

Heat Pump 4kW 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)	4000.0
Hysteresis (°C)	0.25

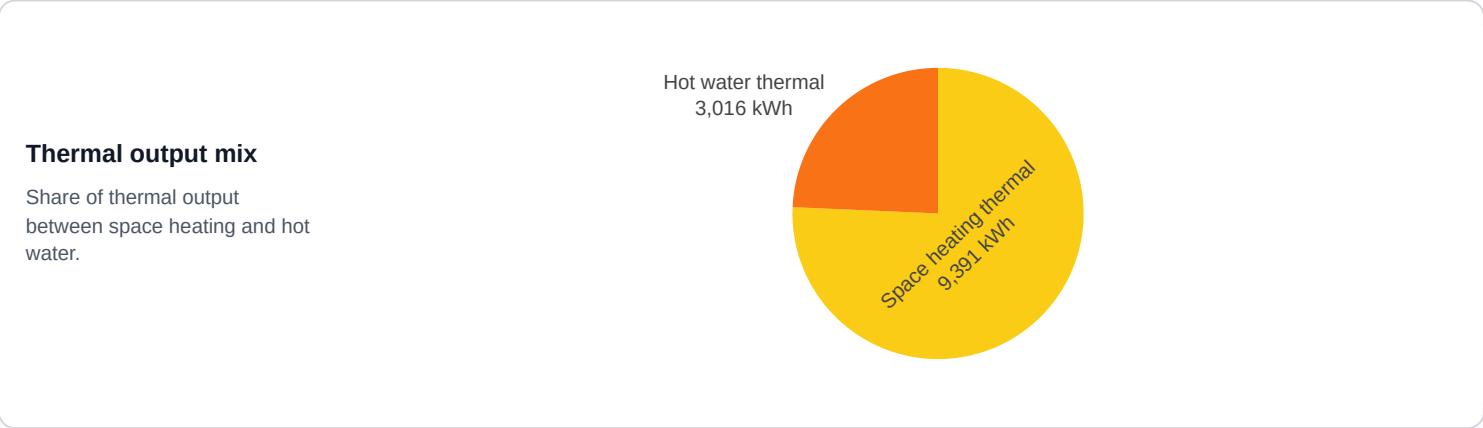
💧 Hot water tank

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)	4000.0
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

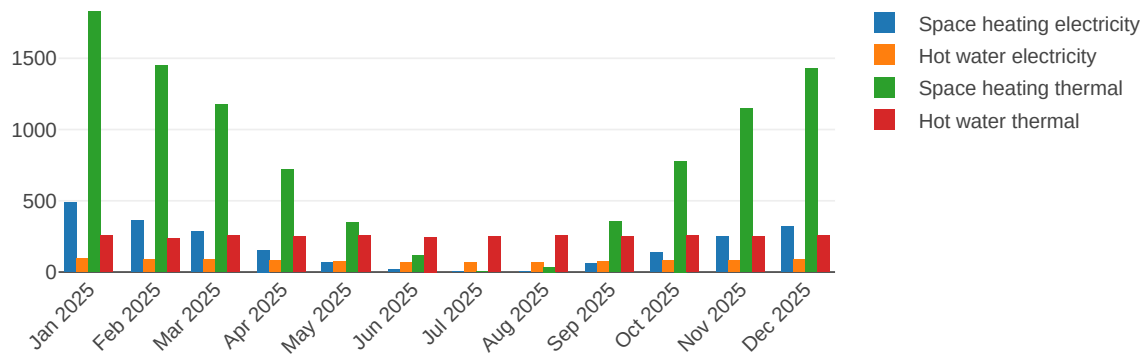
Summary	
🔌 Space heating electricity	2,149 kWh
🔌 Hot water electricity	958 kWh
🔌 Total heat pump electricity	3,106 kWh
🔌 Space heating thermal output	9,391 kWh
🔌 Hot water thermal output	3,016 kWh
🔌 Total thermal output	12,407 kWh
🔌 Average COP (space heating)	4.37
🔌 Average COP (hot water)	3.15
🔌 Average COP (combined)	3.99



Yearly summary

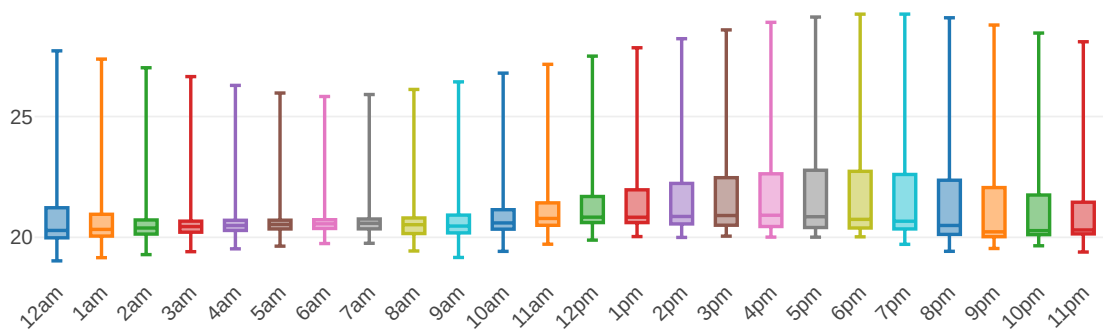
Monthly heat pump energy

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).



