

Fixed Tariff 10kWh battery

Workspace

Site location

UK-Gloucester (51.89, -2.19) · UTC

Battery

10kWh (10 kWh)

Inverter

Fox ESS H1-5.0-E (5 kW)

setpoints: Auto-optimize battery setpoints

Solar Arrays

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

east (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

fixed
import: 0.28 · export: 0.12 · daily standing: 0.60

Summary		
Solar Generated	5,408 kWh	(5,408 (utilised) + 0 (clipped))
Load Consumed	7,423 kWh	2,079 GBP (cost without solar)
Space heating electric (heat pump)	3,216 kWh	(thermal generated 13,931)
Hot water electric (heat pump)	707 kWh	(thermal generated 2,190)
Grid Import	3,870 kWh	1,084 GBP (0.28 (average import price GBP/kWh))
Grid Export	1,784 kWh	214 GBP (0.12 (average export price GBP/kWh))
Total benefit from solar & battery	1,209 GBP	
New electricity bill	1,088 GBP	(1,084 (import) - 214 (export) + 219 (standing))

Self-Consumption

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

47.9%

Spring: 68.1% Summer: 99.9%
Autumn: 43.1% Winter: 15.4%

Self-Consumption	3,554 kWh
Grid Import	3,870 kWh

Yearly Summary

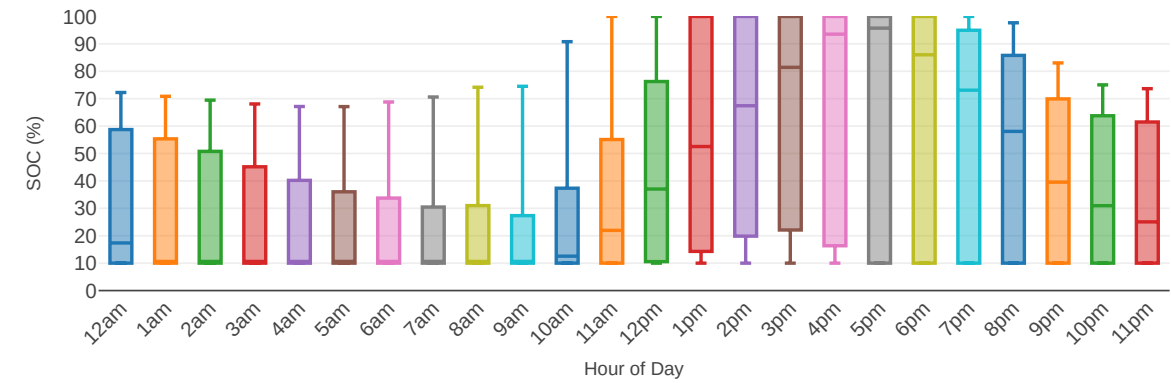
Monthly Energy Totals

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



SOC Distribution by Hour

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



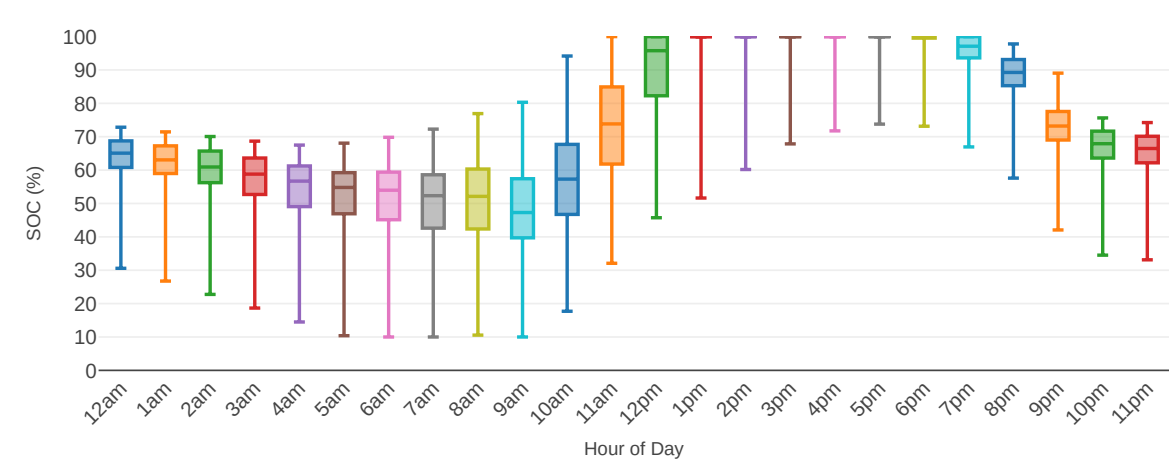
Monthly Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Solar Generated kWh	137	187	456	639	812	784	769	669	461	257	139	99
Load kWh	1,048	840	778	590	484	387	364	376	457	574	709	817
Average SOC %	11	15	32	46	60	73	76	69	43	22	12	11
Grid Import kWh/GBP	912 / 255	656 / 184	392 / 110	167 / 47	32 / 9	0 / 0	0 / 0	1 / 0	97 / 27	321 / 90	572 / 160	719 / 201
Grid Export kWh/GBP	0 / 0	0 / 0	58 / 7	203 / 24	350 / 42	390 / 47	399 / 48	288 / 35	94 / 11	2 / 0	0 / 0	0 / 0
Net electricity cost GBP	255	184	103	22	-33	-47	-48	-34	16	90	160	201

