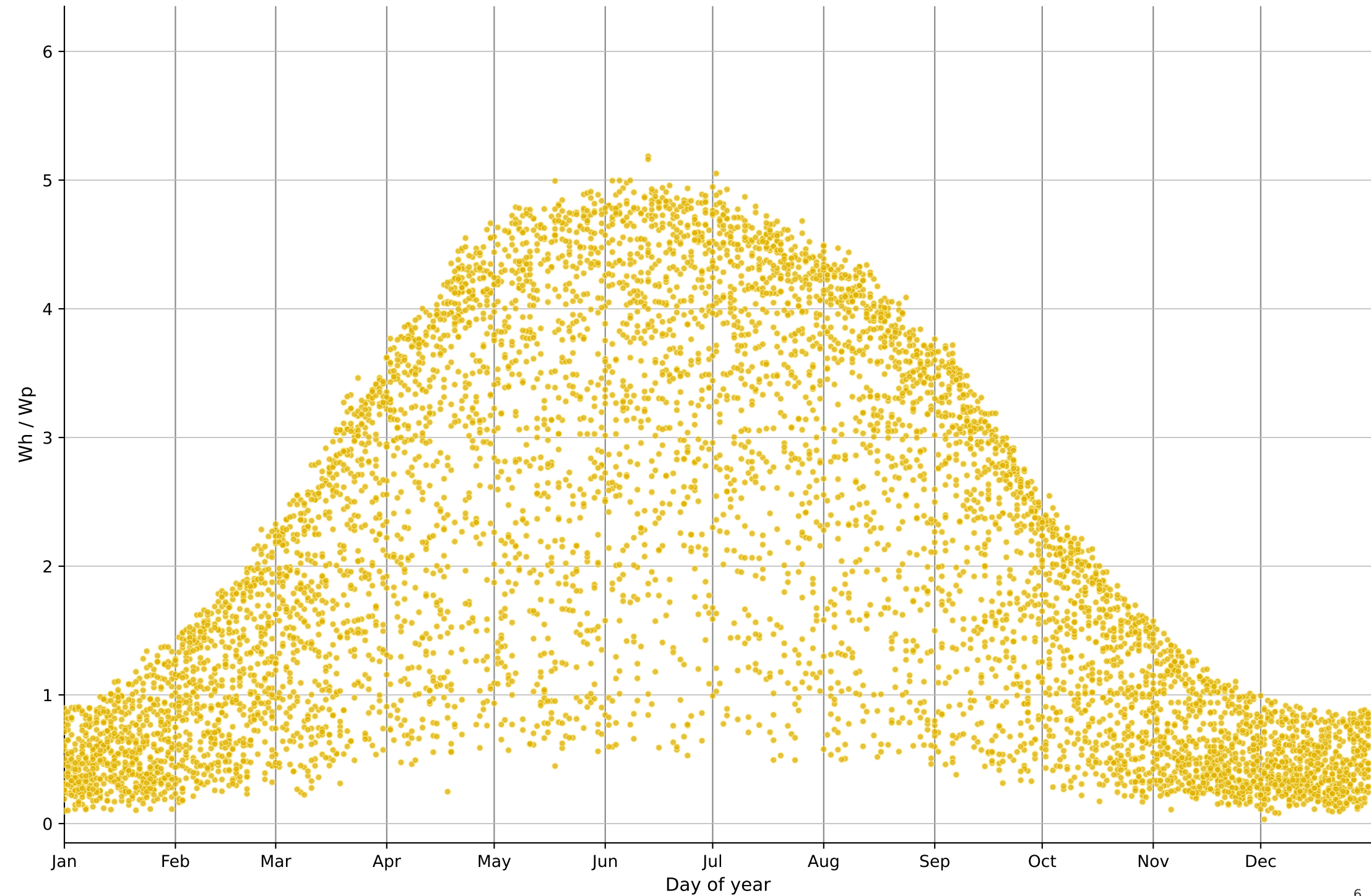
Records of each photovoltaic field

Austria - Inning 48.182, 15.417

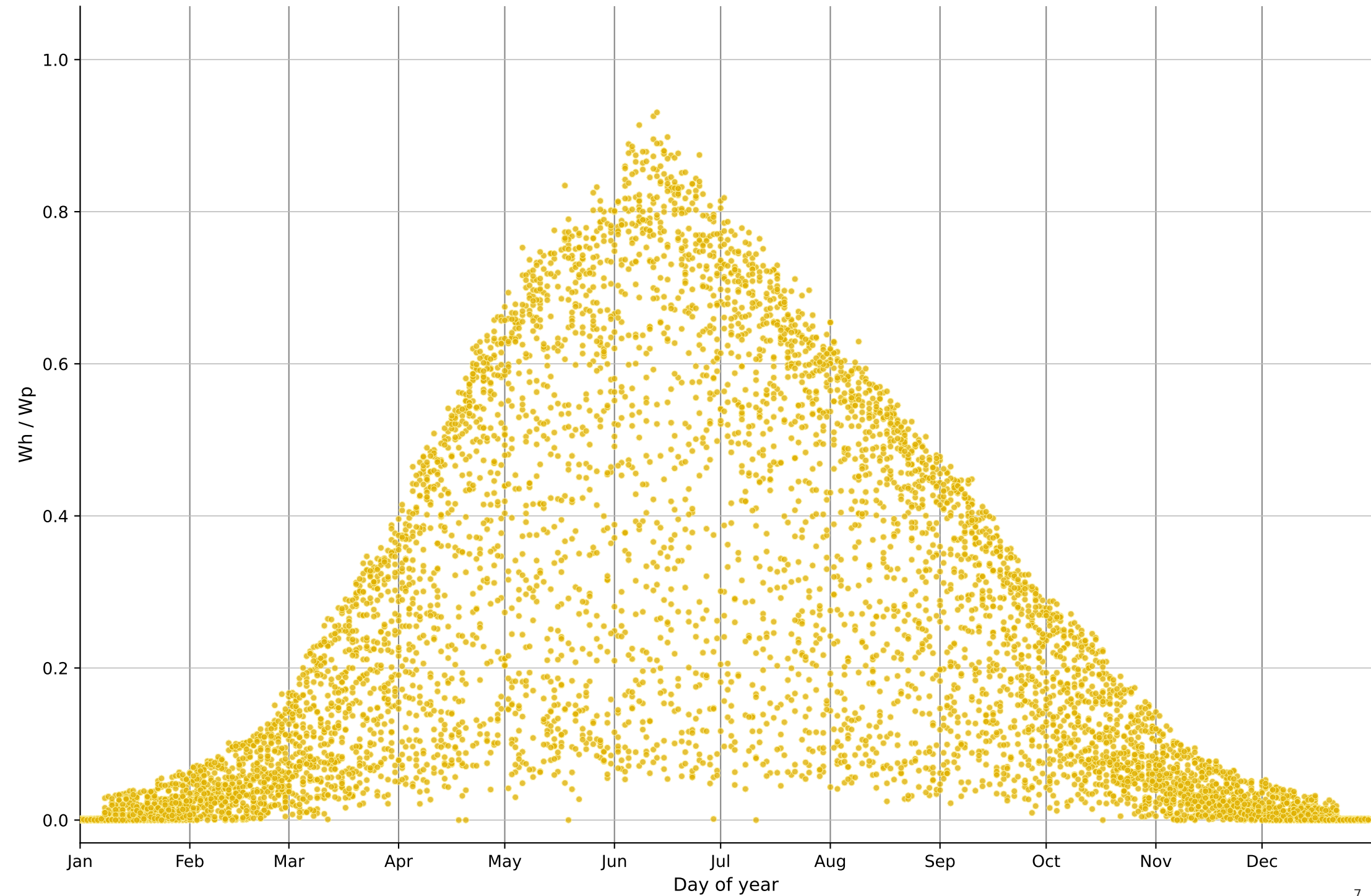
PV	Date	Watts	%	h ≥98%	h ≥96%	h ≥94%	h ≥92%	h ≥90%
Roof East	2006-05-25 09:10	15595	78.8	11	38	156	391	806
Roof West	2016-05-15 12:10	15912	80.4	3	12	30	118	333
Terrace railing south	2009-03-22 11:10	3507	75.9	8	17	26	45	75
Terrace railing north	2023-06-13 05:10	812	17.6	1	8	25	50	108
Garage roof	2009-06-13 11:10	8369	77.9	8	33	112	320	671
Garage side wall south	2009-03-22 11:10	2638	75.9	8	17	26	45	75
Garage side wall north	2023-06-13 05:10	611	17.6	1	8	25	50	108
Garage door side west	2005-05-08 14:10	473	67.6	1	3	5	16	49
Garage back side east	2009-06-13 07:10	1695	66.7	3	8	16	44	84
Garden fence east	2009-06-13 07:10	4197	70.0	3	10	18	47	102

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.

