BHESCo
A Community Energy Services Co-operative

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ENERGY SURVEY REPORT

About the Property

Name:
Address:

Type of property: Flat (mid-terrace)
Approximate age: Pre-1900s
Orientation: West – south-west facing
Tenure: Owner-occupier

Bedrooms: 3
Communal rooms: 2
Bathrooms: 2
Description of locality: Sub-urban

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1. Summary

Below, we have summarised our recommendations for energy-saving improvements to your home. Please note that the figures given are estimates only.

Table 1.

Recommended Measure	Annual reduction in energy cost (£)	CO2 Saving (kgCO2e)	Estimated Upfront Cost (£)	Estimated Payback Period (years)
Replace conventional lightbulbs with LEDs.	132	401	134	1
Installation of radiator reflector panel on exposed wall radiator	4	9	5	0.7
Fix secondary glazing film to windows	13	96	28	2
Install insulation between the rafters in the roof	44	326	500	11
Install internal wall insulation on all external walls	44	326	Unknown	Unknown

Additional recommended measures include:

- Insulate the floor in the entrance hallway
- Insert chimney balloon up chimney in living room
- Set washing machine and dishwasher to an 'Eco' setting when in use
- Install Photovoltaic Solar Modules (solar panels) on the roof
- Connect a power-diverter to the hot-water cylinder (if installing solar panels)
- Draught-proof door separating utility room and the smallest bedroom (second floor); place removable cushioned draught excluder at base of the door; also fit a thick curtain against it
- Fill hole in external wall (kitchen) with foam filler and make good
- Draught-proof sash windows in living room and others, where appropriate
- Use power-down leads/plugs to prevent electrical appliances from being left on standby for long periods of time

- Fit secondary glazing panels/Perspex or glass to each of the single-glazed windows
- Draught-proof existing front door; fit letterbox draught-excluder; fit thick curtain against the door; alternatively, replace the door with energy efficient door.

Figure 1.

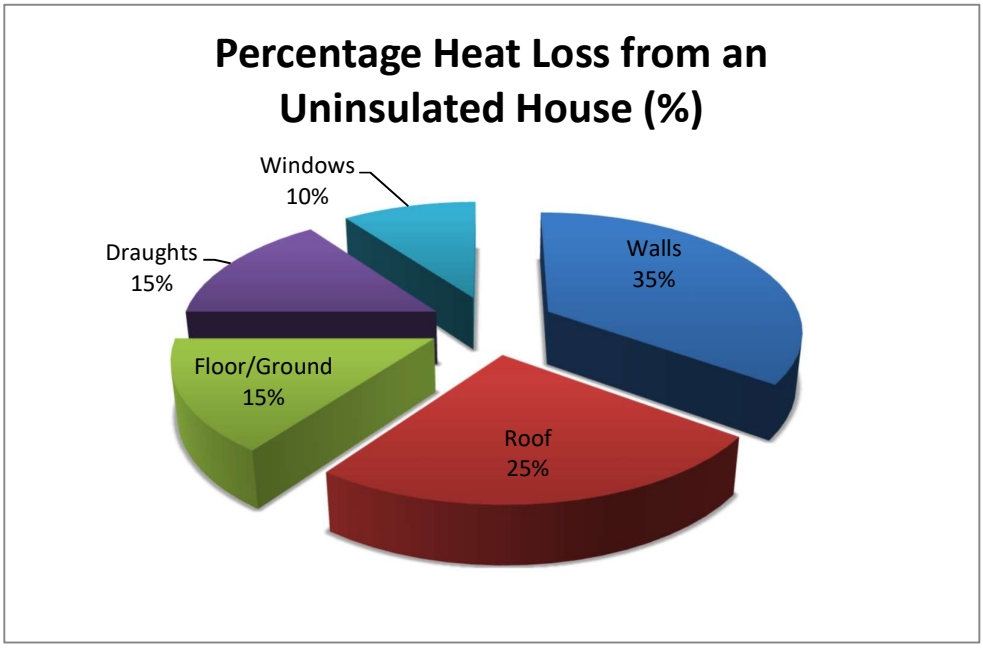
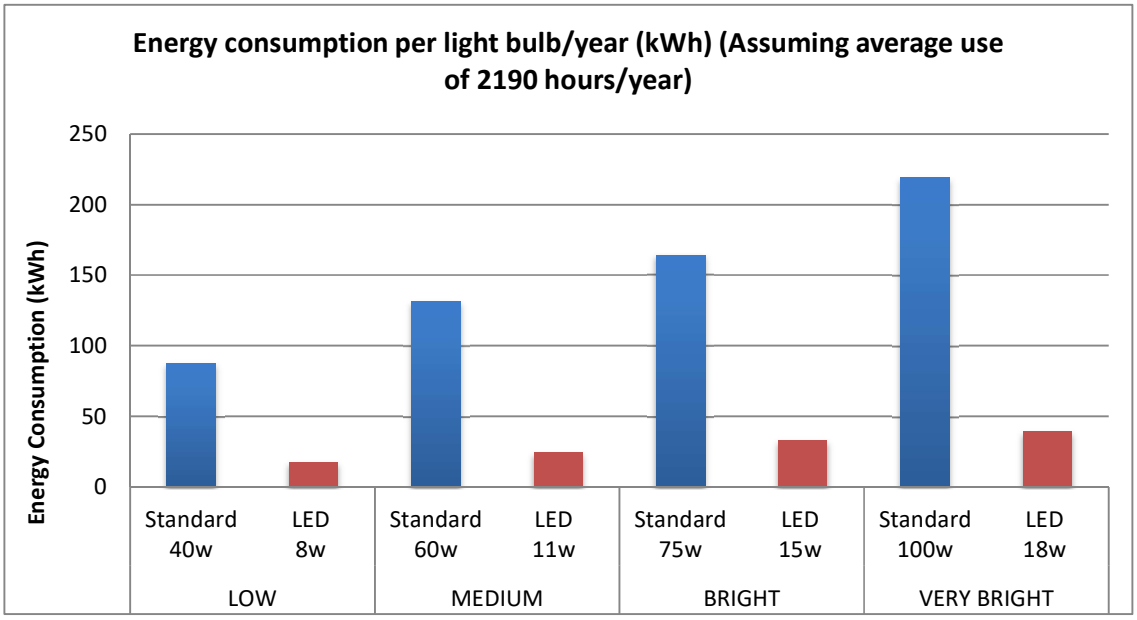