Summer Monthly Summary

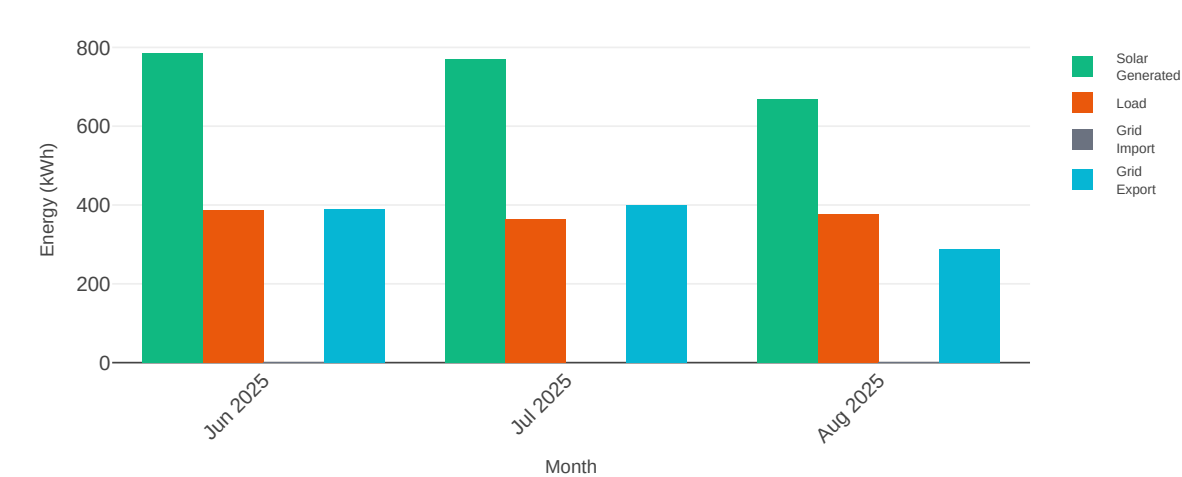
Summer SOC Distribution by Hour

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



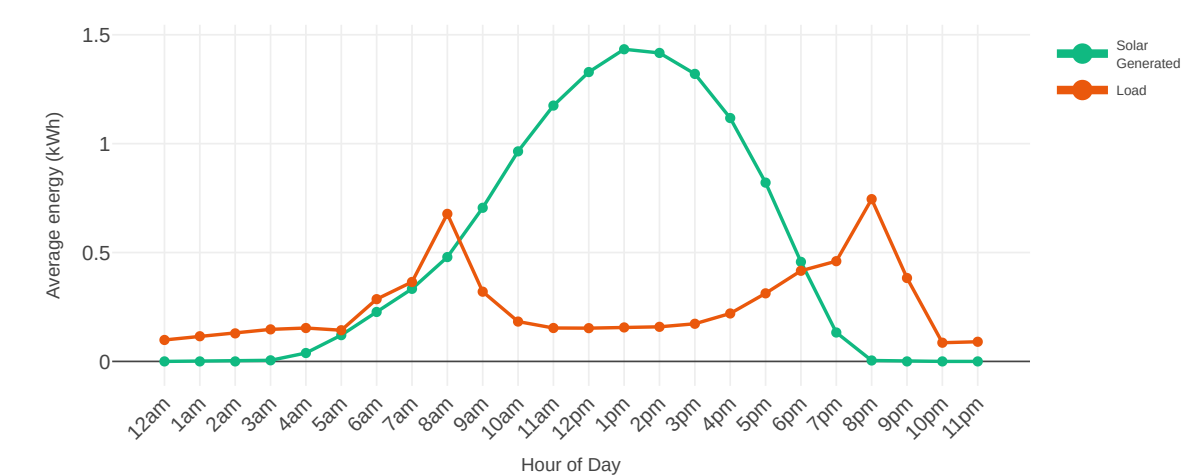
Summer Energy Totals by Month

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



Summer Hourly Average Energy

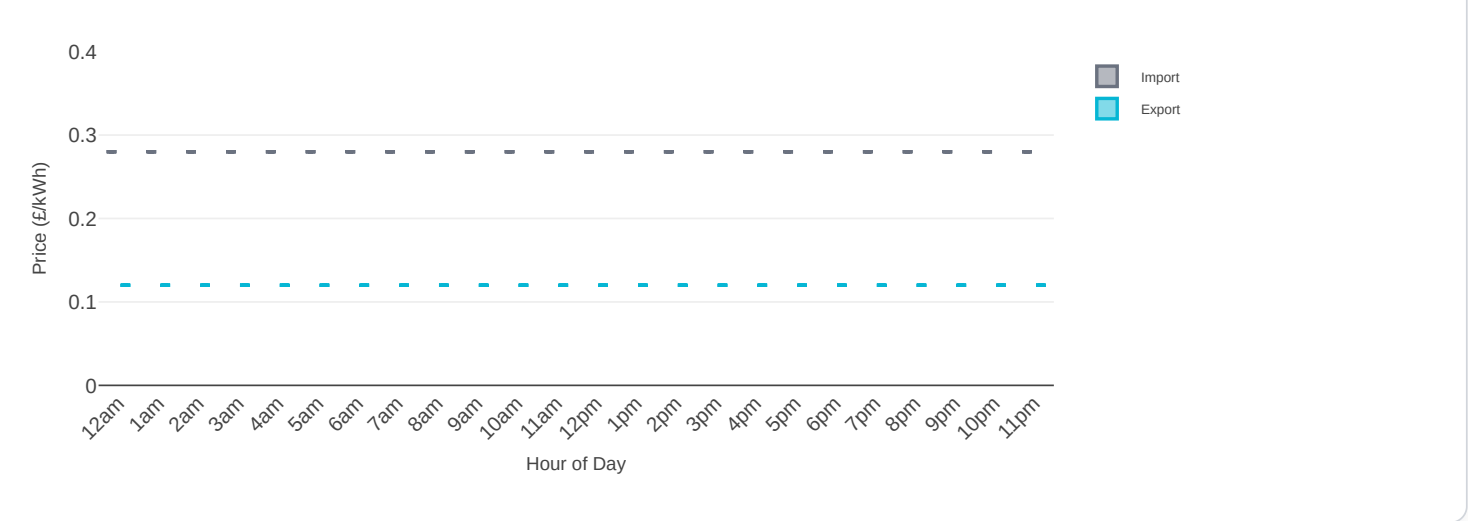
Average hourly solar generation vs load for that season's months.



Summer Prices and Power

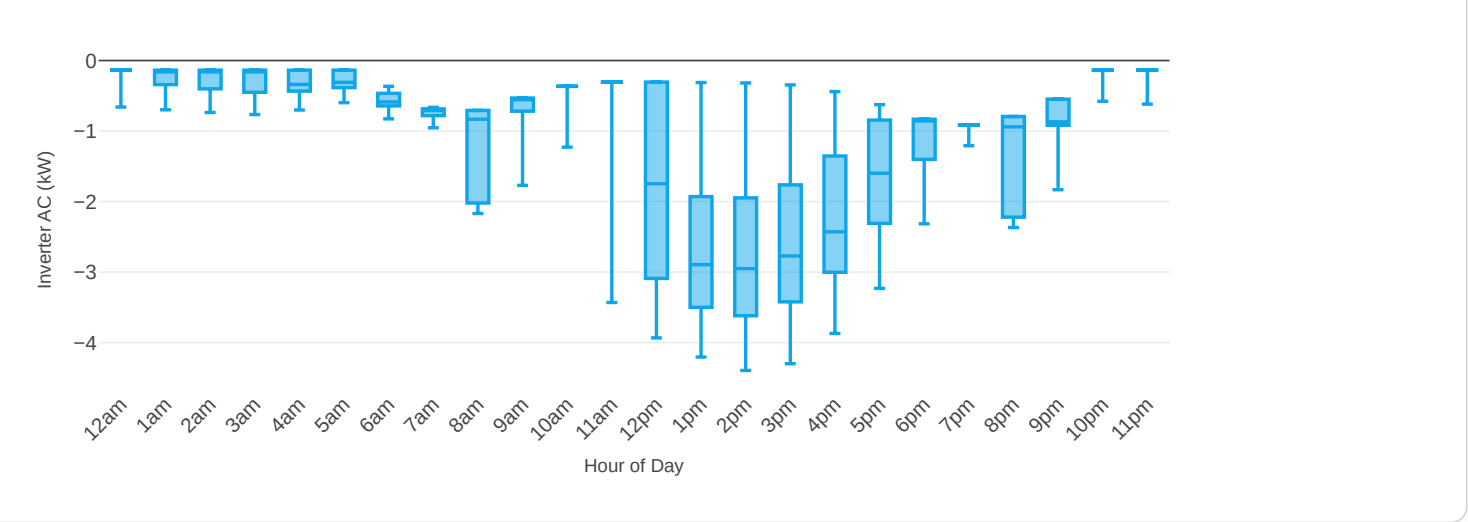
Summer Import & Export Price Distribution by Hour

