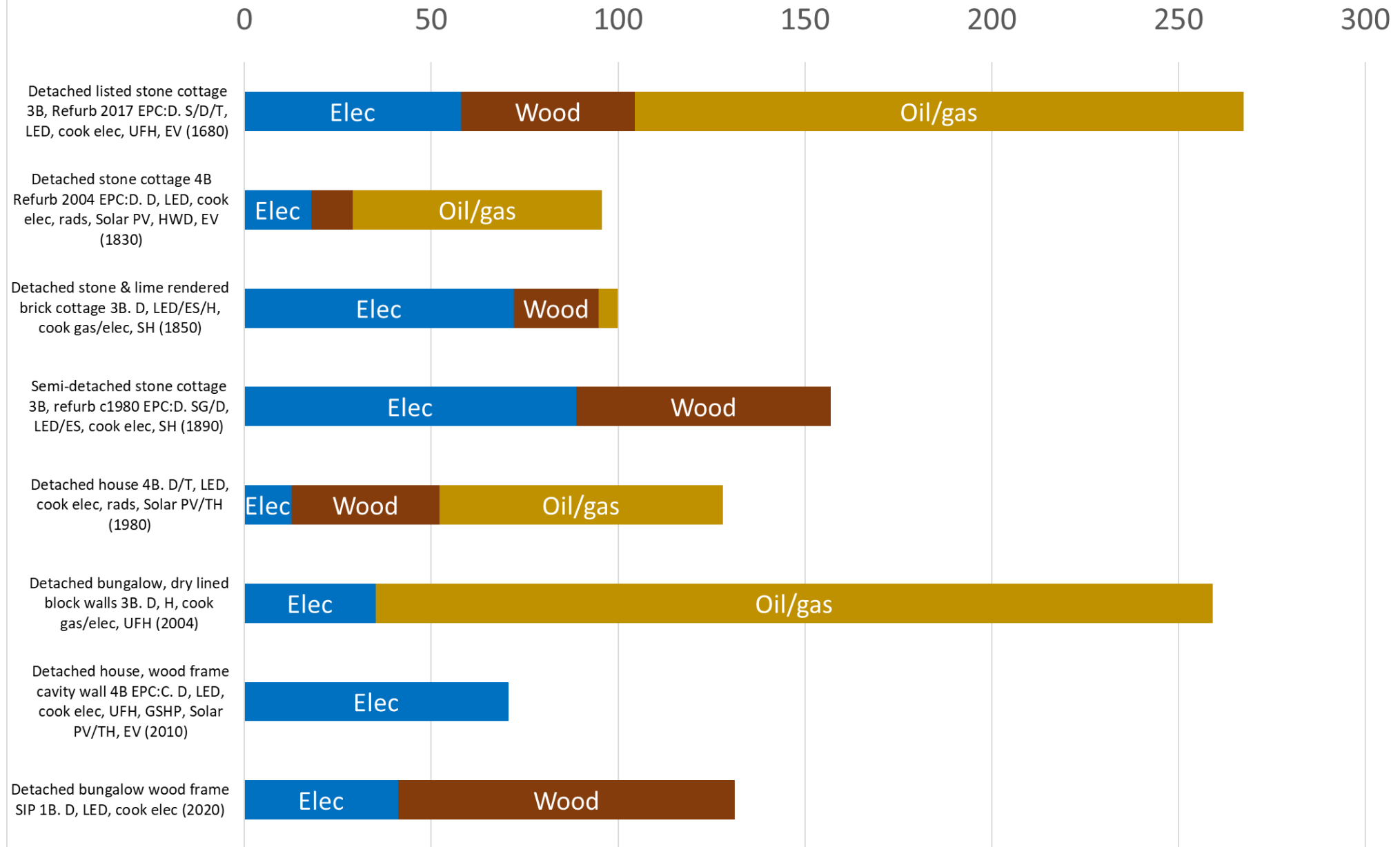


Sheepscombe benchmark domestic energy consumption, cost and emissions

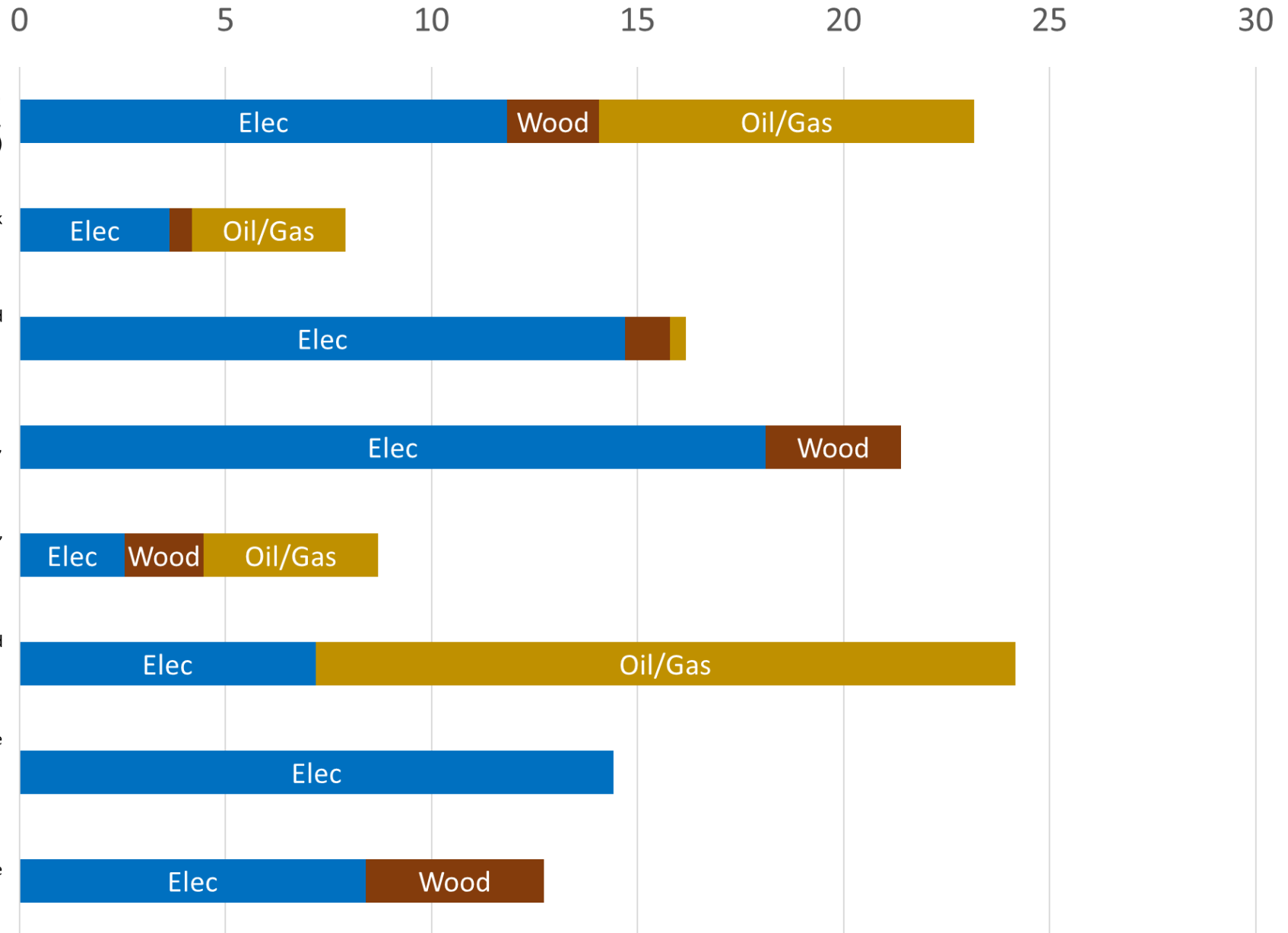
The graphs attached give the energy consumption, comparative cost and emissions for several houses in Sheepscombe. Points to note:

- The key to the abbreviations is given in the table following the graphs.
- The Energy Performance Certificate (EPC) rating is given where available.
- The amount of electricity, heating oil, LPG gas and wood used covers a period of 1 year, typically 2020 or 2021.
- Solar PV panels: only the energy imported from the grid is included (exported energy and solar energy used by the house is ignored).
- The information is presented as /year/m² to aid comparison.
- The properties are listed in approximate age order. Older houses have typically been extended and refurbished.
- Costs are based on published average unit energy prices for 2020 (not actual costs), so do not reflect recent increases.
- Unit energy costs and conversion factors used are given in the table following the graphs.
- No account is taken of the embedded carbon from construction or refurbishment, which is likely to be significant on an annualised basis for newer houses.
- If you know the floor area of your property and can look up your annual consumption of electricity, wood and oil/gas, then you can benchmark your property against these houses.
- Contact tobyroberts58@gmail.com if you want help with this or would like your property added to the list.

