

HISTORIC SIMULATION REPORT

Newish (post 2010) + PV + Heat pump

Workspace

Site location

UK-Gloucester (51.89, -2.19) · UTC

Battery

fogstar 32 (32 kWh)

Inverter

Fox ESS H1-5.0-E (5 kW)

setpoints: economy 7 charge (6 periods)

Solar Arrays

Southx17 (Aiko 485, 17 panels, 8.2 kW)

Load profile

house load 6000 (6,000 kWh/yr)

Heat pump

heat pump-newish build-retrofit (rated 2,888 W · design house 21 °C · design flow 45 °C)

Tariff

Economy 7
import: 0.13, 0.30 · export: 0.12 · daily standing: 0.60

Summary

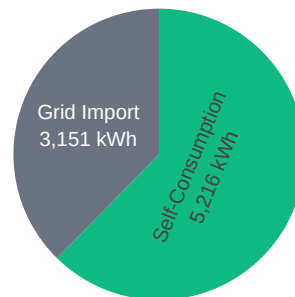
☀️ Solar Generated	9,097 kWh	(9,097 (utilised) + 190 (clipped))
📉 Load Consumed	8,367 kWh	2,266 GBP (cost without solar)
🔧 Space heating electric (heat pump)	1,335 kWh	(thermal generated 5,265)
🔧 Hot water electric (heat pump)	1,032 kWh	(thermal generated 2,992)
🔌 Grid Import	3,151 kWh	394 GBP
🔌 Grid Export	3,699 kWh	444 GBP
\$ Total benefit from solar & battery	2,316 GBP	
\$ New electricity bill	169 GBP	(394 (import) - 444 (export) + 219 (standing))

Self-Consumption

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

62.3%

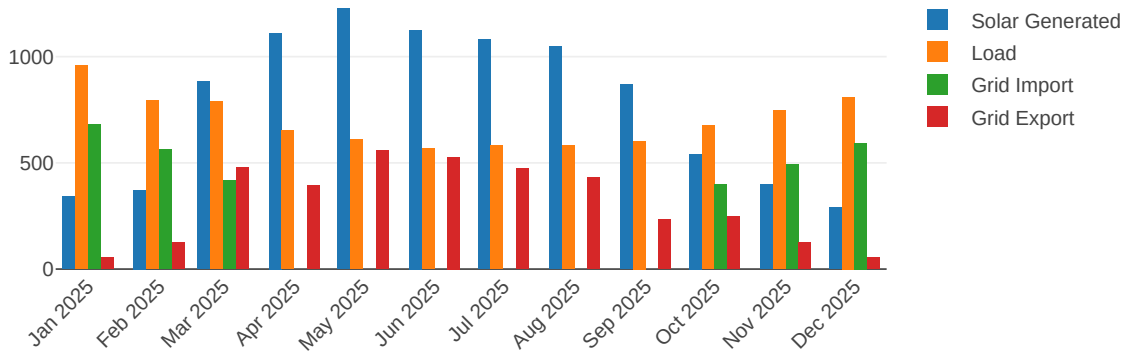
Spring: 79.6% Summer: 100.0%
Autumn: 56.0% Winter: 28.1%