Spread of import and export tariff rates by hour for June, July, August.



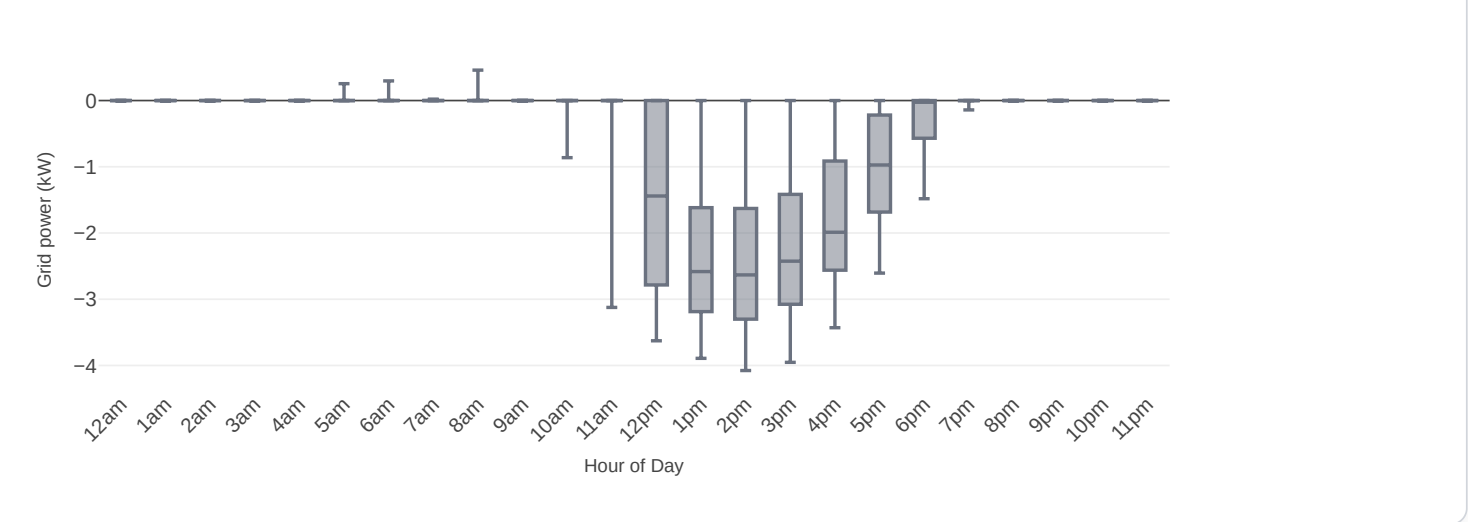
Summer Inverter AC Power Distribution by Hour (inverter charge is positive)

Spread of inverter AC power flows by hour for June, July, August.



Summer Grid Power Distribution by Hour (import is positive)

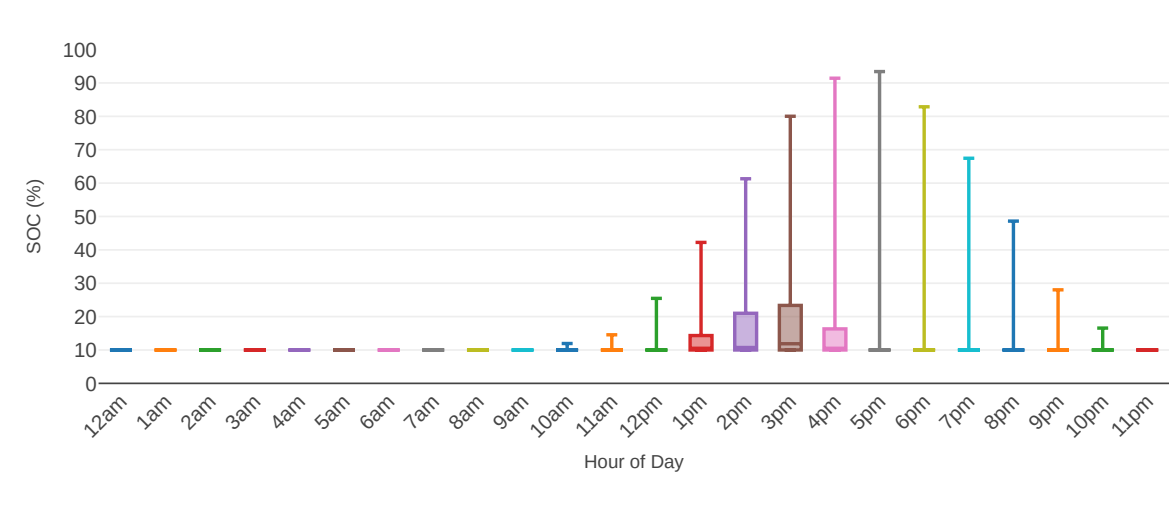
Spread of net grid power by hour for June, July, August.



