

Heat Pump 16kW Heat Loss

Workspace

📍 Site location

UK-Gloucester (51.89, -2.19) · UTC

💧 Heat pump Heat pump

Design flow temperature (°C)	43.0
Minimum flow temperature (°C)	30.0
Weather compensation control	True
SCOP	3.77
SCOP reference temperature (°C)	45.0
Max heat pump power at design (W)	16000.0
Hysteresis (°C)	0.25

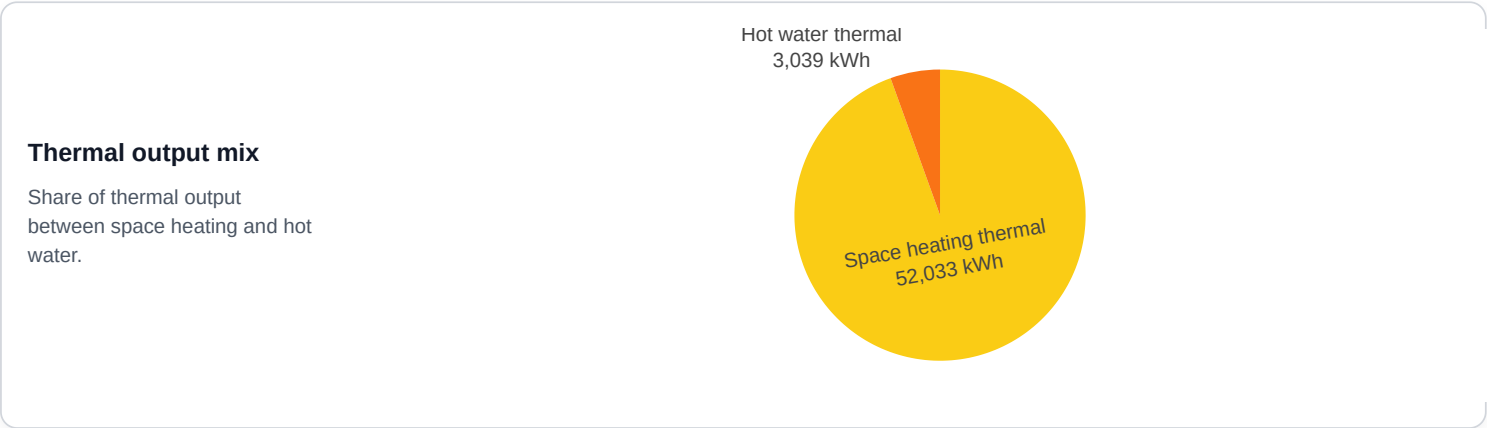
💧 Hot water tank

Hot water volume (L)	200.0
Hot water set temperature (°C)	55.0
Hot water hysteresis (°C)	10.0
Hot water charge delta T (°C)	7.0
Hot water litres per person per day	50.0
Cold water temperature (°C)	10.0
Hot water loss (W/°C)	2.0

🏠 House

Heat loss at design temperature (W)	16000.0
Design outside air temperature (°C)	-3.0
Design inside temperature (°C)	20.5
Thermal mass (kJ/°C/m²)	160.0
Property floor area (m²)	100.0
Solar glazing g-factor	0.6
Number of occupants	3
Standby power contribution (W)	100.0

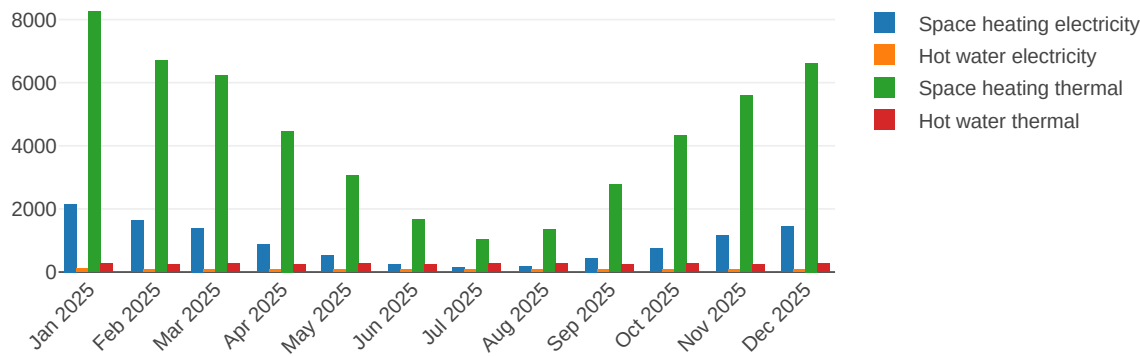
Summary	
🔌 Space heating electricity	10,952 kWh
🔌 Hot water electricity	1,014 kWh
🔌 Total heat pump electricity	11,965 kWh
🔌 Space heating thermal output	52,033 kWh
🔌 Hot water thermal output	3,039 kWh
🔌 Total thermal output	55,073 kWh
🔌 Average COP (space heating)	4.75
🔌 Average COP (hot water)	3.00
🔌 Average COP (combined)	4.60