Yearly Summary

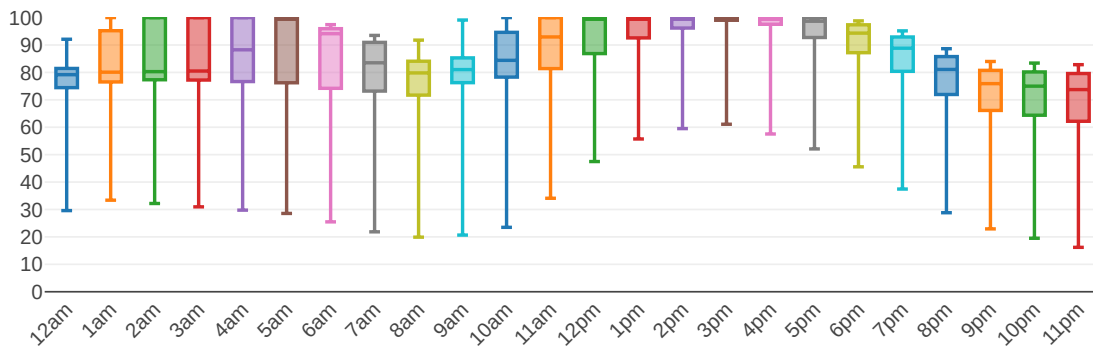
Monthly Energy Totals

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



SOC Distribution by Hour

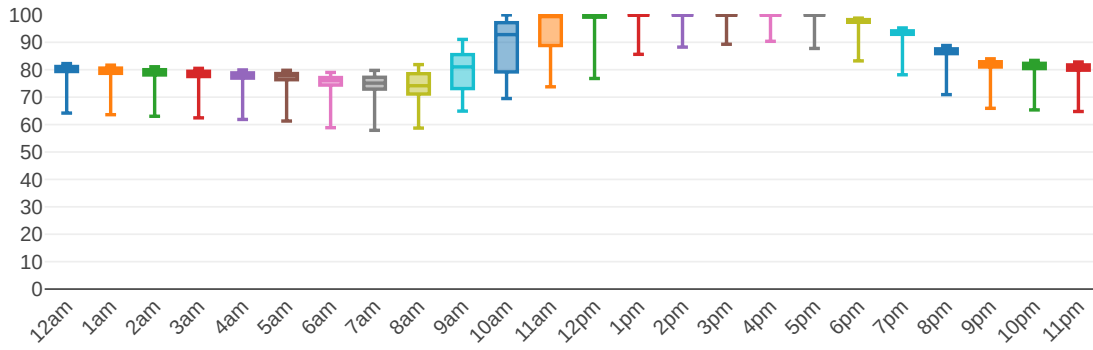
Spread of battery charge levels by hour (box plot).



Summer Monthly Summary

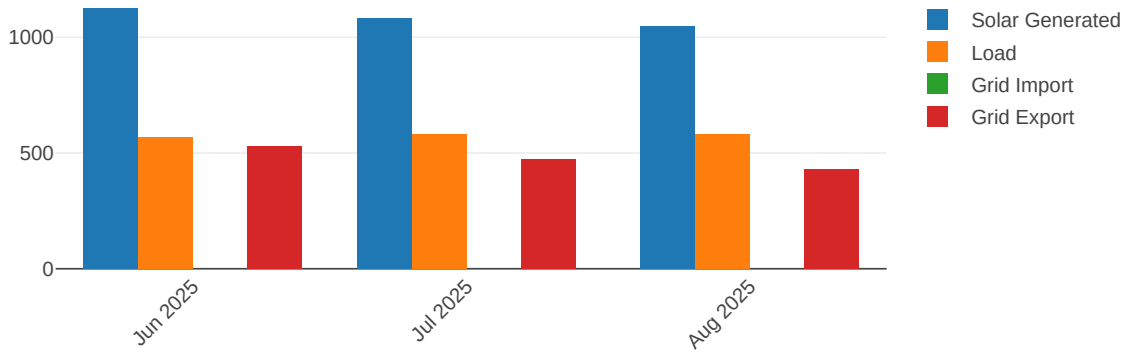
Summer SOC Distribution by Hour

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



Summer Energy Totals by Month

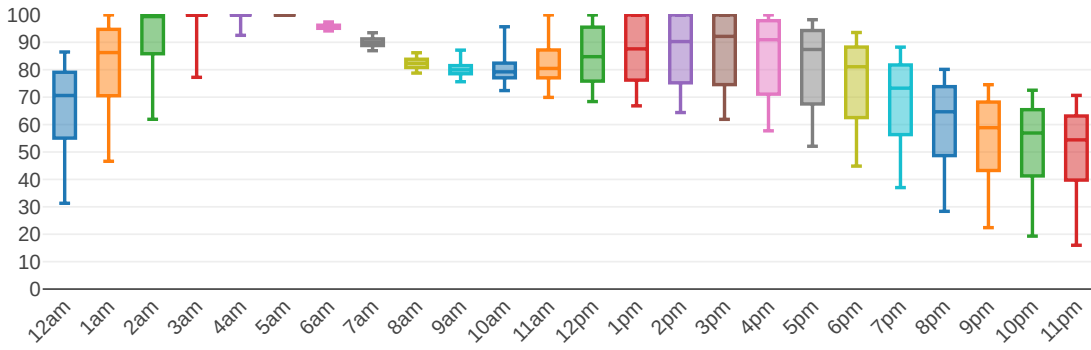
Energy flows for June, July, August: solar, load, grid import, grid export.