Winter Monthly Summary

Winter SOC Distribution by Hour

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



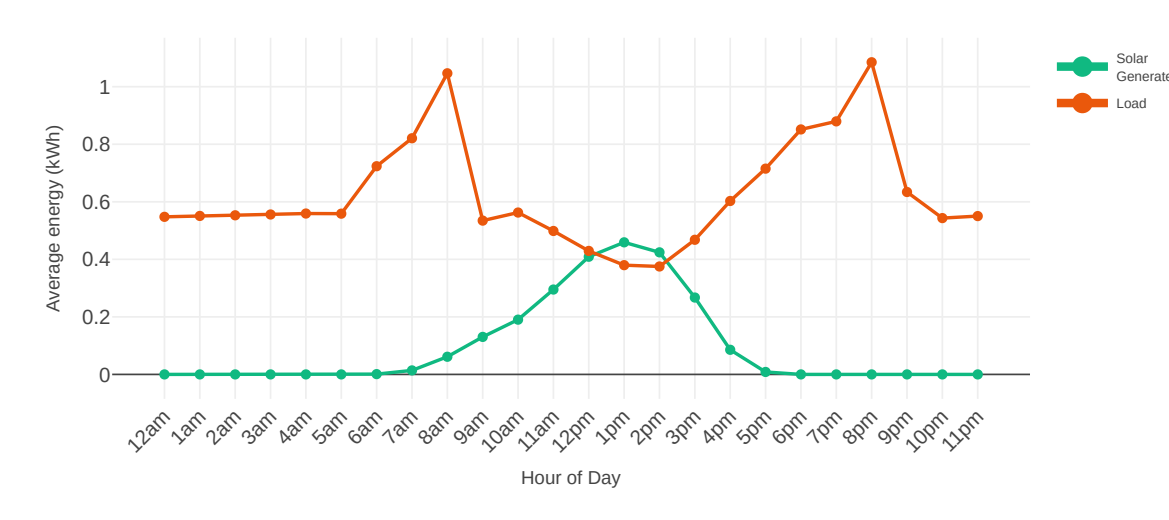
Winter Energy Totals by Month

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



Winter Hourly Average Energy

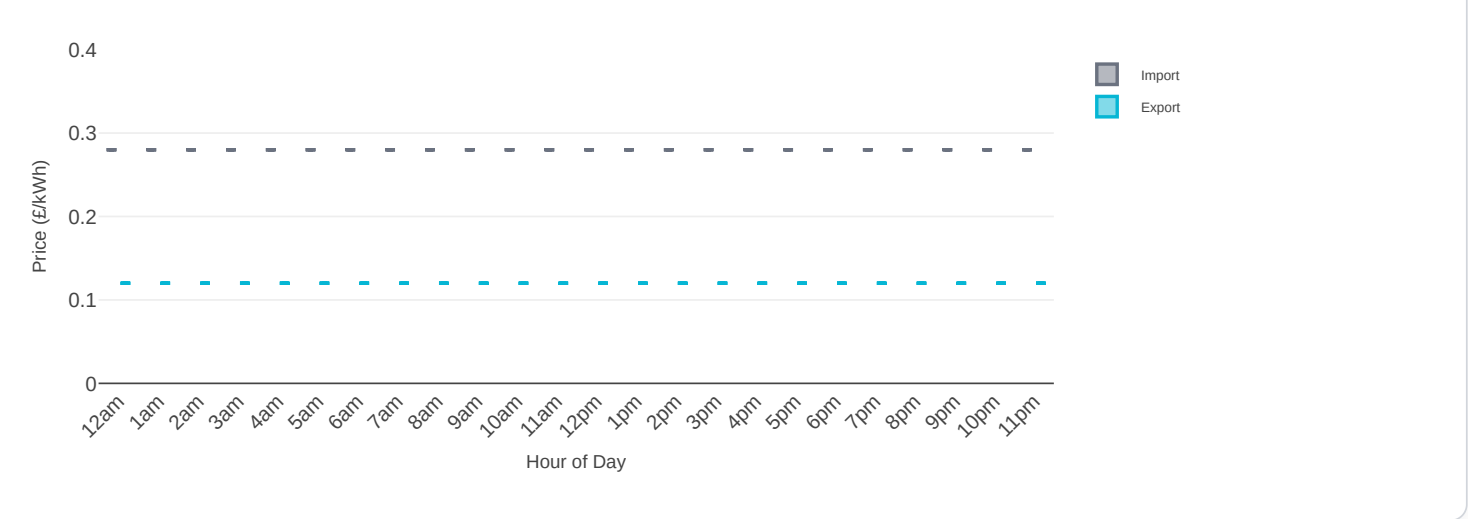
Average hourly solar generation vs load for that season's months.



Winter Prices and Power

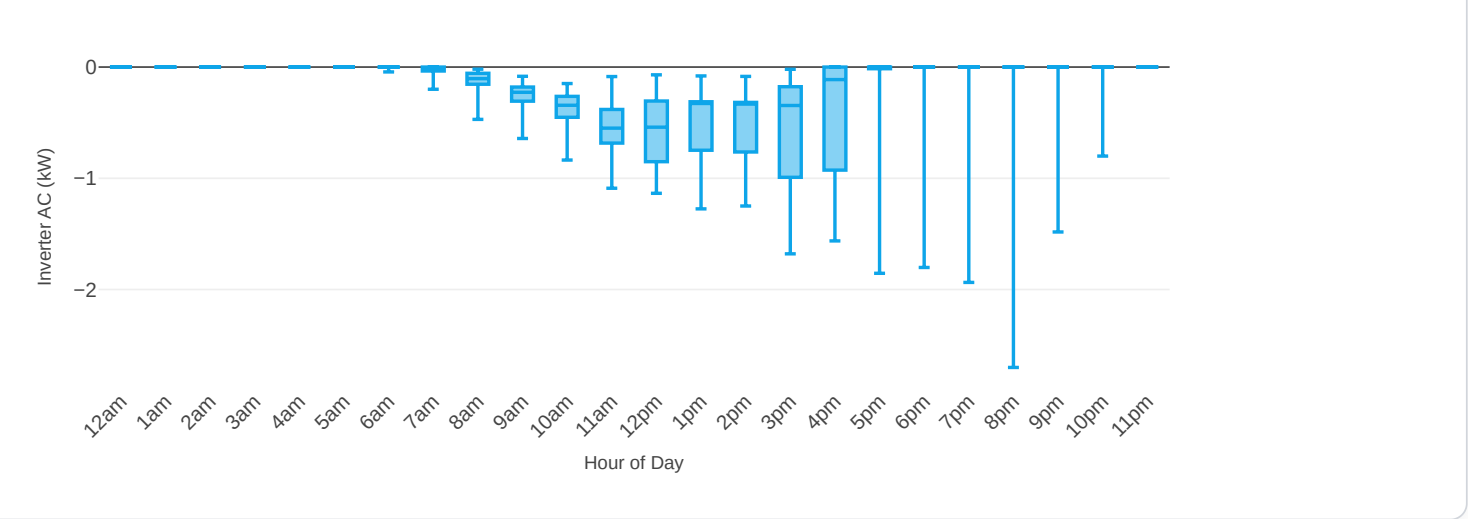
Winter Import & Export Price Distribution by Hour

Spread of import and export tariff rates by hour for December, January, February.