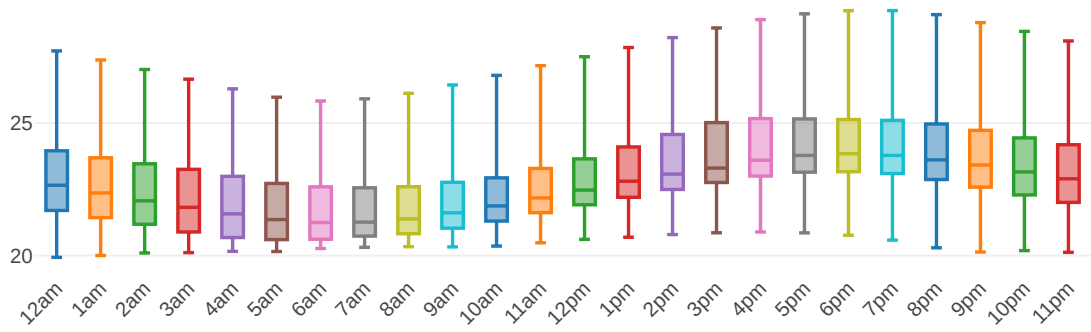
Monthly Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Space heating electricity kWh	487	361	282	155	70	20	1	5	63	138	249	317
Hot water electricity kWh	98	86	90	79	76	68	67	69	73	80	83	89
Space heating thermal kWh	1,828	1,447	1,177	723	351	118	5	35	354	779	1,146	1,428
Hot water thermal kWh	256	233	258	249	255	246	252	255	248	258	249	256
Average house temperature °C	20.2	20.3	20.4	20.7	21.2	22.5	23.5	22.8	21	20.5	20.4	20.3

Summer monthly summary

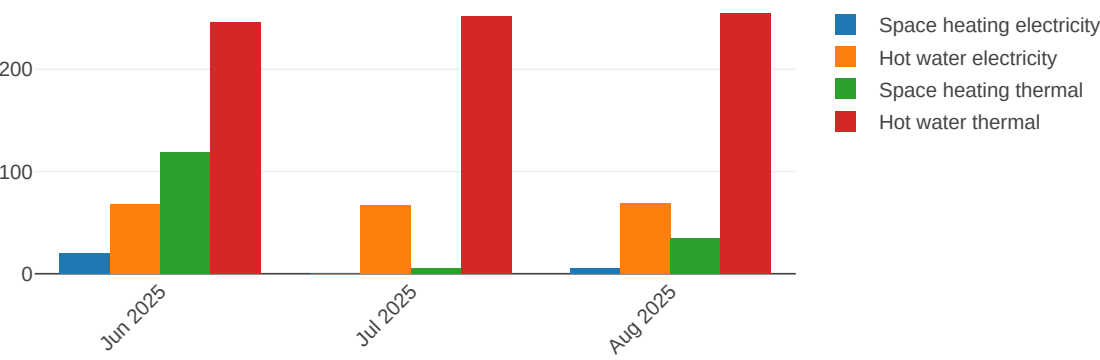
Summer house temperature by hour

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



Summer heat pump totals by month

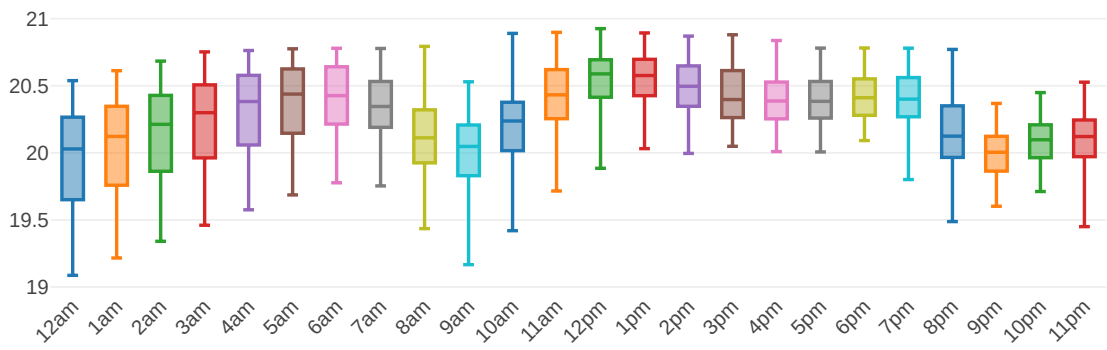
Electricity and thermal energy for June, July, August.



