

Humshaugh Carbon Footprint Household Survey 2020 SUMMARY REPORT

In Partnership with
Northumberland County Council & Community Action
Northumberland

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1 Introduction

This report presents the findings from an online survey of the households within Humshaugh Parish. The survey took place between 25 March 2020 and 3 May 2020. Participants were asked to respond in relation to their behaviour as it was before the Covid-19 lockdown. A total of 110 households within Humshaugh Parish completed the survey. The number of responses approximates to a 30% response rate.

We have used the UK Government's (BEIS, 2019) CO₂ emission factors for heating, electricity and all forms of transport. For emissions related to food and recycling, in the absence of any UK Government estimates, we have used Carbon Independent's CO₂ emission factors (<https://www.carbonindependent.org/>). There are several alternative on-line Carbon Footprint calculation methods and each uses slightly different methodologies and assumptions.

Two important differences between our methodology and that used by several of the most widely used carbon footprint calculators are:

- our estimates are for **households not per person**
- our estimates **do NOT include** any CO₂ emissions which will have resulted from **every other forms of household spending** (on leisure activities, clothing, electrical goods, phones and their use, etc)

2 Electricity Consumption

Electricity consumption makes a significant contribution to Humshaugh's total carbon footprint accounting for 8% of the total.

For individual households, there is a considerable variation around this 8% average figure. Size of dwelling, level of insulation, number of people in household and use of electricity as the main source of heating are the main factors accounting for this variation. The survey also suggests that there may be scope to lower Humshaugh's carbon footprint from domestic electricity consumption because:

- currently only 37% of households are on some form of green tariff
- just 35% of households have a smart meter; among those who do have a smart meter, two-thirds thought it had helped to reduce their energy consumption by up to 10%
- less than half of households (46%) mostly have 'low energy' light bulbs

3 Home heating

Main fuel for heating

Over three quarters (77%) of households rely on the direct burning of some form of fossil fuel to provide the main source of heating for their home. Some 58% of households use oil for their main form of heating. Overall, home heating accounts for **28% of all household CO₂ emissions**.

The main fuel used for home heating has a marked effect on the average household carbon footprint. Households burning oil or coal to provide their main source of heating generate much higher emissions. The extreme difference between fuel types may have been widened by differences in insulation, because the majority of homes with oil or coal are old and built in stone without wall insulation, while the majority of the homes with LPG are relatively new and have modern standards of insulation and draught exclusion.

Main Fuel for Home Heating	Heating other than by electricity	Heating plus all electricity use
Average Household Carbon Footprint Tonnes CO ₂ e		
Coal	12.3	13.3
Oil	5.8	6.7
Electricity	0.0	2.6
LPG	1.5	2.3
Wood	0.7	1.7

Loft insulation

The majority of respondent households could reduce their energy bills by increasing the amount of loft insulation. Only just over a third (34%) have a loft insulation thickness of 300mm or more.

External Wall Insulation

Humshaugh Parish has a historical built environment containing a Conservation Area covering the centre of the village, together with a scattering of listed buildings across the remainder of the Parish. As a consequence the Parish has a numerous stone built homes with no wall insulation.

Type of windows

Over a fifth (21%) of respondent homes are not fully double- or triple-glazed, of which many are Listed. There are also several rented properties that are not listed but are single glazed.