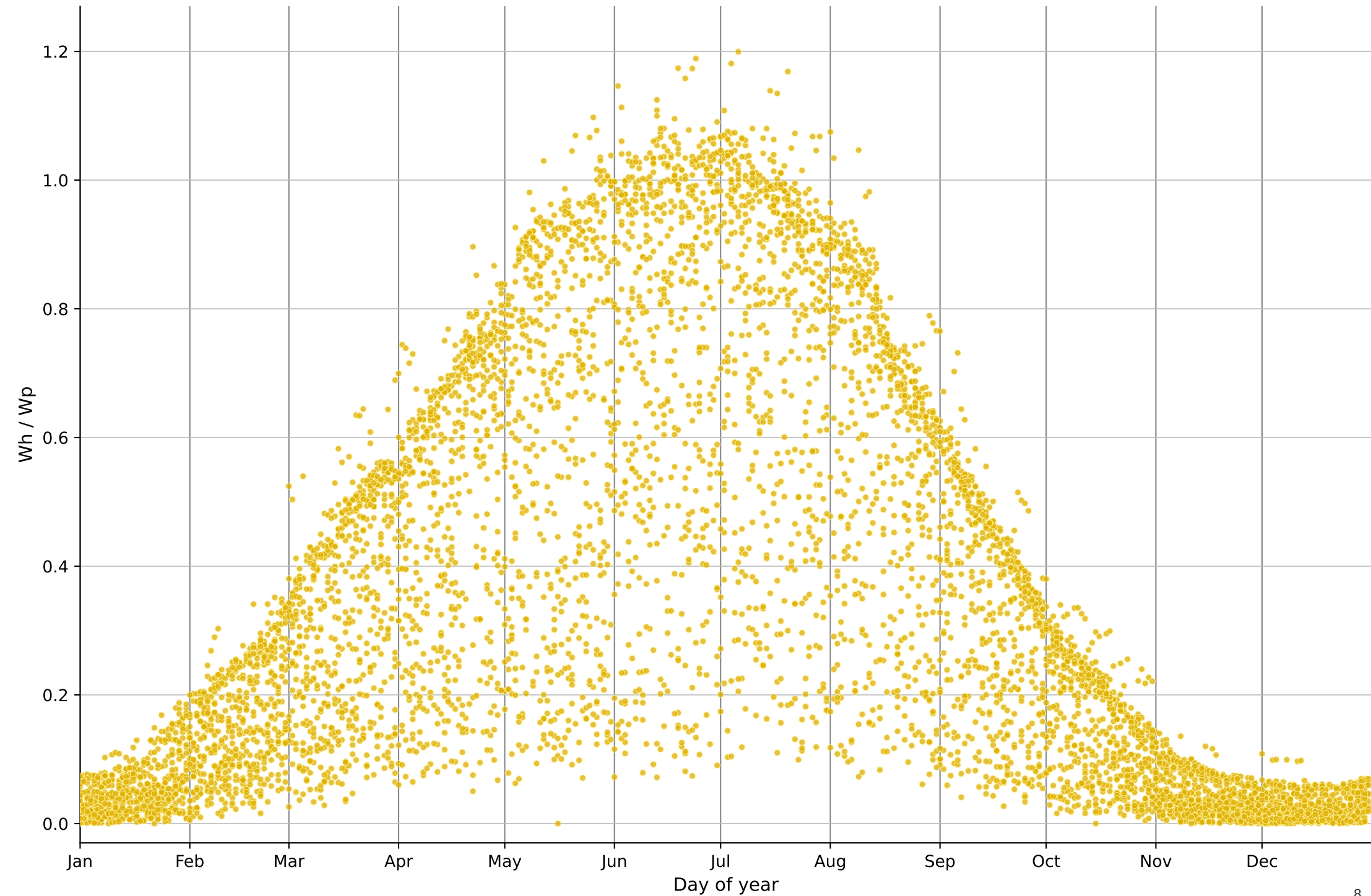
Yield distribution for each day — W_h / W_p of all PV together
Austria - Inning 48.182, 15.417



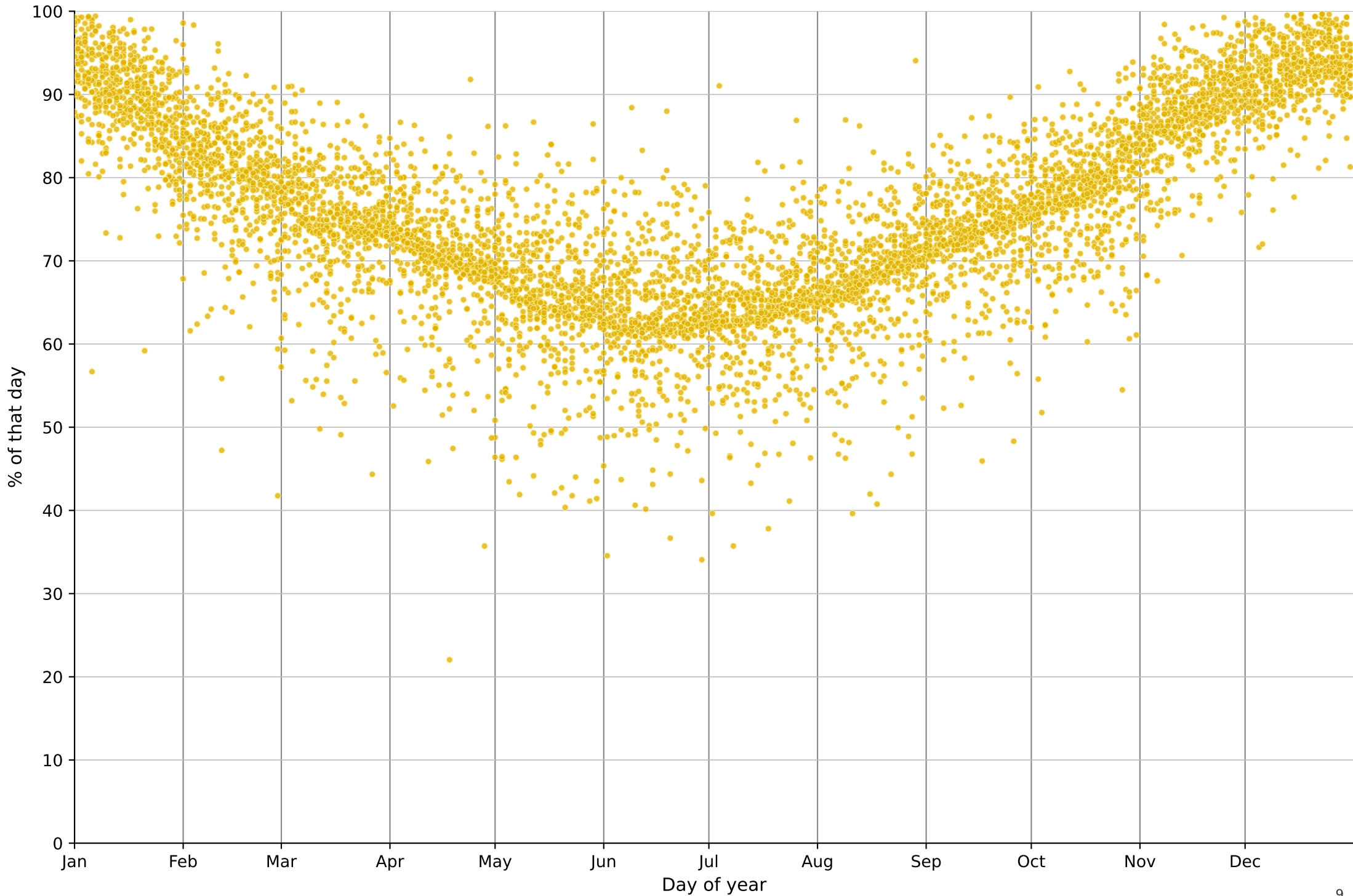
Yield distribution for each day — Wh / Wp of all PV together — 00:00-09:00
Austria - Inning 48.182, 15.417



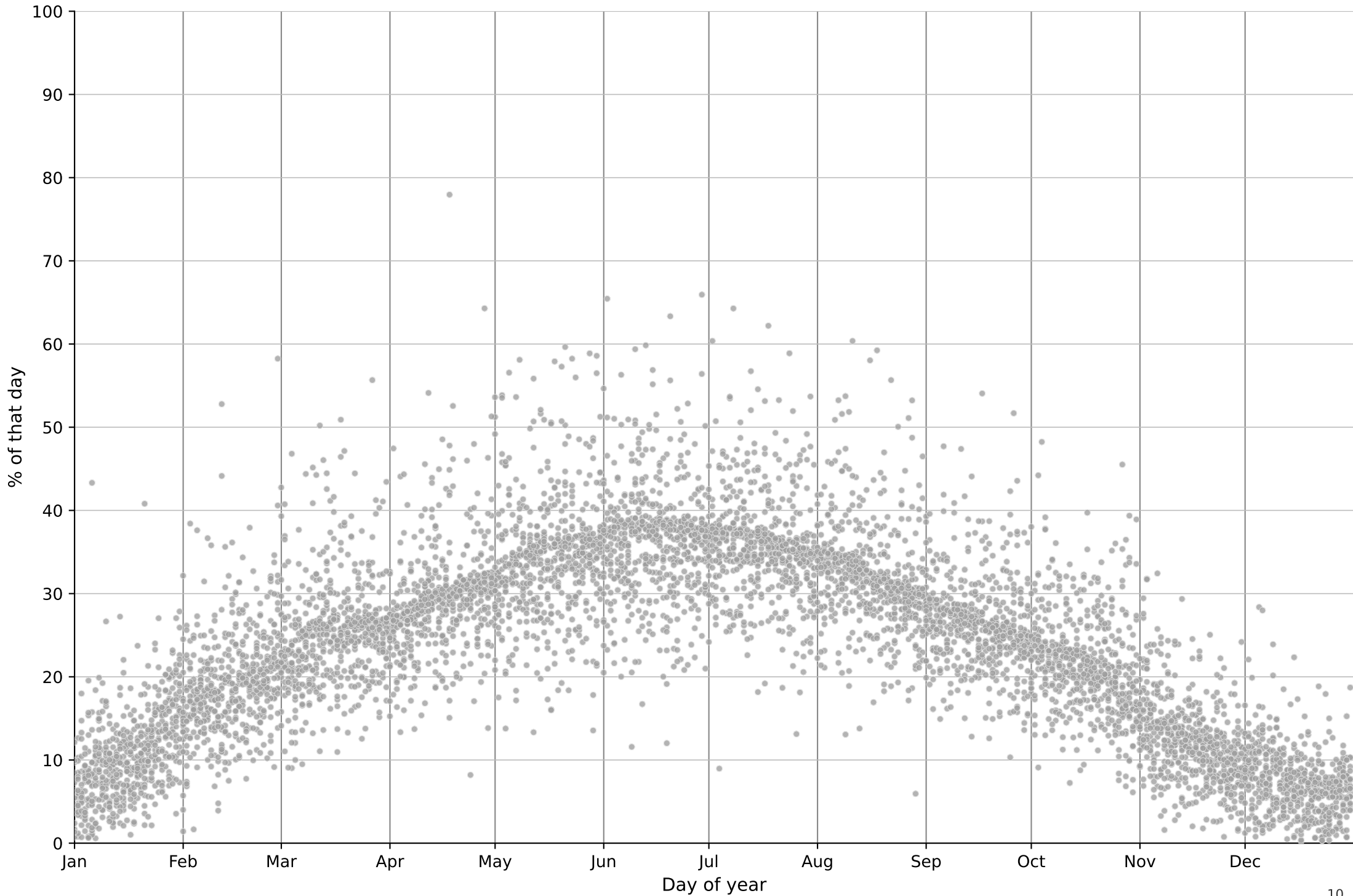
Yield distribution for each day — Wh / Wp of all PV together — 15:00-23:59
Austria - Inning 48.182, 15.417



