

Heat Pump Tariff 5kWh Battery

Workspace

Site location

home (51.67, -1.92) · UTC

Battery

generic (5 kWh)

Inverter

Fox ESS H1-5.0-E (5 kW)

setpoints: Auto-optmise battery setpoints

Solar Arrays

easat (Jinko Tiger Neo 54HL4R 445W, 7 panels, 3.1 kW)

west (Jinko Tiger Neo 54HL4R 445W, 7 panels, 3.1 kW)

Load profile

house load (3,500 kWh/yr)

Heat pump

heat pump (rated 5,000 W · design house 21 °C · design flow 45 °C)

Tariff

Heat pump example (UK)
import: 0.15, 0.28, 0.45 · export: 0.12 · daily standing: 0.60

Summary			
☀ Solar Generated	5,322 kWh	(5,322 (utilised) + 0 (clipped))	
⚡ Load Consumed	7,341 kWh	1,982 GBP	(cost without solar)
🔧 Space heating electric (heat pump)	3,152 kWh	(thermal generated 13,636)	
🔧 Hot water electric (heat pump)	689 kWh	(thermal generated 2,173)	
🔌 Grid Import	4,321 kWh	889 GBP	(0.21 (average import price GBP/kWh))
🔌 Grid Export	2,168 kWh	260 GBP	(0.12 (average export price GBP/kWh))
\$ Total benefit from solar & battery	1,353 GBP		
\$ New electricity bill	848 GBP (889 (import) - 260 (export) + 219 (standing))		

Self-Consumption

Share of load met from PV and batteries vs grid import.

41.1%

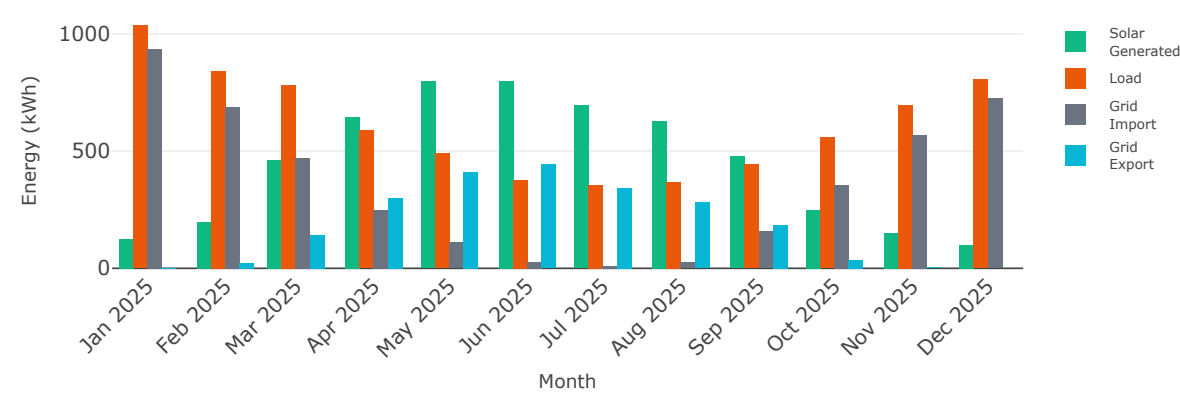
Spring: 55.3% Summer: 94.5%
Autumn: 36.2% Winter: 12.5%

Category	Value
Self-Consumption	3,020 kWh
Grid Import	4,321 kWh

Yearly Summary

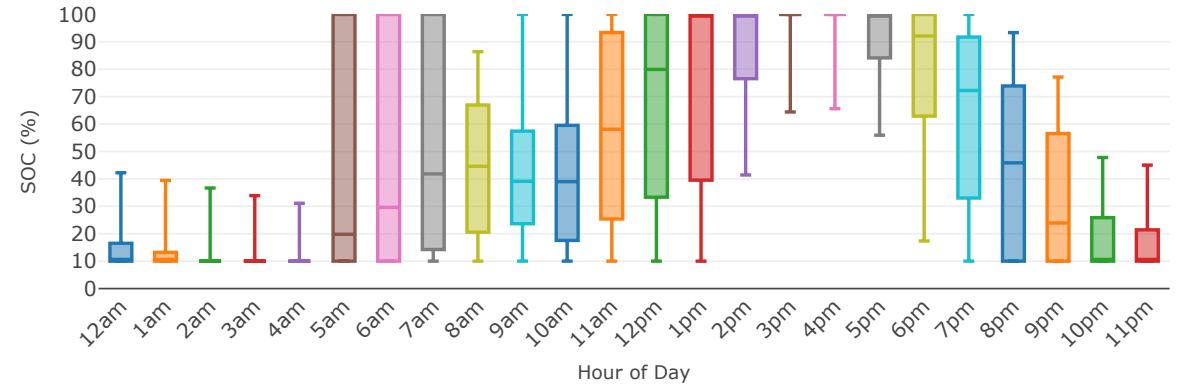
Monthly Energy Totals

Energy flows by month: solar, load, grid import, grid export.