Figure 2.



2. Your Energy Bill Summary

Your current energy tariff:

Table 2.

Current Energy Tariff	Supplier/ Tariff	Unit Rate (p/kWh)		Standing Charge (p/day)	Annual Consumption (kWh)	Total Estimated Annual Cost (£)
Gas	**Ovo Energy/** Better Energy	2.46		27.4	10410	794
Electric	**Ovo Energy/** Greener Energy	**Day**	13.6	27.4	2482	
		Night	N/A			

Alternative Supplier tariffs:

Table 3.

Alternative Energy Tariffs	Supplier/ Tariff	Gas		Electric		Total Estimated Annual Cost (£)	Total Estimated Annual Saving (£)
		Unit Rate (p/kWh)	Standing Charge (p/day)	Day Unit Rate (p/kWh)	Standing Charge (p/day)		
1	**Octopus Energy** Green Octopus	2.67	18.9	13.44	21	757	250
2	**Octopus Energy** Octopus 12M Fixed	2.67	18.9	13.05	18.9	740	300
3	**Bulb Energy** Vari- Fair	2.63	27.3	13.5	27.3	808	No Saving
4	**Bristol Energy** Bristol Energy 1 Year Fix Issue 7	3	19.18	13.57	22.13	800	No Saving
5	**LoCO2 Energy** Pocket	2.94	23.1	12.8	23.1	792	No Saving

Our recommended energy tariff (based on value for money, customer service and your requirements):

Table 4.

Energy	Gas	Electricity
Supplier	Octopus Energy	
Tariff	Octopus 12M Fixed	
Tariff Type	Fixed prices	
Payment Method	Monthly Direct Debit	
Unit rate (p/kWh)	2.667	13.051
Standing Charge (p/day)	18.9	18.9
Tariff Ends On	12 months after supply switch date	
Price Guaranteed Until	12 months fixed term	12 months fixed term
Exit Fees	N/A	N/A
Estimated annual spend	£740*	
Estimated annual saving	£300*	

*Based upon your energy consumption detailed in your energy bill dated 14/11/16.

As you can see from the above comparison of your energy tariff with alternative green energy tariffs on the market, you could save approximately £300 per year by switching. The tariff we have recommended is the *Octopus 12M Fixed* offered by Octopus Energy (https://octopus.energy/), as this would provide the greatest savings compared to what you are paying at present. All except for one (Bristol Energy/ Bristol Energy 1 Year Fix Issue 7) of the energy suppliers/tariffs listed in *Table 3* derive the energy they supply from renewable sources.