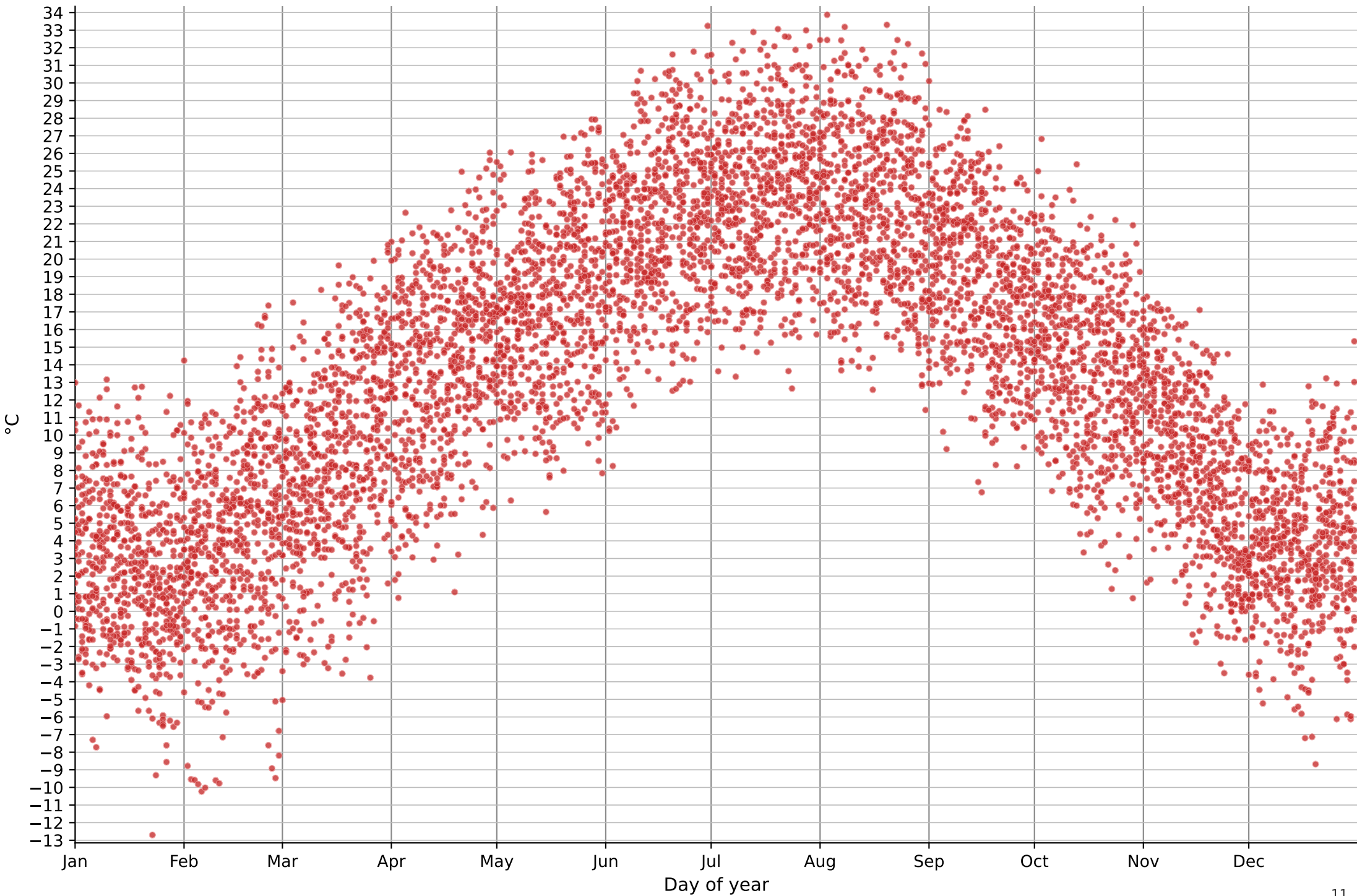
Share of the day's yield in 09:00-15:00 winter time
Austria - Inning 48.182, 15.417



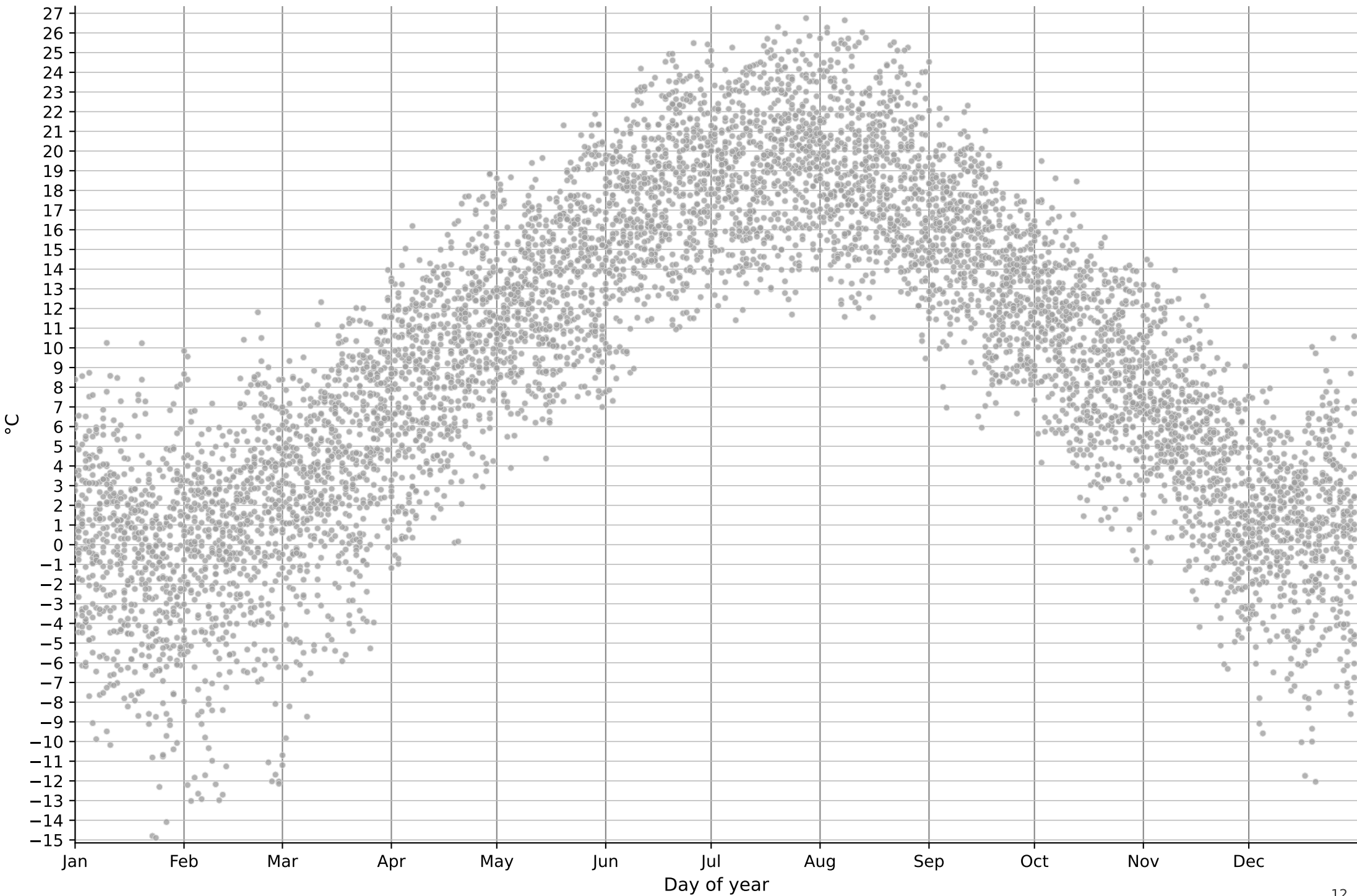
Share of the day's yield outside 09:00-15:00 winter time
Austria - Inning 48.182, 15.417