SOC Distribution by Hour

Spread of battery charge levels by hour (box plot).



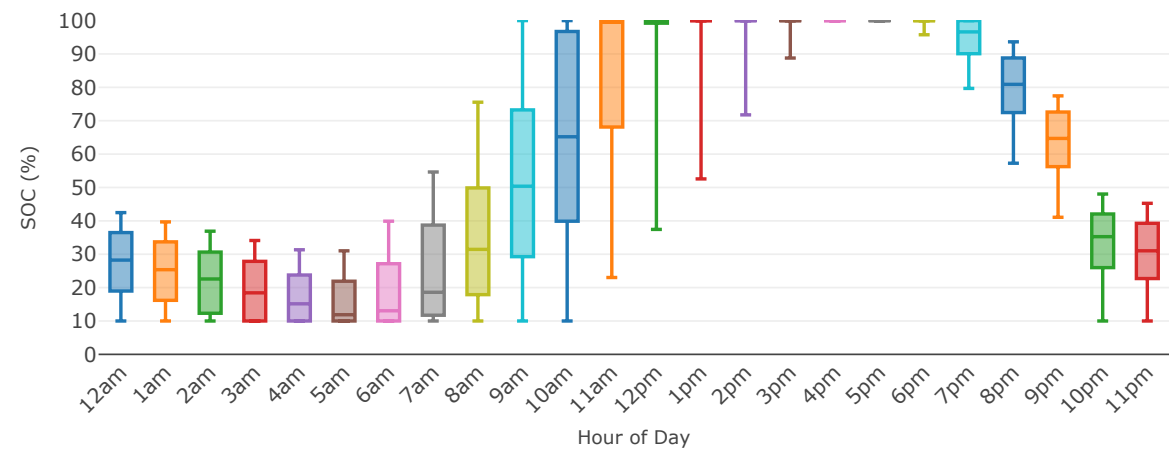
Monthly Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Solar Generated kWh	124	197	461	646	798	800	694	628	476	248	150	100
Load kWh	1,036	843	781	588	490	378	355	367	444	558	696	805
Average SOC %	39	44	48	49	55	62	60	53	48	47	45	41
Grid Import kWh/GBP	935 / 196	688 / 141	471 / 98	249 / 53	111 / 25	26 / 6	9 / 2	25 / 5	158 / 32	355 / 71	570 / 115	725 / 145
Grid Export kWh/GBP	0 / 0	22 / 3	143 / 17	300 / 36	412 / 49	442 / 53	344 / 41	281 / 34	185 / 22	35 / 4	4 / 0	0 / 0
Net electricity cost GBP	196	138	81	17	-24	-47	-40	-28	10	66	115	145

Summer Monthly Summary

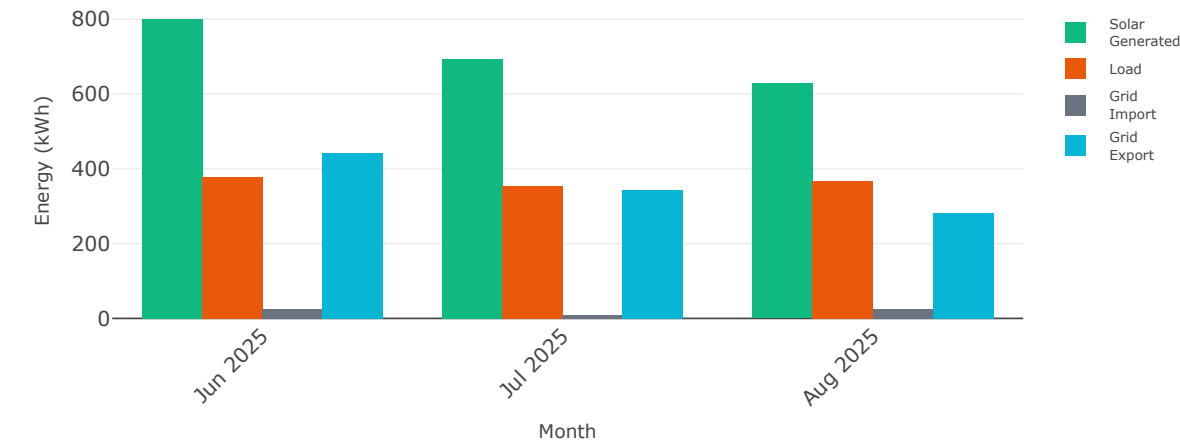
Summer SOC Distribution by Hour

Spread of battery charge levels by hour for June, July, August.