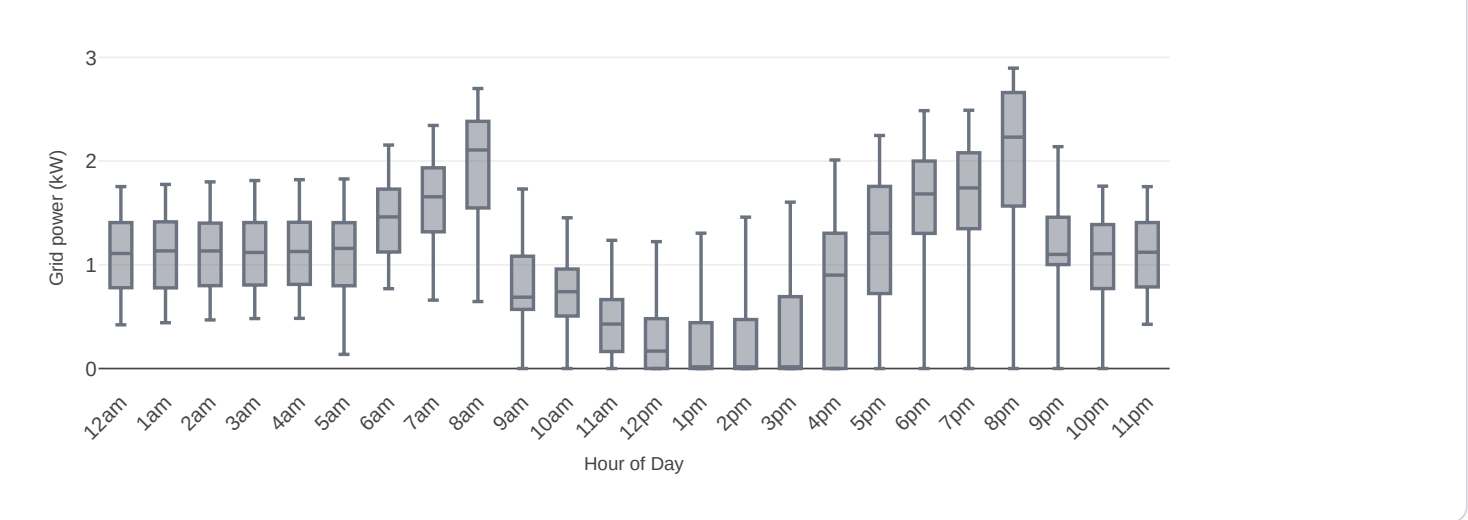
Winter Inverter AC Power Distribution by Hour (inverter charge is positive)

Spread of inverter AC power flows by hour for December, January, February.



Winter Grid Power Distribution by Hour (import is positive)

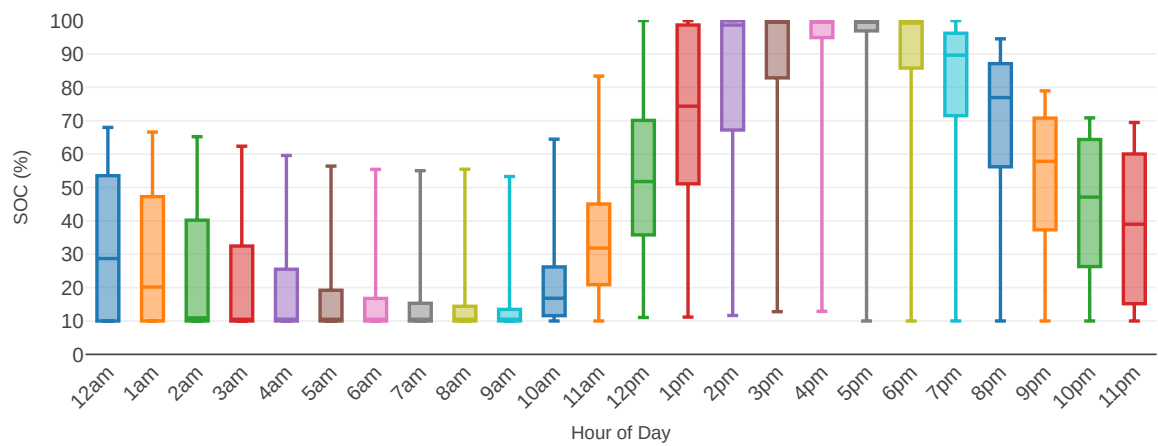
Spread of net grid power by hour for December, January, February.