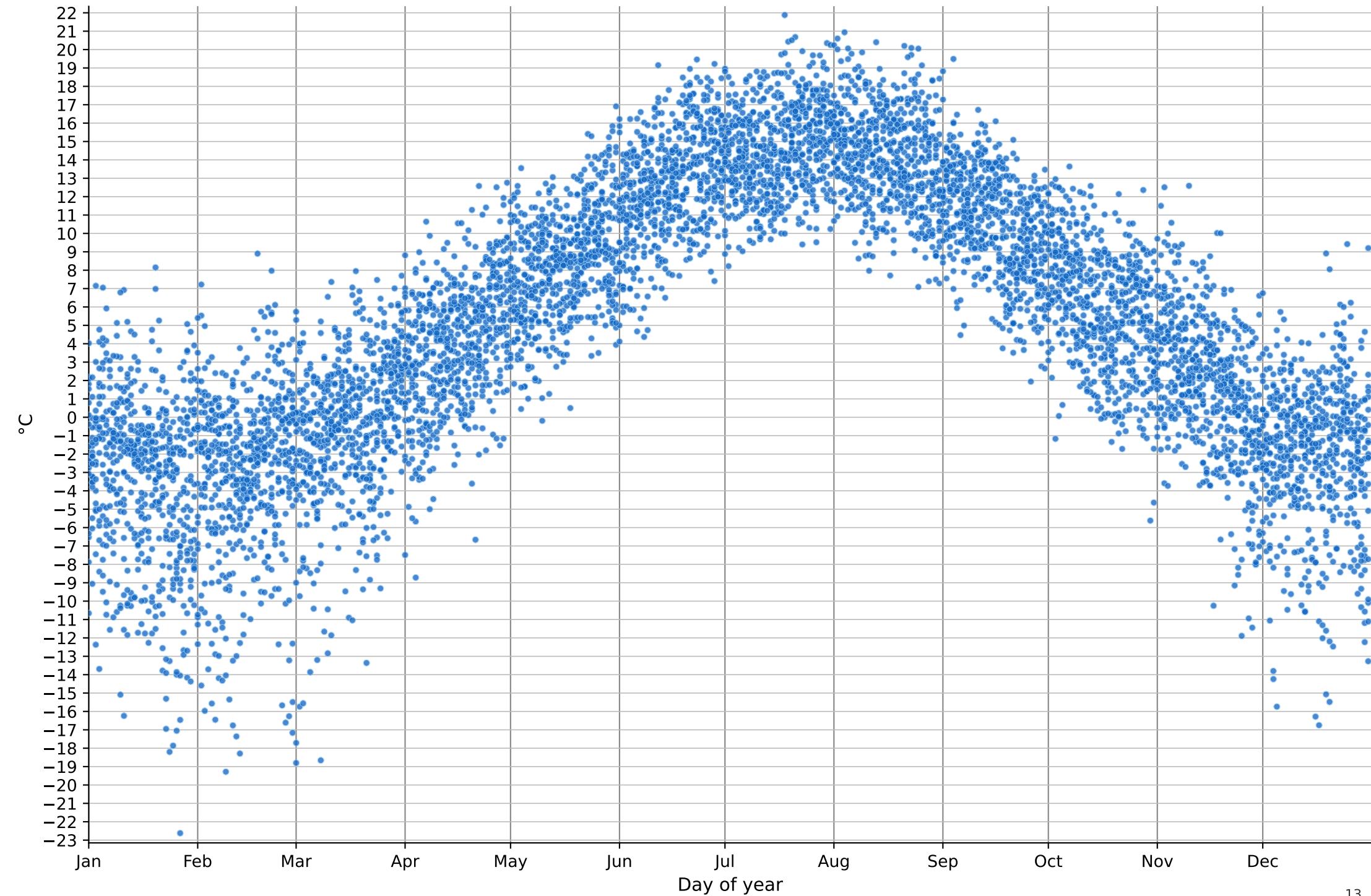
Highest temperature of each day
Austria - Inning 48.182, 15.417



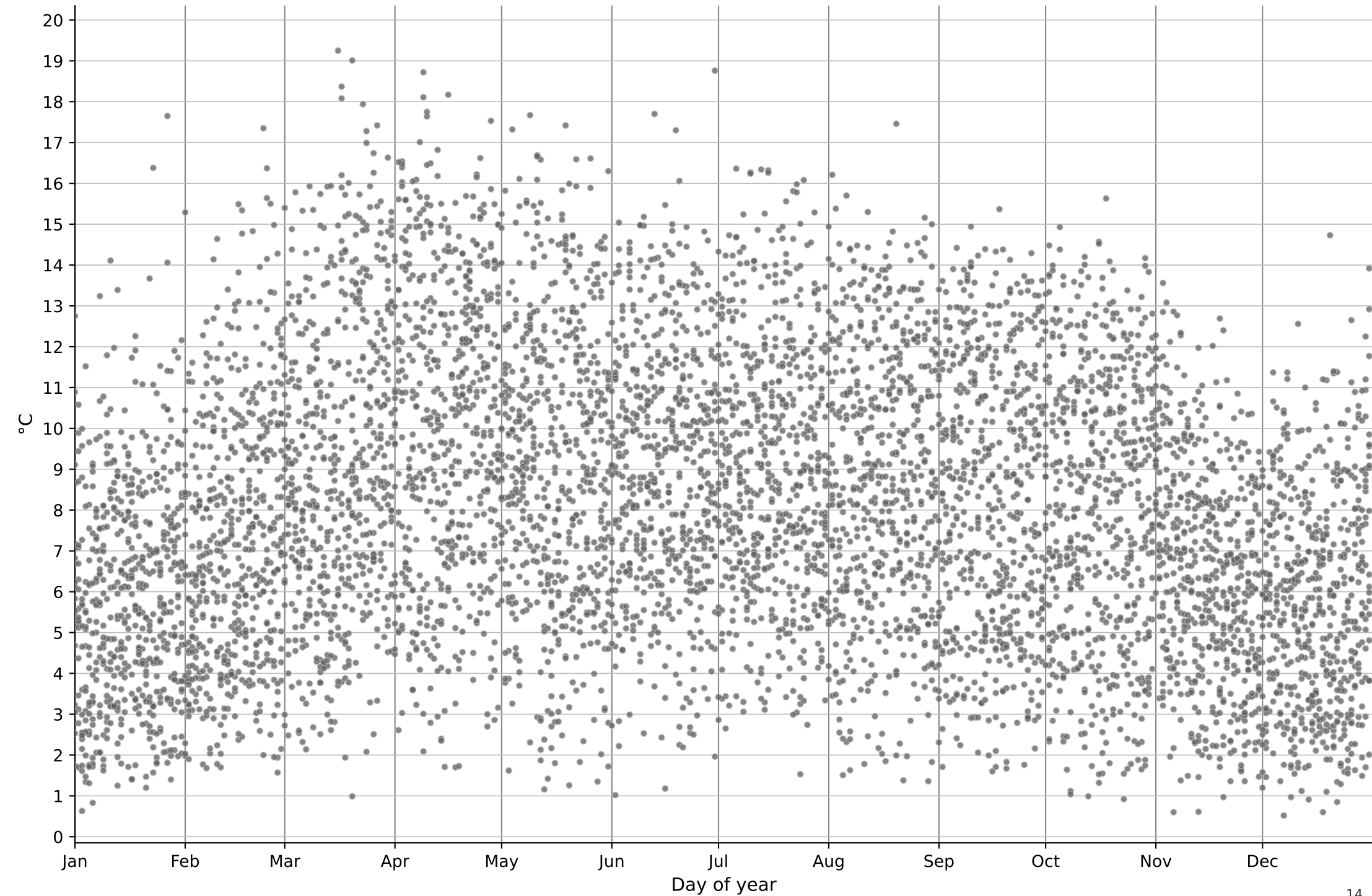
Average temperature of each day
Austria - Inning 48.182, 15.417



Lowest temperature of each day
Austria - Inning 48.182, 15.417



Difference between highest and lowest temperature of each day
Austria - Inning 48.182, 15.417



Monthly and yearly specific yield (kWh/kWp = Wh/Wp)
Austria - Inning 48.182, 15.417

Month / year		Roof East 22°/-90° 19800 Wp	Roof West 22°/90° 19800 Wp	Terrace railing south 90°/0° 4620 Wp	Terrace railing north 90°/180° 4620 Wp	Garage roof 1°/0° 10740 Wp	Garage side wall south 90°/0° 3475 Wp	All together
January	Maximum	36.85	30.08	7.26	7.26	32.84	7.26	24.61
	average	23.58	23.23	5.26	5.26	23.62	5.26	17.89
	minimum	16.80	18.03	4.09	4.09	17.95	4.09	13.98
February	Maximum	49.26	49.87	9.78	9.78	51.56	9.78	36.78
	average	40.22	41.12	8.23	8.23	41.81	8.23	30.81
	minimum	30.48	29.89	7.01	7.01	30.53	7.01	23.90
March	Maximum	99.75	99.70	40.02	16.17	103.67	40.02	75.86
	average	74.39	76.61	32.13	14.12	78.18	32.13	58.93
	minimum	59.28	58.23	23.96	12.21	60.95	23.96	47.14
April	Maximum	133.40	131.91	85.87	20.80	138.59	85.87	106.75
	average	105.31	106.56	68.54	18.98	110.61	68.54	86.50
	minimum	82.02	84.70	54.04	16.79	87.14	54.04	68.59
May	Maximum	137.57	139.02	75.98	26.21	144.59	75.98	111.72
	average	118.60	118.75	66.13	24.16	124.01	66.13	96.85
	minimum	87.34	88.28	48.94	22.30	91.48	48.94	72.75
June	Maximum	156.95	153.86	73.17	28.27	163.28	73.17	124.92
	average	128.94	130.27	62.75	26.40	135.71	62.75	105.29
	minimum	103.92	106.46	51.97	24.08	109.40	51.97	86.34
July	Maximum	152.09	151.66	77.19	27.83	158.88	77.19	121.89
	average	131.40	132.40	67.74	25.64	138.27	67.74	106.69
	minimum	97.26	99.10	50.02	23.06	102.76	50.02	80.18
August	Maximum	126.69	125.59	79.19	22.99	132.11	79.19	102.48
	average	111.62	113.81	70.61	19.99	117.75	70.61	92.08
	minimum	94.28	100.43	60.77	17.60	102.53	60.77	81.36
September	Maximum	98.66	103.01	59.73	16.42	104.79	59.73	79.69
	average	82.54	84.24	49.11	14.08	86.69	49.11	66.53
	minimum	67.58	67.69	40.19	11.80	69.95	40.19	54.53
October	Maximum	60.47	74.56	11.30	11.26	68.41	11.30	48.97
	average	50.79	54.92	9.83	9.80	54.55	9.83	39.60
	minimum	35.78	37.36	8.60	8.60	37.60	8.60	28.11
November	Maximum	32.08	33.83	6.47	6.47	33.54	6.47	24.56
	average	25.23	26.53	5.75	5.75	26.62	5.75	19.79
	minimum	19.79	20.38	5.33	5.33	20.26	5.33	15.64
December	Maximum	24.73	25.32	5.19	5.19	25.37	5.19	18.49
	average	18.98	19.08	4.19	4.19	19.18	4.19	14.52
	minimum	15.07	15.87	2.90	2.90	15.84	2.90	11.78
All years	Maximum	966.9	966.2	478.1	182.9	1005.5	478.1	770.4
	average	911.6	927.5	450.3	176.6	957.0	450.3	735.5
	minimum	855.5	881.1	423.9	171.8	908.1	423.9	701.4

Highest combined yield hour: 2009-06-13 10:10 UTC 42862.3 W (0.566 W/Wp) of 75770 Wp installed. Use this hour to size battery charge power.