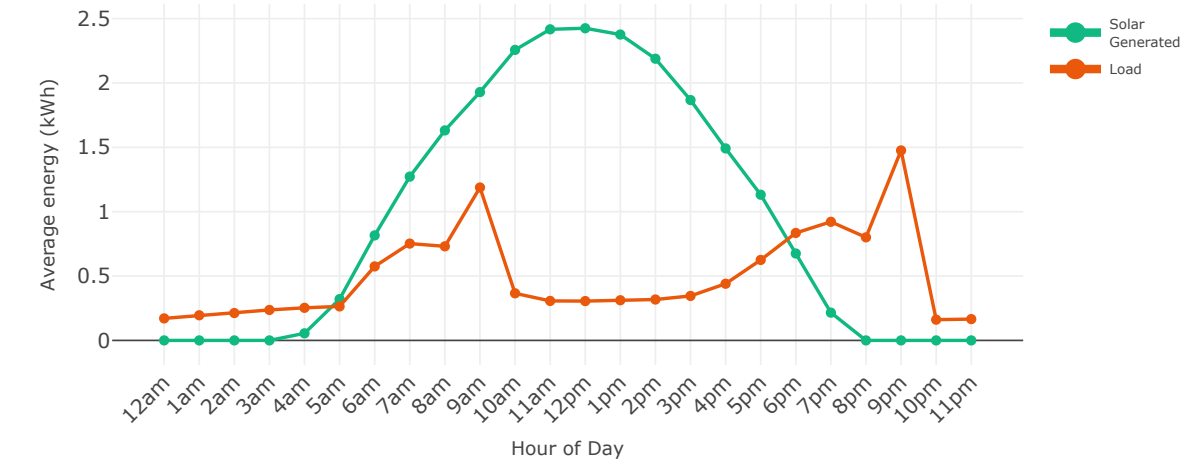
Summer Energy Totals by Month

Energy flows for June, July, August: solar, load, grid import, grid export.



Summer Hourly Average Energy

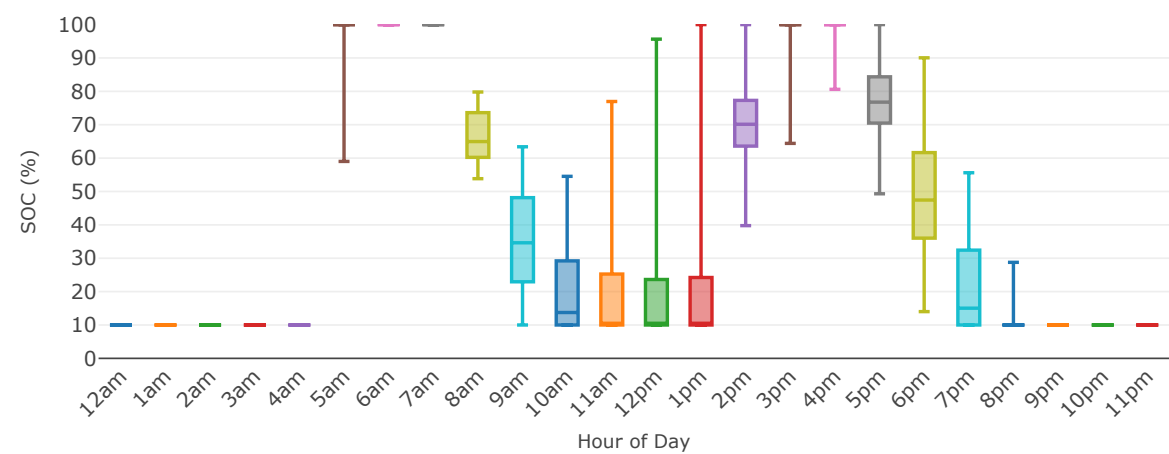
Average hourly solar generation vs load for that season's months.