Yearly summary

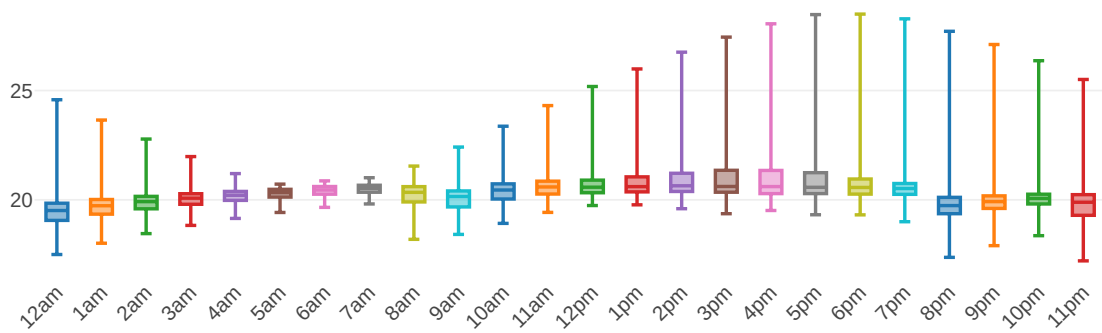
Monthly heat pump energy

Electricity and thermal output by month: space heating and hot water.



House temperature distribution by hour

Spread of indoor air temperature by hour of day (box plot).



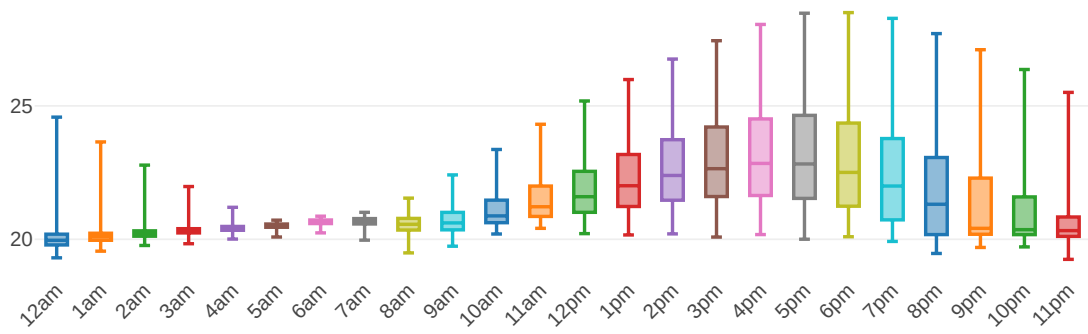
Monthly Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Space heating electricity kWh	2,156	1,627	1,395	873	530	247	144	187	444	735	1,168	1,445
Hot water electricity kWh	103	91	94	83	81	72	73	74	77	84	88	94
Space heating thermal kWh	8,253	6,707	6,220	4,469	3,055	1,656	1,037	1,335	2,760	4,333	5,585	6,623
Hot water thermal kWh	259	234	259	250	258	247	259	257	250	258	250	259
Average house temperature °C	19.8	19.8	20	20.2	20.4	21.2	21.6	21.4	20.4	20.2	20.1	20