Spring Monthly Summary

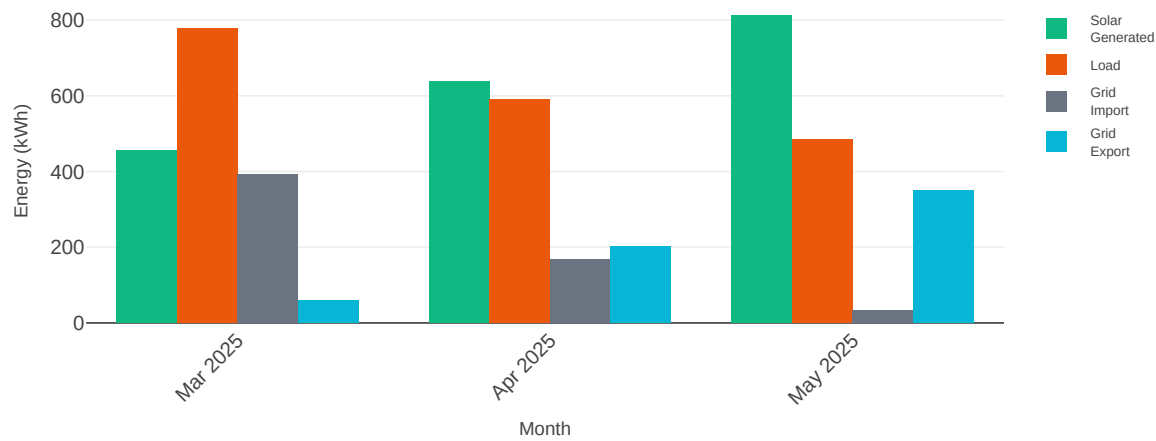
Spring SOC Distribution by Hour

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



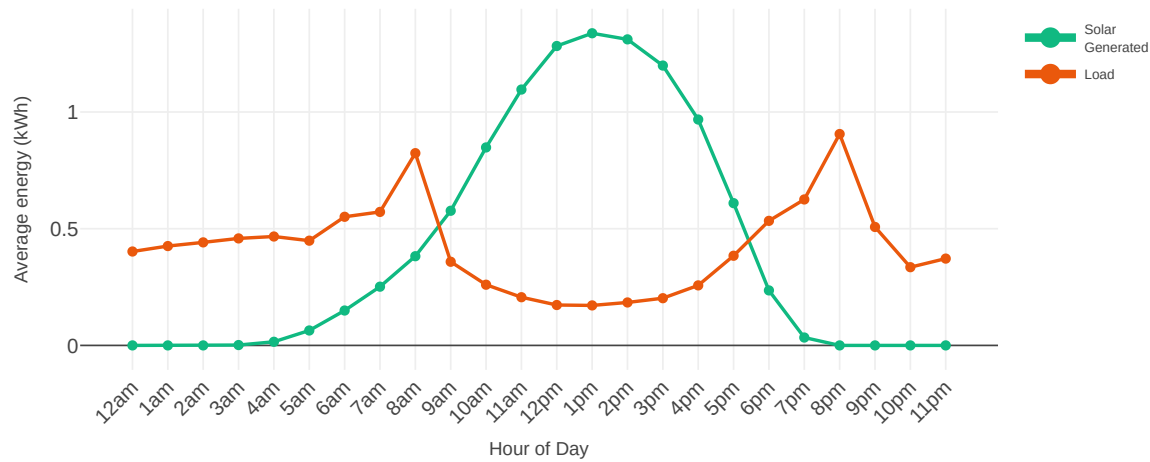
Spring Energy Totals by Month

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



Spring Hourly Average Energy

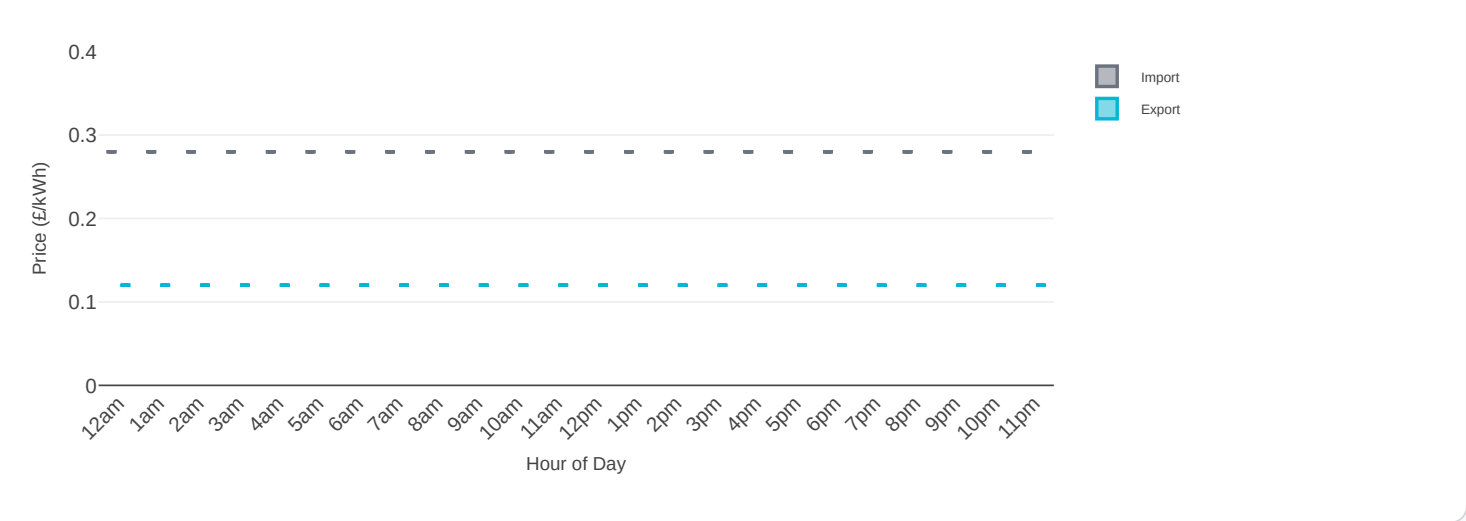
Average hourly solar generation vs load for that season's months.



Spring Prices and Power

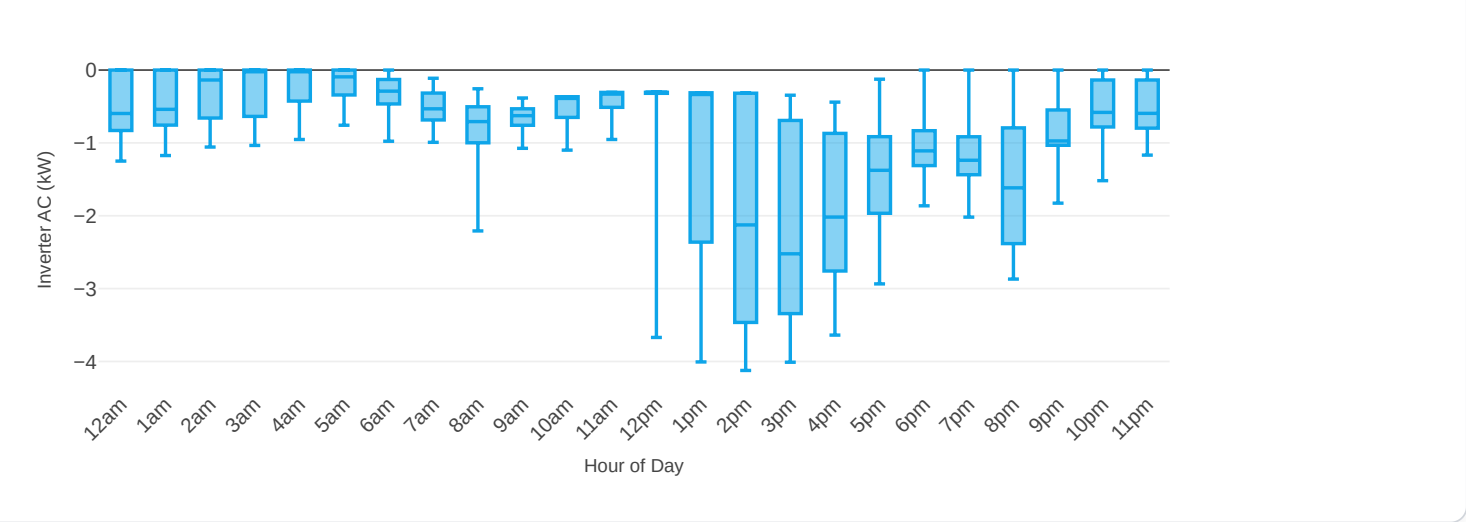
Spring Import & Export Price Distribution by Hour

Spread of import and export tariff rates by hour for March, April, May.