Winter Monthly Summary

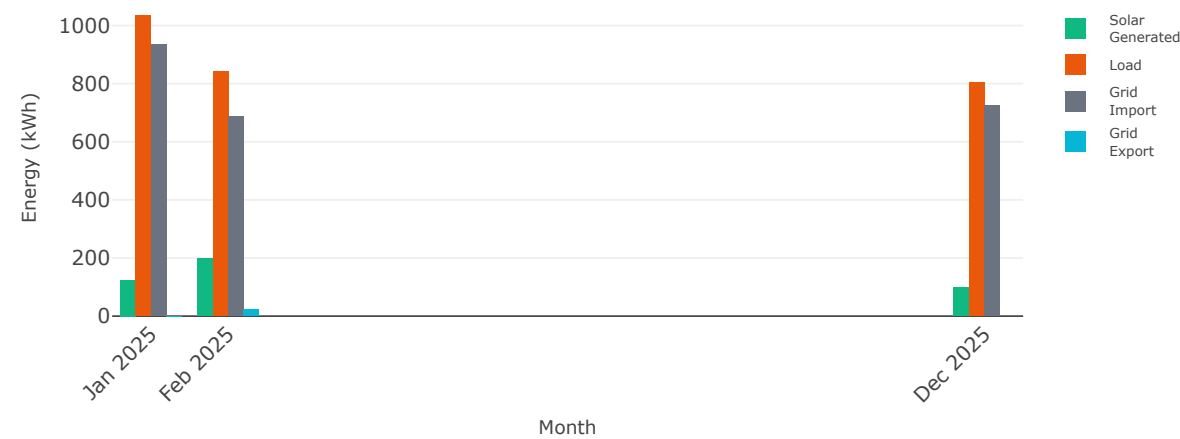
Winter SOC Distribution by Hour

Spread of battery charge levels by hour for December, January, February.



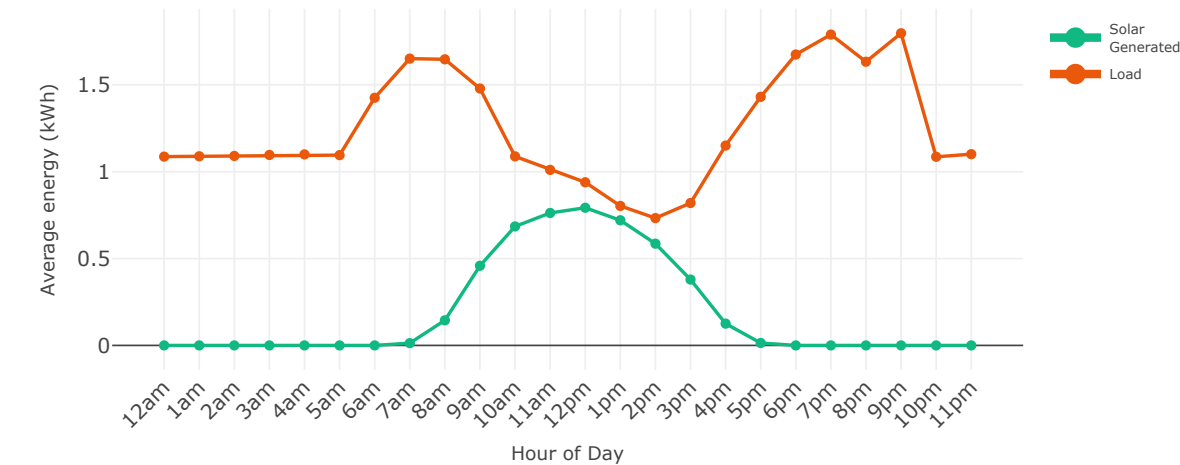
Winter Energy Totals by Month

Energy flows for December, January, February: solar, load, grid import, grid export.