Summer monthly summary

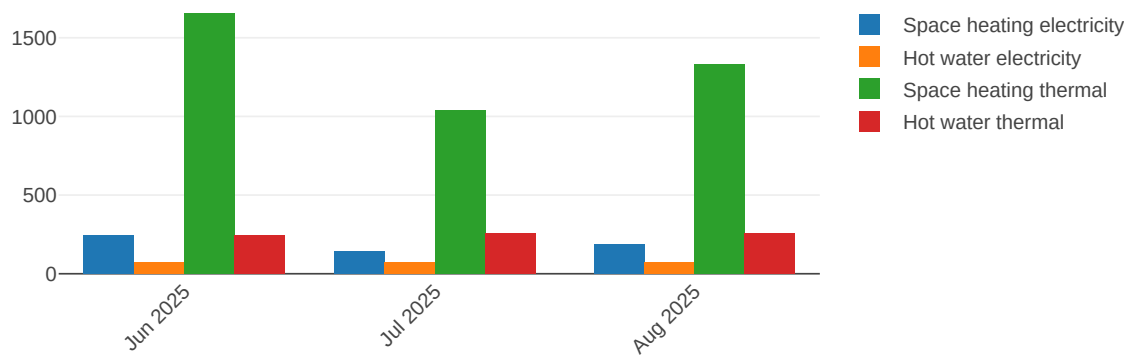
Summer house temperature by hour

June, July, August: indoor temperature distribution by hour.



Summer heat pump totals by month

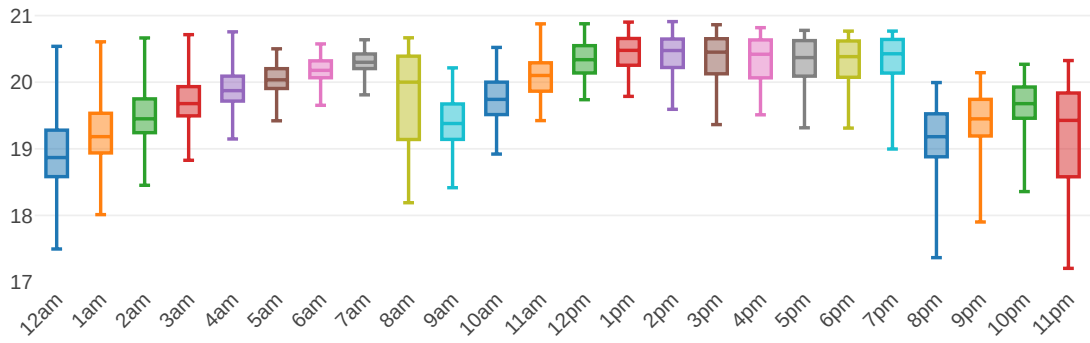
Electricity and thermal energy for June, July, August.



Winter monthly summary

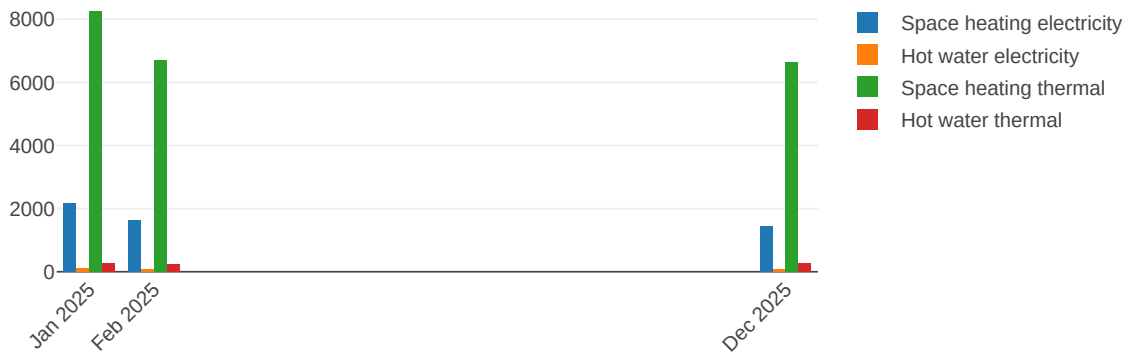
Winter house temperature by hour

December, January, February: indoor temperature by hour.