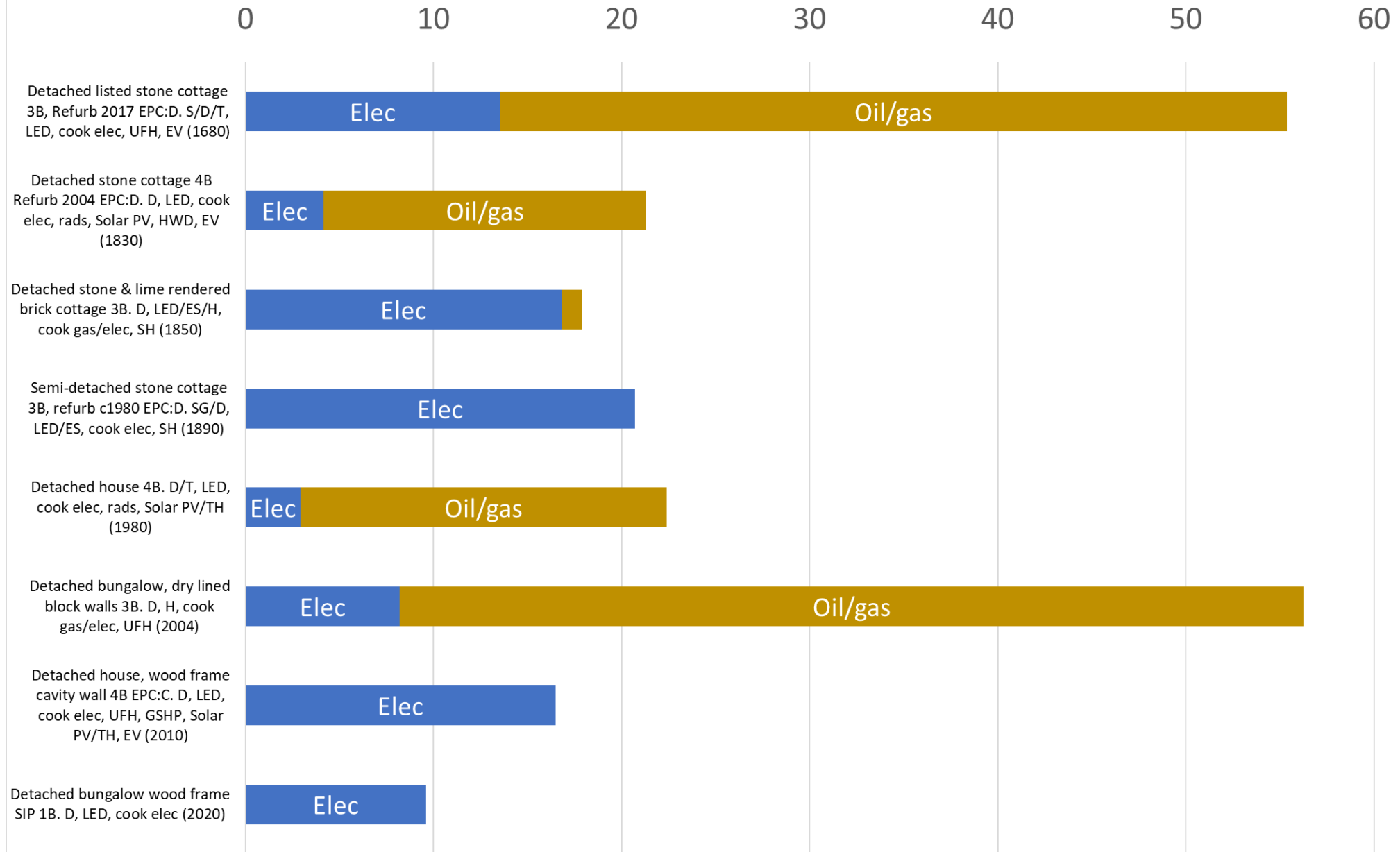
Sheepscombe Benchmark: Energy consumption kwhr/year/m²



Energy cost £/year/m²



Carbon emissions kg/year/m²



Key to abbreviations on graphs

Glazing		Lighting		Heating		Other	
T	Triple glazing	LED	Light emitting diode	rads	Radiators	3B	No. of bedrooms
D	Double glazing	ES	Energy saving	UFH	Underfloor heating	Solar PV	Photovoltaic panels
SG	Secondary glazing	H	Halogen	SH	Storage heaters	Solar TH	Thermal water panels
S	Single glazing			GSHP	Ground source heat pump	HWD	Hot water diverter
				ASHP	Air source heat pump	EV	Electric car charging
						SIP	Structurally insulated panels

Conversions and other factors used for analysis

Energy		Electricity	Oil (Gas Oil)	LPG Gas	Kiln dried wood
Units		kwh	litres	litres	m ³
Info from		BEIS	Which	Which	Walkers
Cost/unit	p	20.4	60.0	55.0	13000.0
Info from		Carbon Trust 2020			Walkers
Kwh equivalent/unit	kwh	1.00	10.74	7.25	2700.00
CO2 emmissions/unit	kg	0.23314	2.75672	1.55537	0
£/100kwh	£	£20.40	£5.59	£7.59	£4.81
CO2 emmissions/100 kwh	kg	23.31	25.67	21.45	0.00

Observations

This is not a league table but rather the information provides a snapshot of the current situation on energy consumption for a range of houses in Sheepscombe. Some of the houses have been built or refurbished with a view to minimising energy consumption. All of the houses are maintained to a relatively high standard. The main variation in energy consumption should reflect the age, insulation and draught-control measures in place, but other important factors are likely to be: thermostat temperature settings (vary from 16°C to 21°C); occupancy (all houses generally occupied during the day); extent of active management of thermostat settings daily and/or seasonally. Several of the houses have invested in solar PV and the benefits in terms of reduced electricity imported from the grid, reduced cost, and reduced carbon emissions are clear. However solar PV is not an option for all properties due to the roof aspect, shading, heritage listing restrictions or lack of space. Overall the results are reasonably consistent with the average across the UK, including the relatively low take-up of heat pumps.

It is possible to see how some of the properties, particularly the newer ones, could achieve Net Zero emissions over the next few years, but there are considerable challenges to weaning much of the older housing stock off heating oil or LPG, particularly where solar PV is not an option. It is also possible to use the information to assess the impact of strategies for reducing energy consumption. Sharing information and learning from the experience of other local householders is a key aim of this project.