Winter Hourly Average Energy

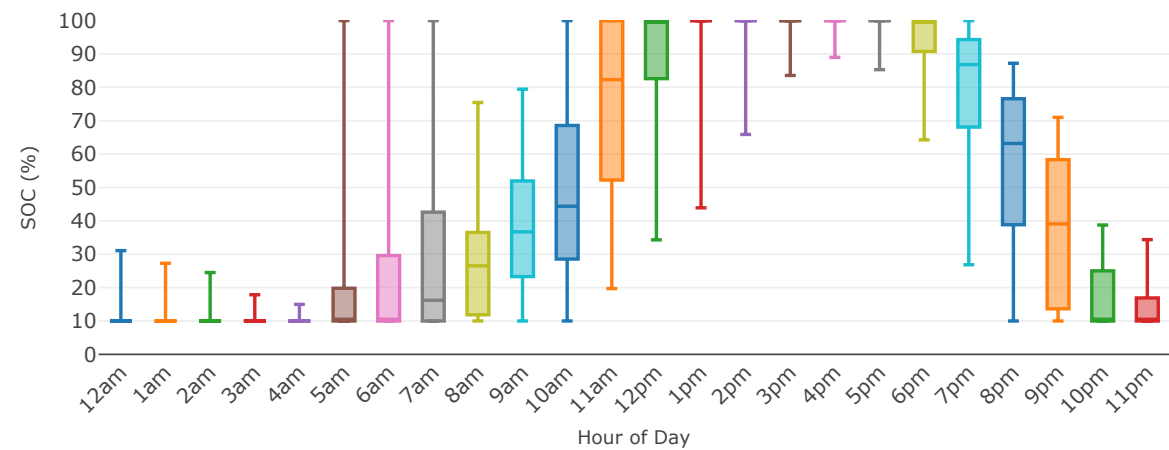
Average hourly solar generation vs load for that season's months.



Spring Monthly Summary

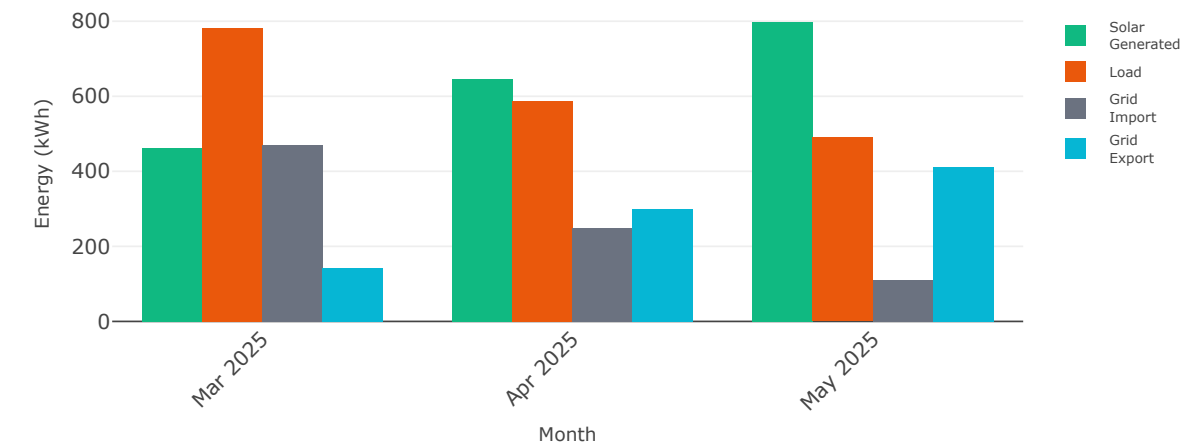
Spring SOC Distribution by Hour

Spread of battery charge levels by hour for March, April, May.



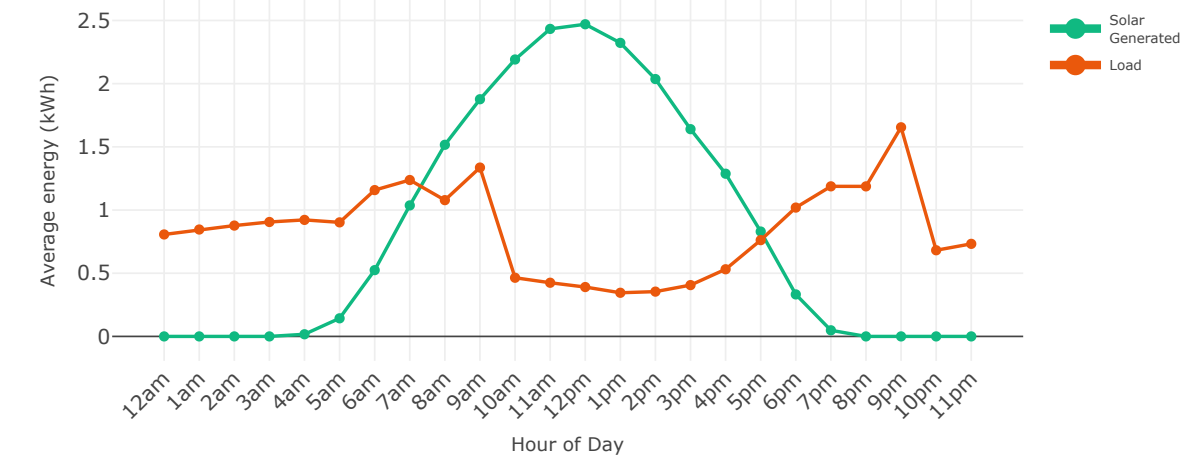
Spring Energy Totals by Month

Energy flows for March, April, May: solar, load, grid import, grid export.