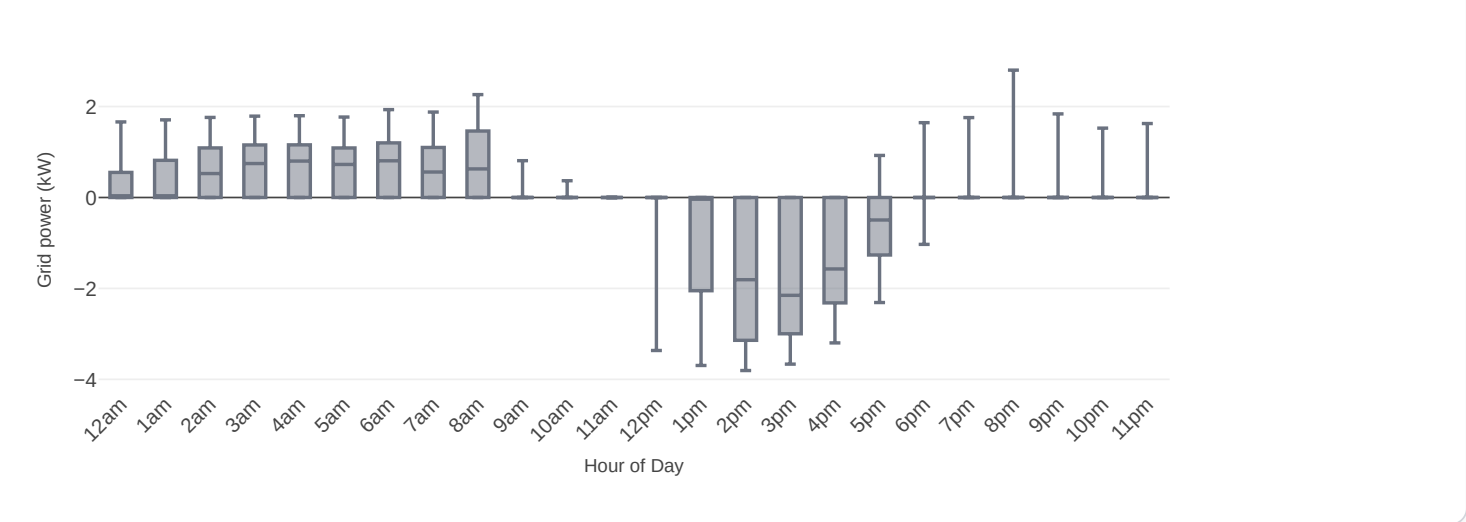
Spring Inverter AC Power Distribution by Hour (inverter charge is positive)

Spread of inverter AC power flows by hour for March, April, May.



Spring Grid Power Distribution by Hour (import is positive)

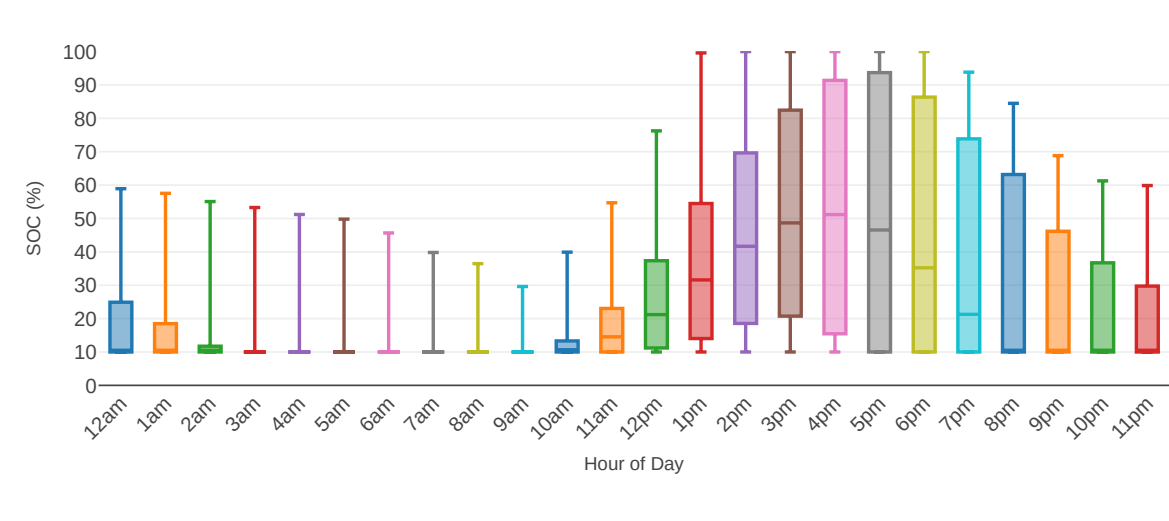
Spread of net grid power by hour for March, April, May.