Monthly and yearly specific yield (kWh/kWp = Wh/Wp)
Austria - Inning 48.182, 15.417

Month / year		Garage side wall north 90°/180° 3475 Wp	Garage door side west 90°/90° 700 Wp	Garage back side east 90°/90° 2540 Wp	Garden fence east 90°/-90° + 90°/90° 6000 Wp bifacial ×80%	All together
January	Maximum	7.26	8.02	9.10	15.51	24.61
	average	5.26	5.93	6.73	11.47	17.89
	minimum	4.09	4.60	5.29	8.97	13.98
February	Maximum	9.78	11.74	11.07	20.46	36.78
	average	8.23	10.69	9.69	18.25	30.81
	minimum	7.01	9.55	8.85	16.58	23.90
March	Maximum	16.17	20.69	20.57	37.09	75.86
	average	14.12	18.52	18.64	33.45	58.93
	minimum	12.21	16.23	16.11	29.09	47.14
April	Maximum	20.80	35.62	37.00	65.39	106.75
	average	18.98	32.57	33.18	59.23	86.50
	minimum	16.79	27.32	27.21	49.07	68.59
May	Maximum	26.21	49.99	44.67	82.61	111.72
	average	24.16	43.00	39.77	74.17	96.85
	minimum	22.30	34.42	32.92	60.46	72.75
June	Maximum	28.27	50.65	56.41	95.84	124.92
	average	26.40	45.09	48.98	85.06	105.29
	minimum	24.08	39.28	41.53	72.95	86.34
July	Maximum	27.83	49.85	48.86	88.73	121.89
	average	25.64	45.09	43.52	79.59	106.69
	minimum	23.06	36.77	33.52	62.94	80.18
August	Maximum	22.99	40.50	40.39	70.89	102.48
	average	19.99	36.73	36.67	66.05	92.08
	minimum	17.60	32.59	33.27	60.58	81.36
September	Maximum	16.42	24.07	22.91	41.44	79.69
	average	14.08	21.48	20.85	38.03	66.53
	minimum	11.80	18.89	18.24	33.35	54.53
October	Maximum	11.26	12.90	12.98	23.30	48.97
	average	9.80	11.44	11.69	20.84	39.60
	minimum	8.60	9.79	9.93	17.77	28.11
November	Maximum	6.47	7.53	7.71	13.74	24.56
	average	5.75	6.77	6.86	12.28	19.79
	minimum	5.33	6.04	6.01	10.83	15.64
December	Maximum	5.19	5.84	6.52	11.19	18.49
	average	4.19	4.82	5.42	9.28	14.52
	minimum	2.90	3.46	3.86	6.63	11.78
All years	Maximum	182.9	291.4	295.1	527.0	770.4
	average	176.6	282.1	282.0	507.7	735.5
	minimum	171.8	274.0	269.5	495.0	701.4

Highest combined yield hour: 2009-06-13 10:10 UTC 42862.3 W (0.566 W/Wp) of 75770 Wp installed. Use this hour to size battery charge power.

Monthly and yearly total yield (kWh)
Austria - Inning 48.182, 15.417

Month / year		Roof East 22°/-90° 19800 Wp	Roof West 22°/-90° 19800 Wp	Terrace railing south 90°/0° 4620 Wp	Terrace railing north 90°/180° 4620 Wp	Garage roof 1°/0° 10740 Wp	Garage side wall south 90°/0° 3475 Wp	All together
January	Maximum	729.6	595.6	33.5	33.5	352.7	25.2	1864.9
	average	466.9	459.9	24.3	24.3	253.6	18.3	1355.8
	minimum	332.6	356.9	18.9	18.9	192.8	14.2	1059.4
February	Maximum	975.3	987.5	45.2	45.2	553.7	34.0	2786.7
	average	796.4	814.2	38.0	38.0	449.0	28.6	2334.5
	minimum	603.4	591.9	32.4	32.4	327.9	24.3	1811.2
March	Maximum	1975.1	1974.1	184.9	74.7	1113.4	139.1	5747.9
	average	1473.0	1517.0	148.4	65.2	839.7	111.7	4465.1
	minimum	1173.7	1153.0	110.7	56.4	654.6	83.3	3572.1
April	Maximum	2641.2	2611.9	396.7	96.1	1488.4	298.4	8088.1
	average	2085.2	2109.9	316.6	87.7	1188.0	238.2	6554.0
	minimum	1624.0	1677.1	249.7	77.6	935.8	187.8	5197.0
May	Maximum	2723.9	2752.5	351.0	121.1	1552.9	264.0	8465.0
	average	2348.2	2351.2	305.5	111.6	1331.9	229.8	7338.3
	minimum	1729.4	1748.0	226.1	103.0	982.4	170.1	5512.0
June	Maximum	3107.7	3046.3	338.0	130.6	1753.7	254.3	9465.5
	average	2553.0	2579.3	289.9	122.0	1457.5	218.1	7977.9
	minimum	2057.6	2107.9	240.1	111.3	1175.0	180.6	6542.4
July	Maximum	3011.4	3002.9	356.6	128.6	1706.4	268.2	9235.5
	average	2601.8	2621.5	313.0	118.5	1485.0	235.4	8083.8
	minimum	1925.8	1962.3	231.1	106.6	1103.6	173.8	6075.0
August	Maximum	2508.4	2486.6	365.8	106.2	1418.8	275.2	7765.3
	average	2210.0	2253.5	326.2	92.3	1264.6	245.4	6976.7
	minimum	1866.7	1988.4	280.8	81.3	1101.1	211.2	6164.8
September	Maximum	1953.4	2039.7	275.9	75.9	1125.4	207.6	6037.9
	average	1634.2	1667.9	226.9	65.0	931.1	170.6	5040.8
	minimum	1338.2	1340.3	185.7	54.5	751.2	139.7	4131.9
October	Maximum	1197.2	1476.2	52.2	52.0	734.7	39.3	3710.3
	average	1005.7	1087.5	45.4	45.3	585.9	34.2	3000.8
	minimum	708.5	739.7	39.7	39.7	403.9	29.9	2129.9
November	Maximum	635.3	669.8	29.9	29.9	360.3	22.5	1860.6
	average	499.6	525.4	26.6	26.6	285.9	20.0	1499.8
	minimum	391.8	403.6	24.6	24.6	217.6	18.5	1185.4
December	Maximum	489.6	501.3	24.0	24.0	272.5	18.0	1401.0
	average	375.8	377.8	19.3	19.3	206.0	14.5	1100.2
	minimum	298.3	314.2	13.4	13.4	170.1	10.1	892.3
All years	Maximum	19145	19132	2209	845	10799	1662	58372
	average	18050	18365	2080	816	10278	1565	55728
	minimum	16939	17445	1958	794	9753	1473	53147

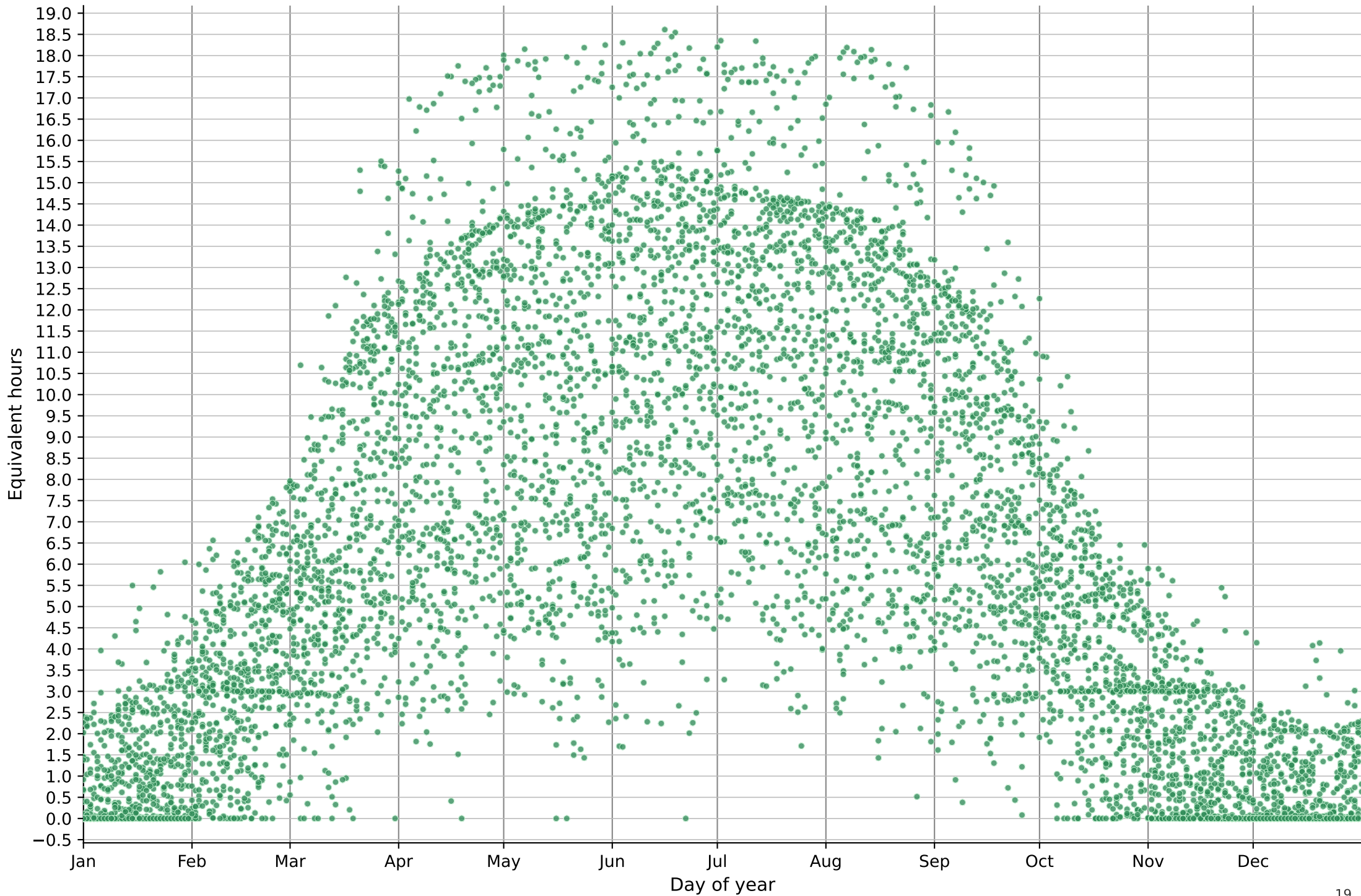
Highest combined yield hour: 2009-06-13 10:10 UTC 42862.3 W (0.566 W/Wp) of 75770 Wp installed. Use this hour to size battery charge power.