Spring Hourly Average Energy

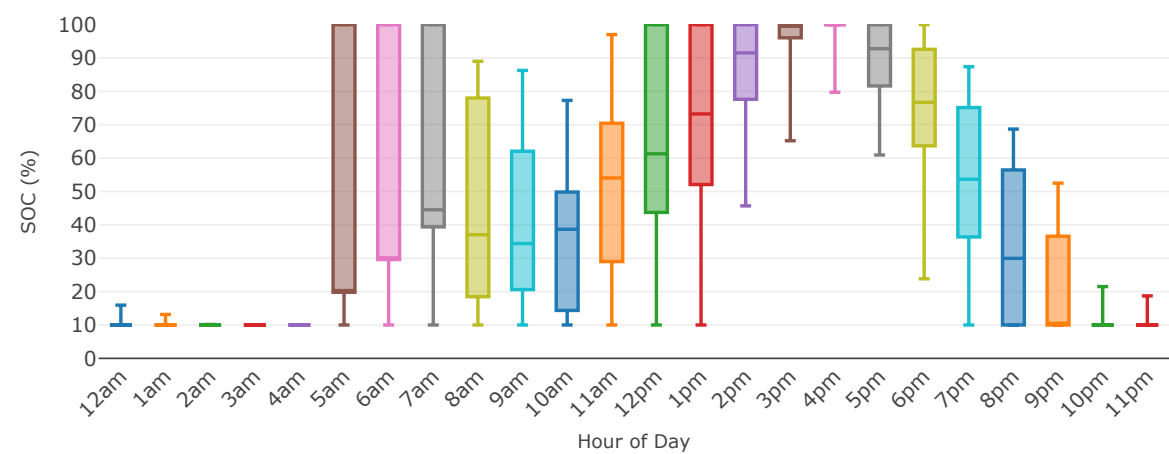
Average hourly solar generation vs load for that season's months.



Autumn Monthly Summary

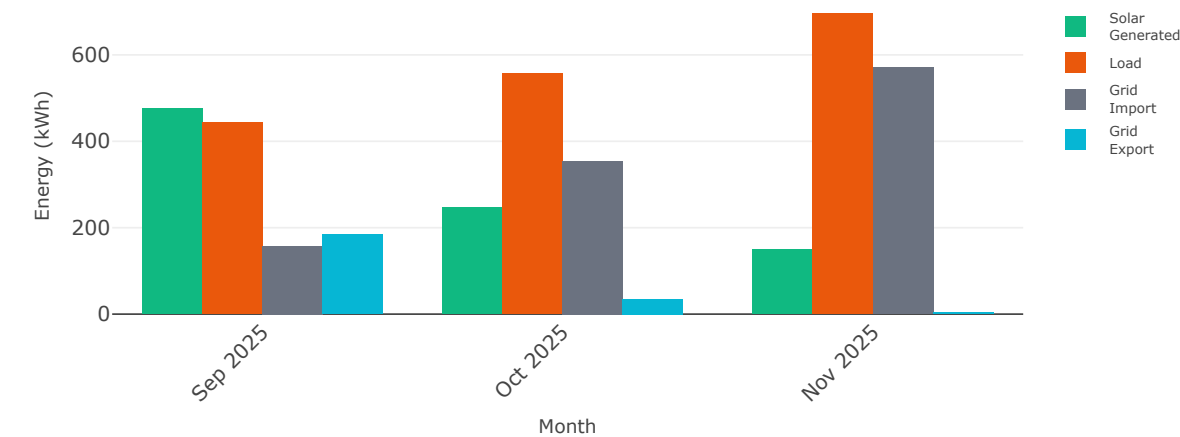
Autumn SOC Distribution by Hour

Spread of battery charge levels by hour for September, October, November.



Autumn Energy Totals by Month

Energy flows for September, October, November: solar, load, grid import, grid export.



Autumn Hourly Average Energy

Average hourly solar generation vs load for that season's months.