If you wish to discuss this further and/or switch to an alternative energy tariff, please contact the BHESCo office to speak with one of our Advisors on 0800 999 6671.

3. Measures Evaluated

3.1 Lighting

Observations:

There are a total of 19 fixed and 9 portable light fittings throughout the property. The lighting consists of the following types: 11 halogens, 11 compact fluorescents (CFLs), and 6 LEDs.

Recommended measures:

Replace the halogen lightbulbs with high quality energy efficient LED equivalents. It is also recommended that when CFLs reach the end of their life, they are replaced with LEDs. This is because good quality LEDs instantly produce full beam when switched on, are more efficient, can last longer, and have no traces of toxic mercury, which means that they do not have to be disposed of in special recycling facilities.

It should be noted that the calculations demonstrating the monetary/carbon savings shown in the tables below are based on some general assumptions. The figures assume that each lighting type is used for an equal amount of time during the course of the year. However, they give as an accurate picture as possible of the proportion of savings to be made by switching the lighting to LEDs throughout.

Table 5. Estimated reduction in annual electricity consumption, carbon dioxide emissions, and approximate cost, from replacing all 11 halogen lightbulbs with LEDs:

Pre-measure electricity consumption (kWh/year)	Post-measure electricity consumption (kWh/year)	Annual reduction in electricity consumption (kWh)	Annual reduction in electricity cost (£)	Annual reduction in CO2 emissions (kgCO2e)	Approximate installation cost (£)	Rough payback (years)
1128	154	973	132	401	134	1

3.3 Heating and Hot Water

Observations:

There is a total of 7 radiators throughout the property (1 of these is a towel heater situated in the bathroom), 6 of which are fitted with Thermostatic Radiator Valves (TRVs), allowing the occupier to control energy output from the gas central heating system between the rooms. Three of these are situated adjacent to external walls, while four are next to internal walls. All except for 2 radiators (towel heater, external wall radiator in one of the second-floor bedrooms) were fitted with radiator reflector panels.

Recommended measures:

We recommend fitting a radiator reflector panel behind the radiator situated next to the external wall in one of the 2 bedrooms on the second floor. This will help to reflect heat otherwise lost through the wall back into the room.

The condensing boiler is an efficient model that was installed less than ten years ago. We would therefore not recommend upgrading the heating system yet.

Table 6: Estimated reduction in annual heat consumption, carbon dioxide emissions, and approximate cost, from fitting a radiator reflector panel behind the one radiator currently without one:

Current heat consumption (kWh/year)	Post-measure heat consumption (kWh/year)	Annual reduction in heat consumption (kWh)	Annual reduction in heat cost (£)	Annual reduction in CO2 emissions (kgCO2e)	Approximate installation cost (£)	Rough payback (years)
10410	10327	83	4	9	5	0.7

General comments:

Your heating consumption is less than the national average. When you leave the property, always ensure that you turn you heating and hot water off to prevent from wasting energy. Contrary to popular belief, it is not preferential to leave your heating turned on all day on a low temperature setting, nor any hot water cylinders, as opposed to switching it off when you are away from the property.

Turning your room thermostat down one degree will save you up to 10% on your energy bill.

3.9 Solar Photovoltaic Module (PV)

Observations:

The home-owner specified that they might wish to install solar photovoltaic modules on the roof of the property. The front and back of the property is east-west facing (refer to figure 5 on page 25) which, while not completely ideal for solar, is still suitable for solar electricity generation. There is limited space on the east-facing side of the roof for installing solar.

Recommended measures:

As mentioned above, there is limited space on the east-facing side of the roof for installing solar photovoltaic modules, however some could be installed on the flat part of the room-in-the-roof. Having taken rough measurements of the west-facing part of the pitched roof, it is estimated that six panels, with a generation capacity of almost 2kW, could be installed here. It is possible that a further 2 panels could be installed on the east-facing part, which would provide a total generation capacity of approximately 2.112kW.

If you can afford to purchase solar panels for your home, we would strongly recommend this option. It saves money on your energy bills, can increase income through generation and export tariff payments from the FIT scheme, can reduce reliance on fossil fuels, and can enable a household to independently generate its own electricity without total reliance on the centralised national grid system. If you plan to sell the property in the near future, it will also add to its value.

As you can see from this top-down image of the property from Google Earth, the west-facing side of the roof is unshaded and has space to fit solar panels.

The west-facing side of the roof has much less space, and is partly sheltered by the tall chimney, however we estimate that an additional two panels could be installed here.

Figure 5.