Monthly and yearly total yield (kWh)
Austria - Inning 48.182, 15.417

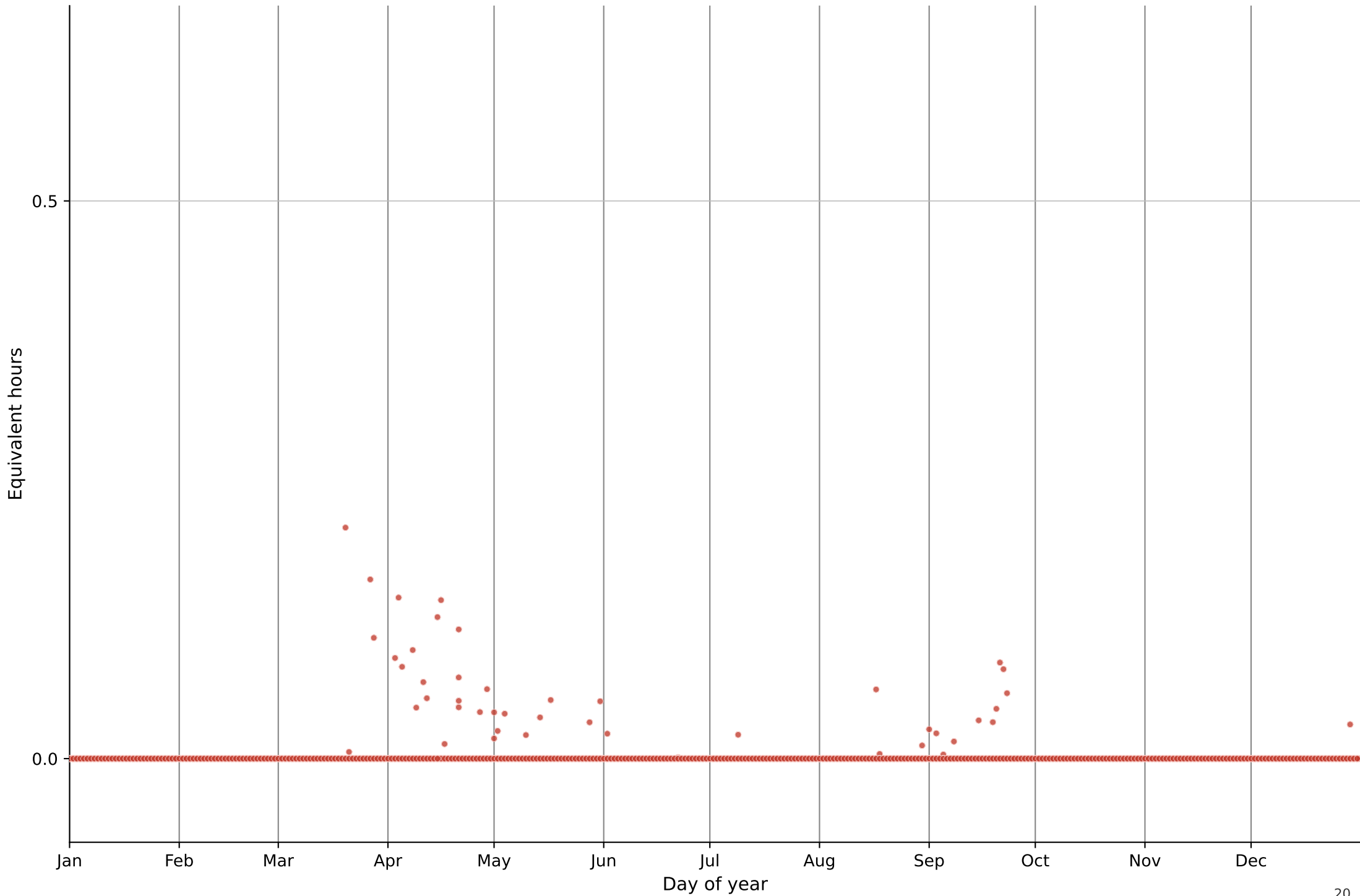
Month / year		Garage side wall north 90°/180° 3475 Wp	Garage door side west 90°/90° 700 Wp	Garage back side east 90°/90° 2540 Wp	Garden fence east 90°/-90° + 90°/90° 6000 Wp bifacial ×80%	All together
January	Maximum	25.2	5.6	23.1	93.1	1864.9
	average	18.3	4.2	17.1	68.8	1355.8
	minimum	14.2	3.2	13.4	53.8	1059.4
February	Maximum	34.0	8.2	28.1	122.8	2786.7
	average	28.6	7.5	24.6	109.5	2334.5
	minimum	24.3	6.7	22.5	99.5	1811.2
March	Maximum	56.2	14.5	52.2	222.6	5747.9
	average	49.1	13.0	47.3	200.7	4465.1
	minimum	42.4	11.4	40.9	174.5	3572.1
April	Maximum	72.3	24.9	94.0	392.3	8088.1
	average	65.9	22.8	84.3	355.4	6554.0
	minimum	58.3	19.1	69.1	294.4	5197.0
May	Maximum	91.1	35.0	113.5	495.7	8465.0
	average	83.9	30.1	101.0	445.0	7338.3
	minimum	77.5	24.1	83.6	362.8	5512.0
June	Maximum	98.2	35.5	143.3	575.0	9465.5
	average	91.8	31.6	124.4	510.3	7977.9
	minimum	83.7	27.5	105.5	437.7	6542.4
July	Maximum	96.7	34.9	124.1	532.4	9235.5
	average	89.1	31.6	110.5	477.5	8083.8
	minimum	80.1	25.7	85.1	377.7	6075.0
August	Maximum	79.9	28.4	102.6	425.4	7765.3
	average	69.5	25.7	93.1	396.3	6976.7
	minimum	61.2	22.8	84.5	363.5	6164.8
September	Maximum	57.1	16.8	58.2	248.7	6037.9
	average	48.9	15.0	53.0	228.2	5040.8
	minimum	41.0	13.2	46.3	200.1	4131.9
October	Maximum	39.1	9.0	33.0	139.8	3710.3
	average	34.1	8.0	29.7	125.0	3000.8
	minimum	29.9	6.9	25.2	106.6	2129.9
November	Maximum	22.5	5.3	19.6	82.4	1860.6
	average	20.0	4.7	17.4	73.7	1499.8
	minimum	18.5	4.2	15.3	65.0	1185.4
December	Maximum	18.0	4.1	16.6	67.1	1401.0
	average	14.5	3.4	13.8	55.7	1100.2
	minimum	10.1	2.4	9.8	39.8	892.3
All years	Maximum	636	204	750	3162	58372
	average	614	197	716	3046	55728
	minimum	597	192	684	2970	53147

Highest combined yield hour: 2009-06-13 10:10 UTC 42862.3 W (0.566 W/Wp) of 75770 Wp installed. Use this hour to size battery charge power.

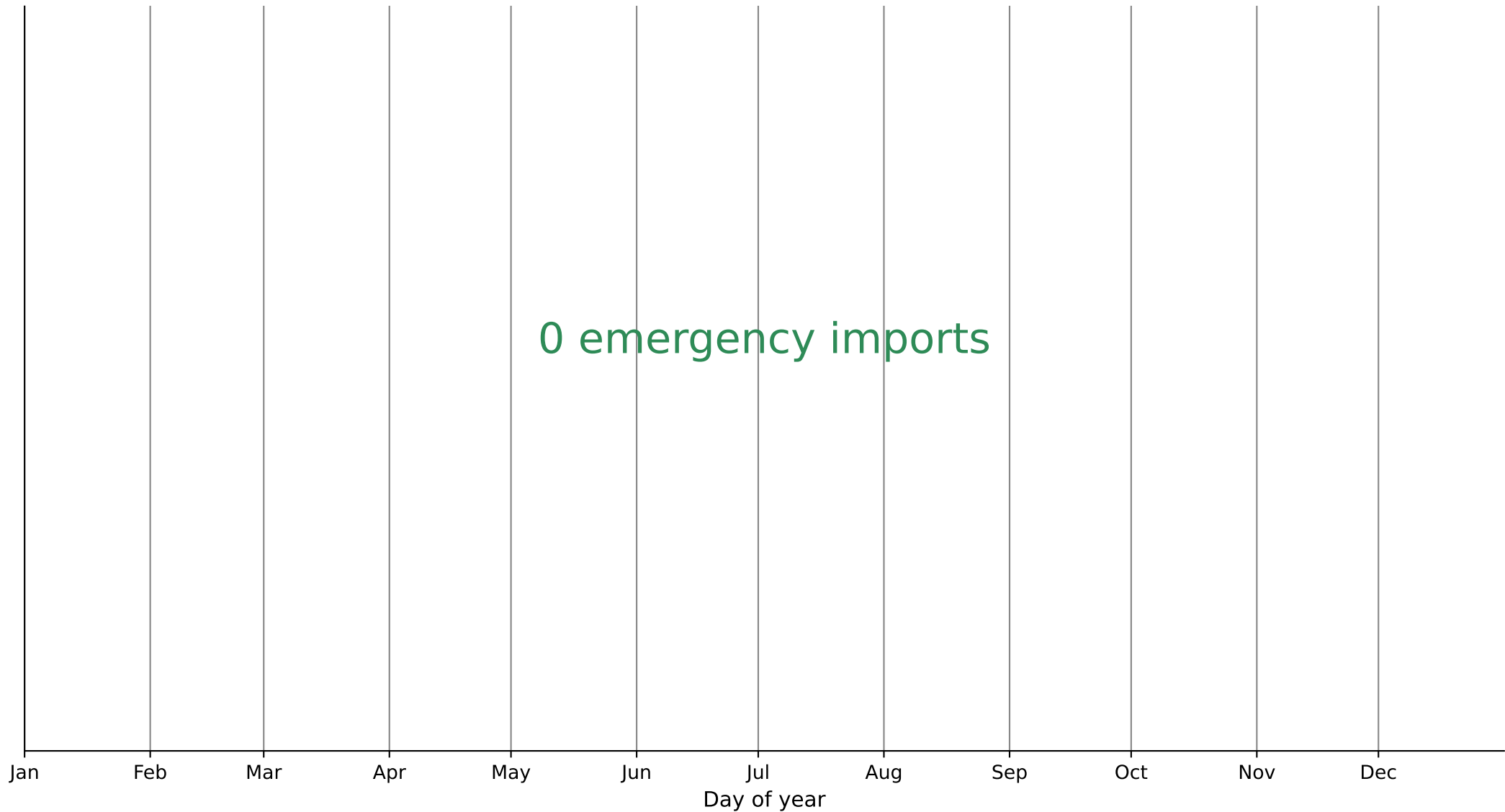
Export energy as equivalent hours (kWh / grid kW)
Austria - Inning 48.182, 15.417