Winter monthly summary

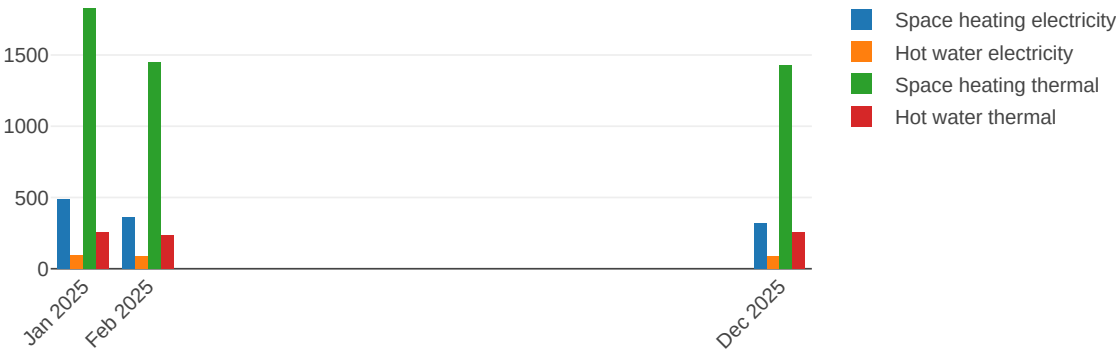
Winter house temperature by hour

December, January, February: indoor temperature by hour.



Winter heat pump totals by month

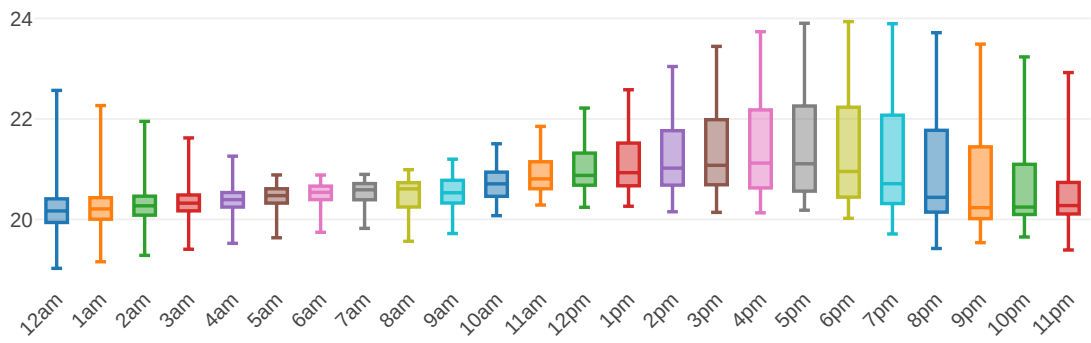
Electricity and thermal energy for December, January, February.



Spring monthly summary

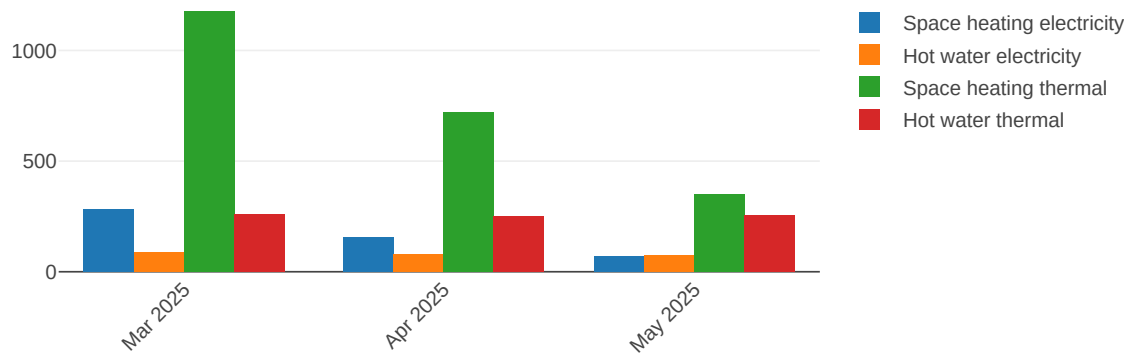
Spring house temperature by hour

March, April, May: indoor temperature by hour.



Spring heat pump totals by month

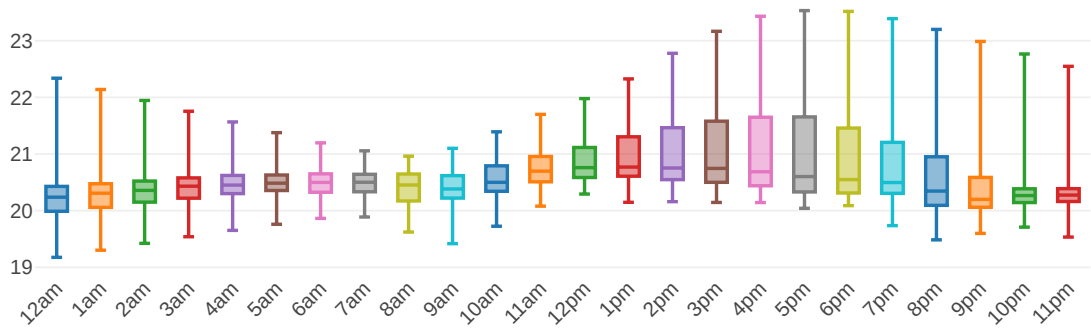
Electricity and thermal energy for March, April, May.



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.

