Heat Pump System Performance Estimate

Installer Project Reference	Manor House
Client Name	Brent Taylor
Installation Address Line 1	MANOR HOUSE
Installation Address Line 2	HOWGILL LANE
Installation Address Line 3	LANCASHIRE
Installation Postcode	BB7 4EF

Energy Performance Certificate (EPC) Information

Does this estimate relate to a new build or proposal for extension or reduction in size of an existing building? No

Estimate based on draft EPC

Energy required to heat property 20,915 kWh

Energy required for hot water 5,619 kWh

New Renewable System Information

Type of System	Air Source Heat Pump	* This calculator is not designed to be used for Solar Assisted Heat Pumps
Manufacturer Name	Vaillant	
Manufacturer Model	Arotherm plus 12kW	
MCS Certification Number	KIWA 00016/020 HP	* Available from the MCS Product Directory
Flow Temperature	50 °C	* Determined by the temp. of the water leaving the HP when supplying space heating at the external design temp.
MCS SCOP Heating	3.92	* SCoP - Seasonal Coefficient of Performance. This value is based on the MCS HP SCoP Table below
MCS SCOP Hot Water	1.75	* If providing space heating and DHW, default value from SAP2012. IF DHW only see methodology in MIS3005
Renewable System Provides	Heating and Hot Water	
Hot Water Immersion Use	Once per week	* based on 50°C up to 60°C, 3kW
Size of Hot Water Cylinder	250 ltr	

Existing Heating System

Existing heating system fuel	Oil	* If new build model the most likely alternative fuel.
Hot Water heated by	Oil	* If new build model the most likely alternative fuel.
Age of existing system	Post-2007	
Efficiency of existing system	92 %	

Estimated System Performance / Comparsion

Energy Requirement for the building

	Heating	Hot water	Total	
Net Energy required to heat property	20,915	5,619	26,534	kWh
Existing System Consumption	22,734	6,786	29,520	kWh

New HP System Estimated Consumption

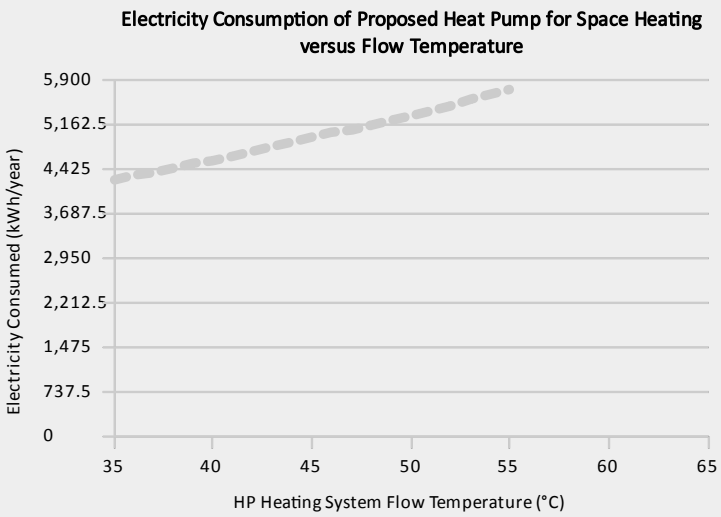
Full Heat Pump System (if selected above)

HP System Electricity Consumption	5,335	3,362	8,697	kWh

Hybrid System (if selected above)

HP System Electricity Consumption	0	0	0	kWh
Hybrid system other Consumption	0	0	0	kWh
Hybrid Total Consumption			0	kWh

Note: There are different types of hybrid system. This calculation presumes a hybrid where both sources of heat supply the same hydraulic circuits (heating and hot water) according to the proportion selected above.



Flow temperature	SCOP
35°C	4.88
36°C	4.81
37°C	4.75
38°C	4.68
39°C	4.61
40°C	4.55
41°C	4.48
42°C	4.41
43°C	4.35
44°C	4.28
45°C	4.21
46°C	4.15
47°C	4.1
48°C	4.04
49°C	3.98
50°C	3.92
51°C	3.86
52°C	3.8
53°C	3.74
54°C	3.69
55°C	3.63
56°C	0
57°C	0
58°C	0
59°C	0
60°C	0
61°C	0
62°C	0
63°C	0
64°C	0
65°C	0

SCoP Definition

SCoP = Seasonal Coefficient of Performance:

MCS SCoP is a theoretical indication of the anticipated efficiency of a heat pump aggregated over a year using standard climate data across Europe. It indicates the units of total heat energy generated (output) for each unit of energy (electricity) consumed (input). It is slightly different to ErP SCoP as it contains efficency losses due to controls and brine pumps (for a GSHP). As a guide a heat pump with a MCS SCoP of 3 generates 3 kWh of heat energy for every 1 kWh of electrical energy it consumes.

This also means that 2/3rds of the heat output could be eligible for RHI payments. MCS SCoP is based on stringent factory based tests for equipment but does not specifically include the energy consumption of heating circulating pump(s) nor does it model the transient conditions typically experienced in practice in the consumers home and hence the overall final system efficiency is likely to be different from the MCS SCoP.

Important Information

This performance estimate should be accompanied by the Key Facts which explain the factors that can affect the performance of a heat pump.

Any technical variation to the specification could affect the performance of the Heat Pump System in which case the MCS Contractor MUST update and re-issue this document and advise the customer of their Consumer Rights.