Import energy as equivalent hours (kWh / grid kW)
Austria - Inning 48.182, 15.417



Emergency import hours: 0 days with an emergency: 0
Austria - Inning 48.182, 15.417



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

Austria - Inning 48.182, 15.417

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export to grid													
month Maximum	944	2034	4649	5835	6116	6605	6742	5881	4737	2787	1067	648	41454
month average	569	1581	3489	4824	5245	5727	5879	5305	3968	2136	742	343	39808
month minimum	305	1063	2658	3645	4121	4740	4323	4715	3136	1312	446	178	37835
day Maximum	102.8	132.8	263.6	306.1	310.2	316.4	312.0	309.2	283.4	208.5	100.2	70.5	316.4
day average	18.4	56.0	112.5	160.8	169.2	190.9	189.6	171.1	132.3	68.9	24.7	11.1	109.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	29.1	8.7	1.4	0.0	0.0	-0.0	-0.0
Import from grid													
month Maximum	0	0	4	5	1	0	0	1	1	0	0	1	8
month average	0	0	0	1	0	0	0	0	0	0	0	0	2
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	0
day Maximum	0.0	0.0	3.5	2.5	0.9	0.4	0.4	1.1	1.5	0.0	0.0	0.5	3.5
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
Total energy used for house													
month Maximum	735	683	681	604	582	521	519	524	546	620	649	723	7189
month average	690	621	650	578	557	502	500	502	521	591	619	676	7008
month minimum	655	590	622	540	527	483	488	483	491	559	600	647	6882
day Maximum	26.7	26.1	25.5	22.4	22.9	22.3	21.6	20.4	20.2	22.2	23.9	25.6	26.7
day average	22.3	22.0	21.0	19.3	18.0	16.7	16.1	16.2	17.4	19.1	20.6	21.8	19.2
day minimum	15.9	18.5	17.8	15.4	15.3	15.3	15.2	15.2	15.2	16.1	17.5	18.9	15.2

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
Austria - Inning 48.182, 15.417

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export													
month Maximum	187	375	626	570	606	594	627	612	563	474	210	135	5042
month average	113	294	522	527	546	559	583	569	505	377	150	70	4814
month minimum	58	209	445	458	479	496	494	528	441	245	92	33	4590
day Maximum	22.1	23.6	31.3	29.9	32.0	31.9	31.9	29.2	28.4	27.9	22.0	15.5	32.0
day average	3.6	10.4	16.8	17.6	17.6	18.6	18.8	18.3	16.8	12.1	5.0	2.3	13.2
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	5.1	1.0	0.3	0.0	0.0	-0.0	-0.0
Import													
month Maximum	0	0	1	1	0	0	0	0	1	0	0	0	2
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	0
day Maximum	0.0	0.0	0.9	0.7	0.2	0.1	0.1	0.4	0.5	0.0	0.0	0.1	0.9
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	11	9	6	2	2	7	7	0	0	3	23
month average	0	0	2	4	2	0	0	0	2	0	0	0	10
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	1
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	12	9	6	3	2	7	7	0	0	3	25
month average	0	0	2	5	2	0	0	0	2	0	0	0	11
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	1
day Maximum	0.0	0.0	0.9	0.7	0.2	0.1	0.1	0.4	0.5	0.0	0.0	0.1	0.9
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	187	375	626	566	604	594	627	612	558	474	210	135	5041
month average	113	294	520	522	544	559	583	568	503	377	150	70	4803
month minimum	58	209	445	451	479	496	494	528	441	245	92	30	4568
day Maximum	22.1	23.6	31.3	29.9	32.0	31.9	31.9	29.2	28.4	27.9	22.0	15.5	32.0
day average	3.6	10.4	16.8	17.5	17.6	18.6	18.8	18.3	16.8	12.1	5.0	2.3	13.2
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	5.1	1.0	0.3	0.0	0.0	-0.1	-0.1

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
Austria - Inning 48.182, 15.417

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export total													
month Maximum	944	2034	4649	5835	6116	6605	6742	5881	4737	2787	1067	648	41454
month average	569	1581	3489	4824	5245	5727	5879	5305	3968	2136	742	343	39808
month minimum	305	1063	2658	3645	4121	4740	4323	4715	3136	1312	446	178	37835
day Maximum	102.8	132.8	263.6	306.1	310.2	316.4	312.0	309.2	283.4	208.5	100.2	70.5	316.4
day average	18.4	56.0	112.5	160.8	169.2	190.9	189.6	171.1	132.3	68.9	24.7	11.1	109.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	29.1	8.7	1.4	0.0	0.0	-0.0	-0.0
Export during high price hours													
month Maximum	903	1862	2394	2000	1974	1837	1906	2141	2179	2248	1044	647	19139
month average	540	1439	2120	1842	1811	1712	1816	1930	2010	1783	729	338	18069
month minimum	272	1014	1942	1695	1642	1570	1701	1830	1749	1265	412	158	17194
day Maximum	98.5	102.0	97.8	93.3	96.0	94.9	94.7	93.7	97.7	99.2	100.2	70.5	102.0
day average	17.4	51.0	68.4	61.4	58.4	57.1	58.6	62.3	67.0	57.5	24.3	10.9	49.5
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	29.1	8.7	1.4	0.0	0.0	0.0	0.0
Export during medium price hours													
month Maximum	48	234	2096	3280	3469	3905	4059	3237	2343	572	34	20	19983
month average	29	142	1216	2475	2822	3262	3362	2816	1744	353	13	6	18241
month minimum	4	49	526	1547	1912	2528	2157	2444	1066	47	3	0	16821
day Maximum	8.2	50.7	171.0	200.8	201.6	202.5	203.2	203.7	186.3	138.6	7.0	4.9	203.7
day average	0.9	5.0	39.2	82.5	91.0	108.7	108.5	90.8	58.1	11.4	0.4	0.2	49.9
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	341	860	910	1129	957	813	322	1	0	0	3949
month average	0	0	153	506	612	753	701	559	213	0	0	0	3498
month minimum	0	0	23	185	349	443	312	328	112	0	0	0	3010
day Maximum	0.0	0.0	34.0	53.1	68.0	68.0	67.2	51.0	38.3	1.3	0.0	0.0	68.0
day average	0.0	0.0	4.9	16.9	19.8	25.1	22.6	18.0	7.1	0.0	0.0	0.0	9.6
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
Austria - Inning 48.182, 15.417

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Heating													
month Maximum	242	222	188	133	97	55	42	46	81	133	176	234	1478
month average	198	173	159	108	75	38	25	27	58	106	147	187	1300
month minimum	162	145	131	74	47	22	14	8	31	76	128	158	1182
day Maximum	10.8	10.2	9.6	6.7	7.2	6.6	6.1	5.0	4.5	6.5	8.1	9.8	10.8
day average	6.4	6.1	5.1	3.6	2.4	1.3	0.8	0.9	1.9	3.4	4.9	6.0	3.6
day minimum	0.0	2.8	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.0	3.2	0.0
Cooling													
month Maximum	0.00	0.00	0.00	0.00	0.00	0.00	2.96	1.85	0.00	0.00	0.00	0.00	2.96
month average	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.20	0.00	0.00	0.00	0.00	0.43
month minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
day Maximum	0.00	0.00	0.00	0.00	0.00	0.00	2.96	1.48	0.00	0.00	0.00	0.00	2.96
day average	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
day minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DHW													
month Maximum	59	55	58	52	51	45	43	44	45	54	53	55	601
month average	59	53	58	50	49	43	41	41	43	51	52	55	595
month minimum	58	52	57	46	46	41	39	40	40	49	51	55	583
day Maximum	1.9	1.9	1.9	1.8	1.8	1.8	1.6	1.6	1.7	1.8	1.8	1.8	1.9
day average	1.9	1.9	1.9	1.7	1.6	1.4	1.3	1.3	1.4	1.7	1.7	1.8	1.6
day minimum	1.8	1.7	1.6	1.3	1.3	1.3	1.2	1.2	1.2	1.4	1.5	1.7	1.2
Direct electric													
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