Autumn Monthly Summary

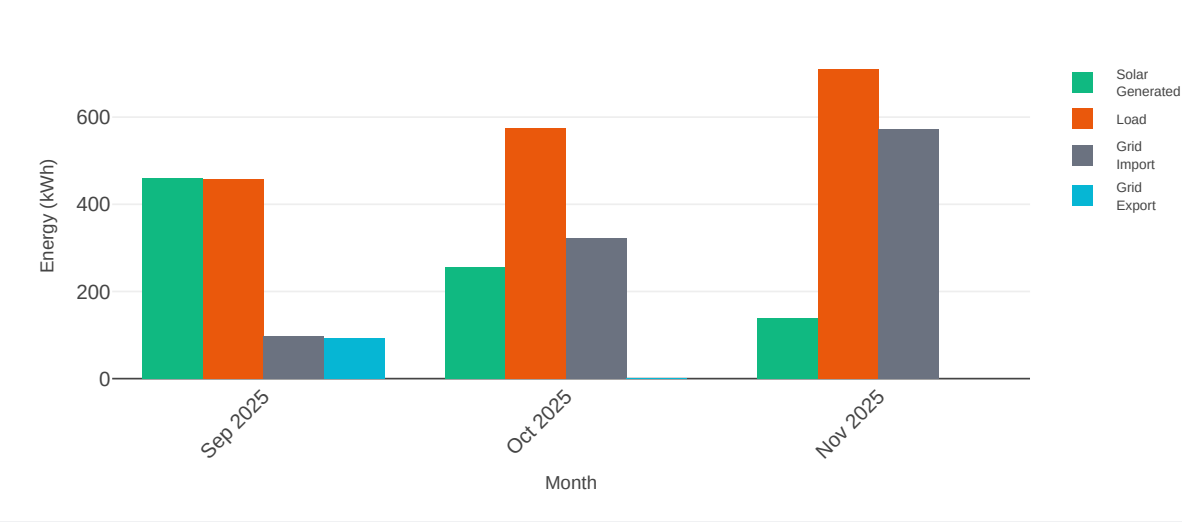
Autumn SOC Distribution by Hour

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



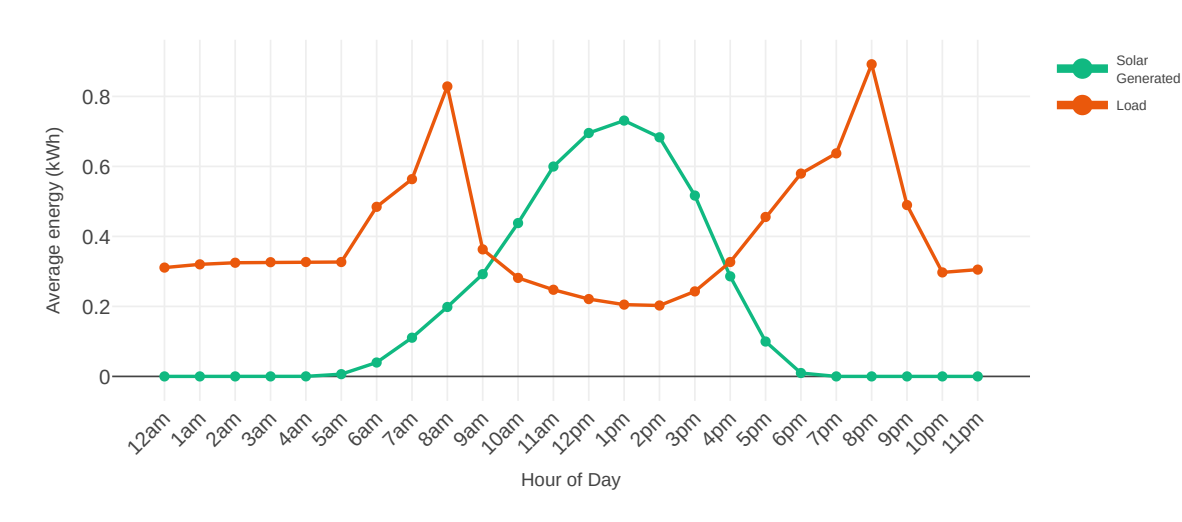
Autumn Energy Totals by Month

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



Autumn Hourly Average Energy

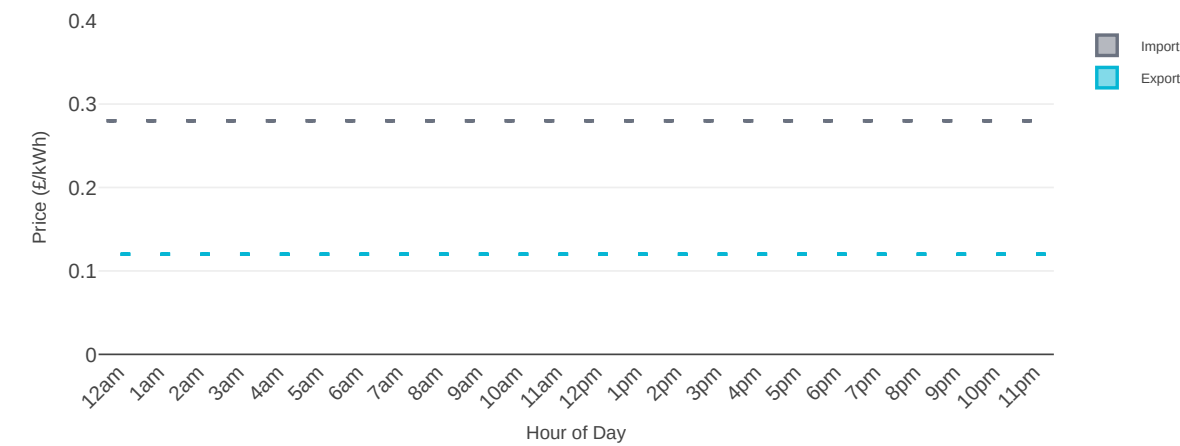
Average hourly solar generation vs load for that season's months.



Autumn Prices and Power

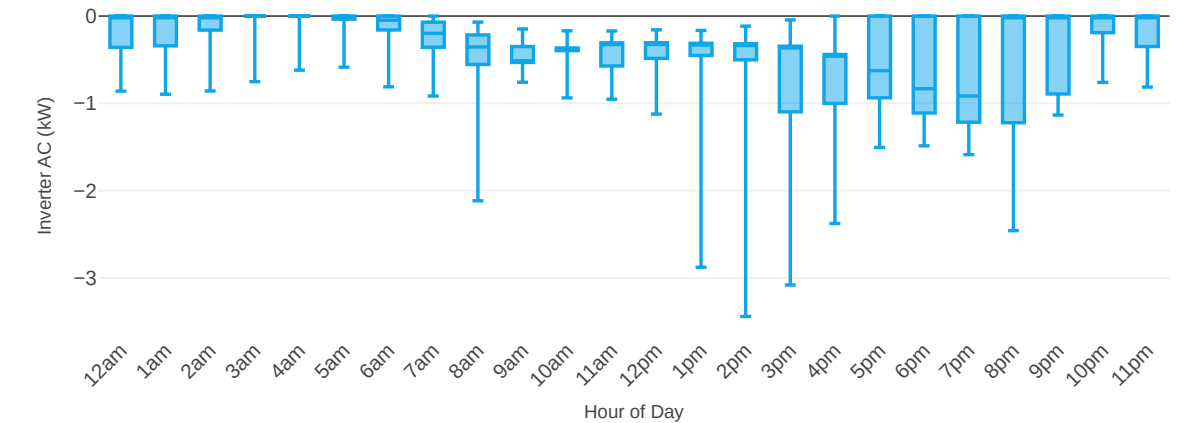
Autumn Import & Export Price Distribution by Hour

Spread of import and export tariff rates by hour for September, October, November.



Autumn Inverter AC Power Distribution by Hour (inverter charge is positive)

Spread of inverter AC power flows by hour for September, October, November.



Autumn Grid Power Distribution by Hour (import is positive)

Spread of net grid power by hour for September, October, November.