Winter heat pump totals by month

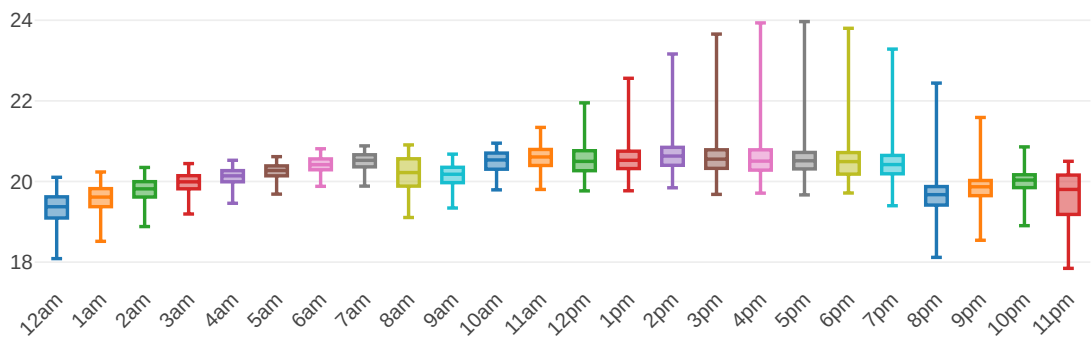
Electricity and thermal energy for December, January, February.



Spring monthly summary

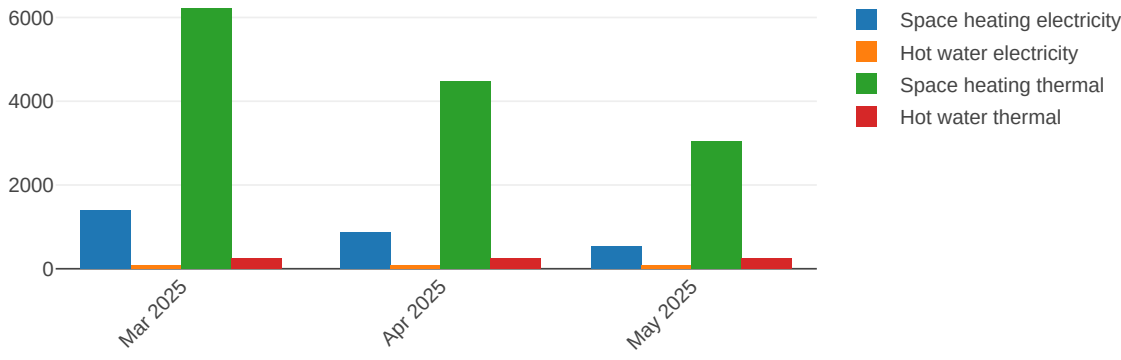
Spring house temperature by hour

March, April, May: indoor temperature by hour.



Spring heat pump totals by month

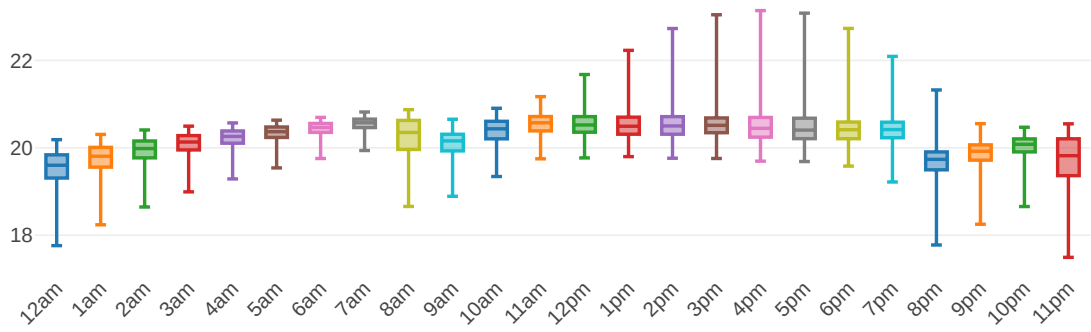
Electricity and thermal energy for March, April, May.



Autumn monthly summary

Autumn house temperature by hour

September, October, November: indoor temperature by hour.



Autumn heat pump totals by month

Electricity and thermal energy for September, October, November.