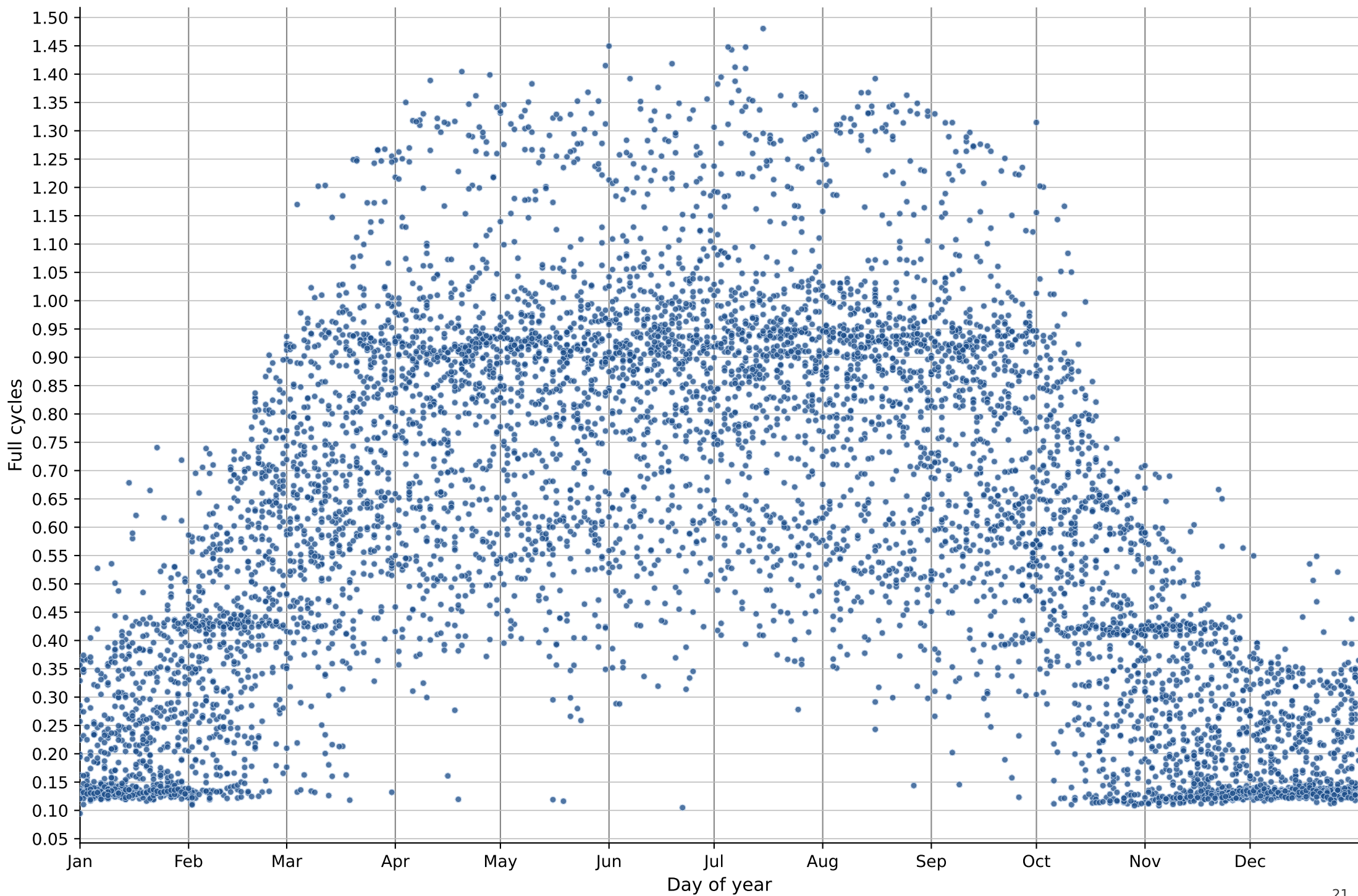
Heating, cooling and DHW are electricity. Direct electric is the part the heat pump could not cover.

Battery
Austria - Inning 48.182, 15.417

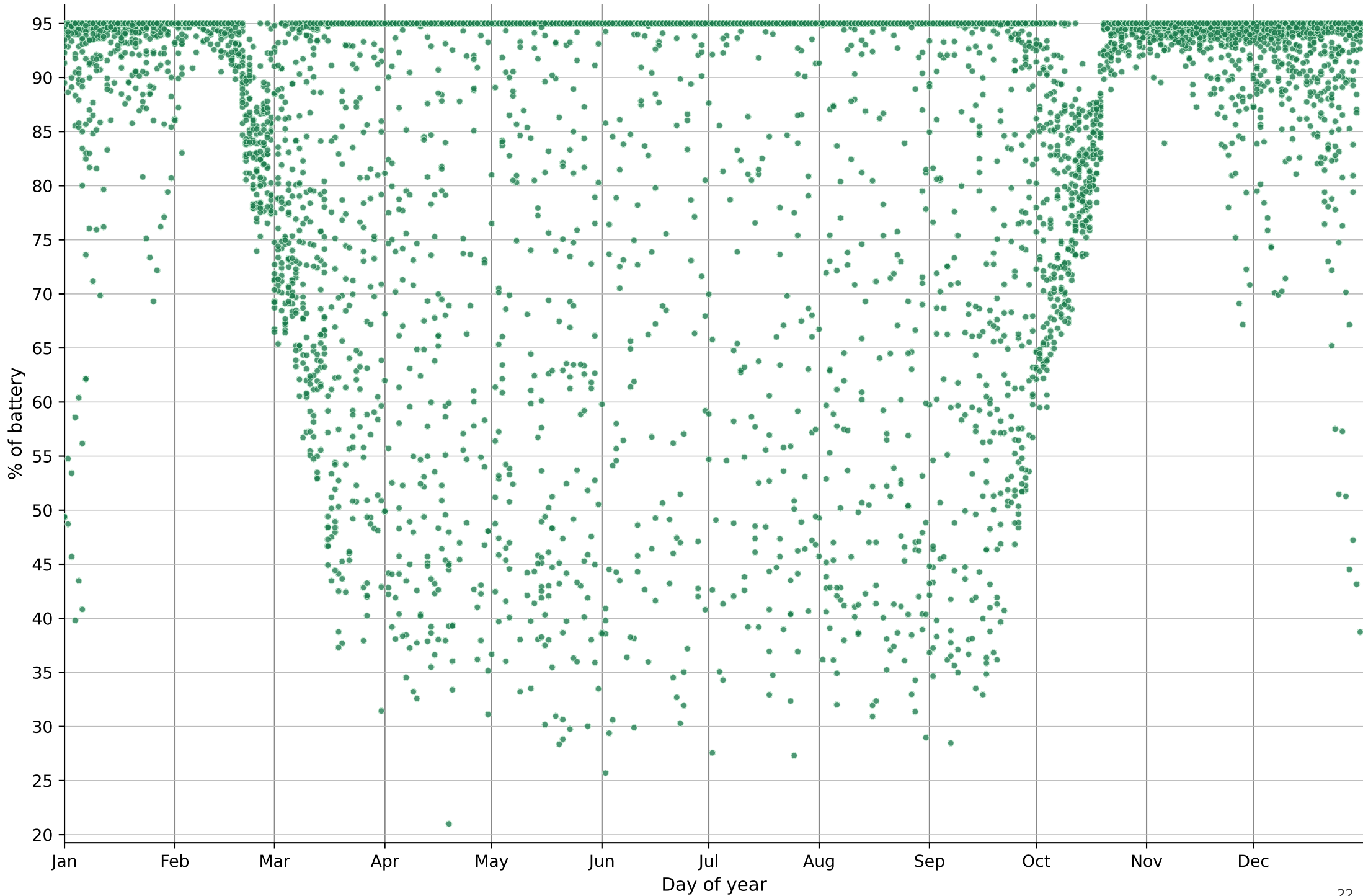
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Wasted													
month Maximum	0	0	96	1369	1557	1979	1690	1086	332	0	0	0	6975
month average	0	0	50	801	1166	1369	1310	808	194	0	0	0	5698
month minimum	0	0	4	402	486	852	871	524	46	0	0	0	4747
day Maximum	0.0	0.0	27.0	128.6	145.1	161.0	139.3	121.0	60.5	0.0	0.0	0.0	161.0
day average	0.0	0.0	1.6	26.7	37.6	45.6	42.3	26.1	6.5	0.0	0.0	0.0	15.6
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	9.66	15.03	26.02	26.62	28.50	27.77	29.15	28.01	25.81	19.53	9.71	7.66	231.09
month average	7.26	12.61	21.91	24.53	25.79	26.31	27.19	25.89	22.79	16.02	7.98	6.01	224.29
month minimum	5.64	9.71	18.76	20.95	22.63	23.60	23.17	24.32	19.27	11.28	6.20	5.07	215.72
day Maximum	0.74	0.90	1.27	1.40	1.42	1.45	1.48	1.39	1.33	1.31	0.71	0.55	1.48
day average	0.23	0.45	0.71	0.82	0.83	0.88	0.88	0.84	0.76	0.52	0.27	0.19	0.61
day minimum	0.09	0.11	0.12	0.12	0.12	0.10	0.28	0.14	0.12	0.11	0.11	0.11	0.09
Charge C													
month Maximum	0.10	0.15	0.21	0.23	0.23	0.23	0.23	0.22	0.21	0.16	0.11	0.08	2.09
month average	0.09	0.14	0.20	0.22	0.23	0.22	0.22	0.21	0.20	0.15	0.10	0.07	2.05
month minimum	0.08	0.12	0.19	0.22	0.22	0.21	0.21	0.21	0.19	0.14	0.10	0.07	2.02
day Maximum	0.10	0.15	0.21	0.23	0.23	0.23	0.23	0.22	0.21	0.16	0.11	0.08	0.23
day average	0.05	0.09	0.13	0.18	0.18	0.19	0.19	0.17	0.15	0.09	0.06	0.05	0.13
day minimum	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.01	0.01	0.01
Discharge C													
month Maximum	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1.33
month average	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	1.31
month minimum	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.11	1.31
day Maximum	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
day average	0.06	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.07	0.05	0.09
day minimum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.05	0.01	0.01	0.01	0.01

Wasted = PV left when the export price is negative and the battery is full. Full cycles = discharge kWh / 176.8 kWh. Battery export only into hours whose export price is above 0, highest price first. At 0 cent on

Battery cycles per day (discharge / 176.8 kWh)
Austria - Inning 48.182, 15.417



Battery max charge state per day (176.8 kWh = 100 %)
Austria - Inning 48.182, 15.417



Battery min charge state per day (176.8 kWh = 100 %)
Austria - Inning 48.182, 15.417