Winter Monthly Summary

Winter SOC Distribution by Hour

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



Winter Energy Totals by Month

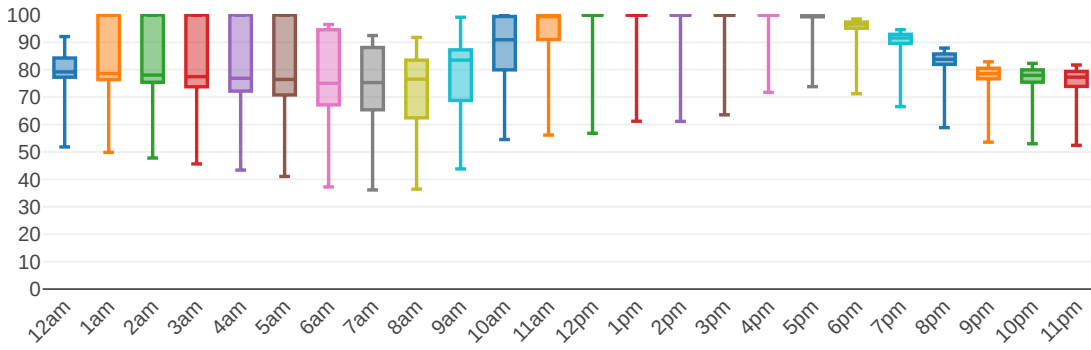
Energy flows for December, January, February: solar, load, grid import, grid export.



Spring Monthly Summary

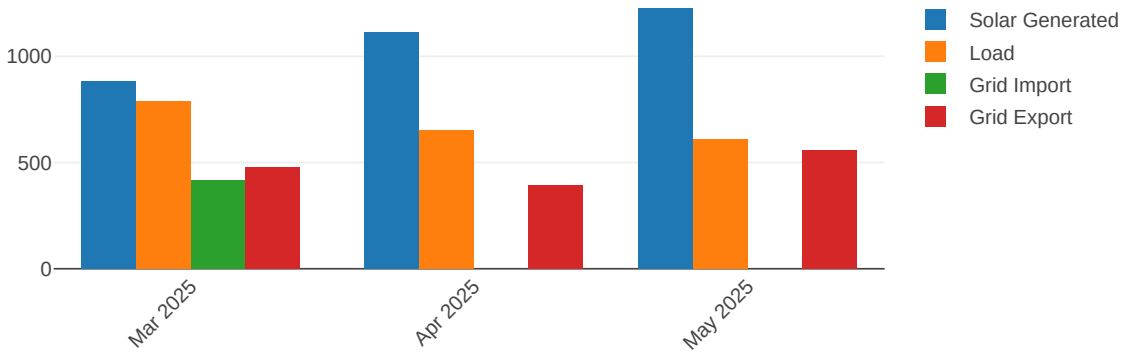
Spring SOC Distribution by Hour

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



Spring Energy Totals by Month

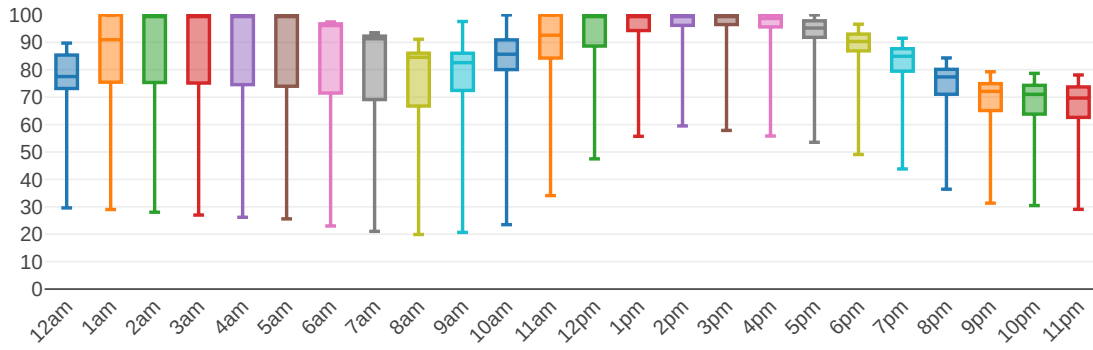
Energy flows for March, April, May: solar, load, grid import, grid export.



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.