4 Transport Use

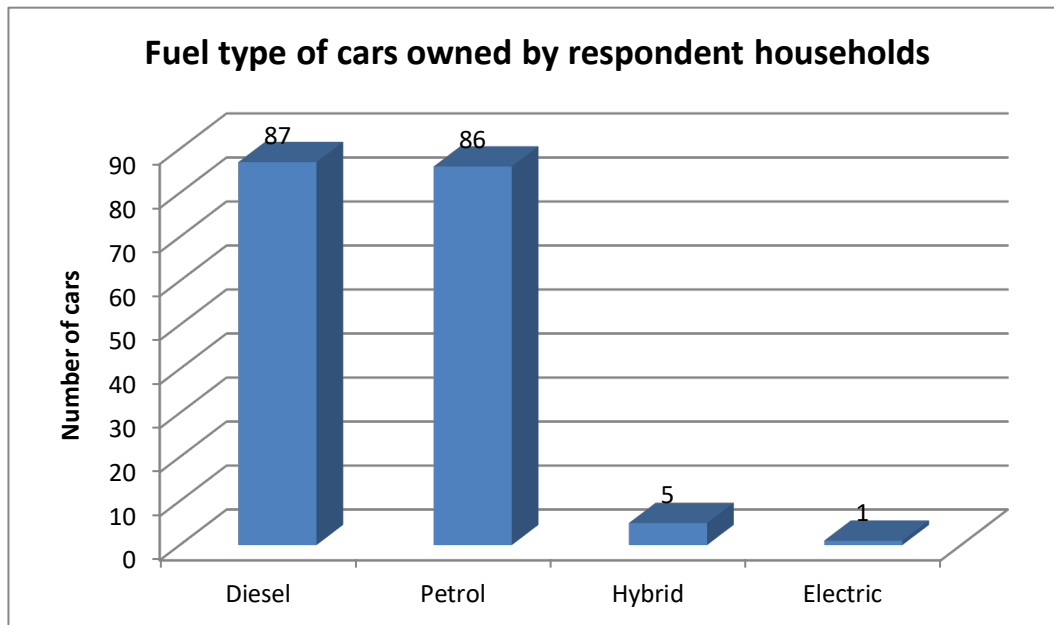
Public Transport

Just 6% of respondents reported bus use daily or most days, and only 1% reported using trains daily or most days. Humshaugh Parish is served by a very limited bus service and the nearest railway station is more than 5 miles from the centre of the Parish.

Cars

Cars are by far the most commonly used mode of transport, with 83% reporting using a car daily or most days. There was no respondent who used a motorbike daily or most days. Levels of car ownership are relatively high in the Parish. The majority of respondent households have more than one car.

Car use makes a very significant contribution to Humshaugh’s total carbon footprint through accounting for 26% of the total. The overwhelming majority of cars used by respondent households are powered by fossil fuels.



Commuting

Households commute to a wide range of different locations. Newcastle city centre is the most common destination for commuters from Humshaugh. Assuming that our respondents are broadly representative of the whole population, then around 40 residents can be assumed to be regularly commuting into Newcastle City centre.

Flights

Flying makes a significant contribution to Humshaugh’s total carbon footprint, accounting for 16% of the total. The average number of flights per household over the last 12 months was:

- 2.1 return short haul flights
- 0.7 return long haul flights

However there is a wide variation across respondents, with a relatively small number of very frequent flyers at one extreme contrasting with approaching half (45%) of households who had not taken any flights in the last 12 months.

Only a very small minority of flights have been ‘carbon offset’ by Humshaugh households. One household had carbon offset all of their flights, 2 had carbon offset 50-75% of their flights and 4 had carbon offset 0-25% of their flights.

5 Food and recycling

Food purchasing and consumption is a significant element of Humshaugh's total carbon footprint because it accounts for 22% of the total. Relevant points from the survey include:

- most respondents eat some organic food, but very few eat mostly or all organic food
- 12% of respondent households do not recycle glass waste
- 23% of respondent households do not recycle garden waste

6 Carbon Footprint Reduction Measures

Household investment in lower carbon forms of home heating to-date

Several 'pioneer' households have invested in lower carbon forms of home heating, and these respondents stated that 'increased level of concern about climate change' had been the main trigger stimulating their investment. Other triggers leading to such investment included increased awareness of cost effectiveness and grant support. Householder assessment that the cost would outweigh the benefits was the most frequently cited barrier to such investment, followed by lack of funds and disruption caused by installation.

Type of Investment	Number of respondent households
Ground source heat pump	1
Air source heat pump	7
Biomass boiler	4

Household investment in household renewable energy generating equipment

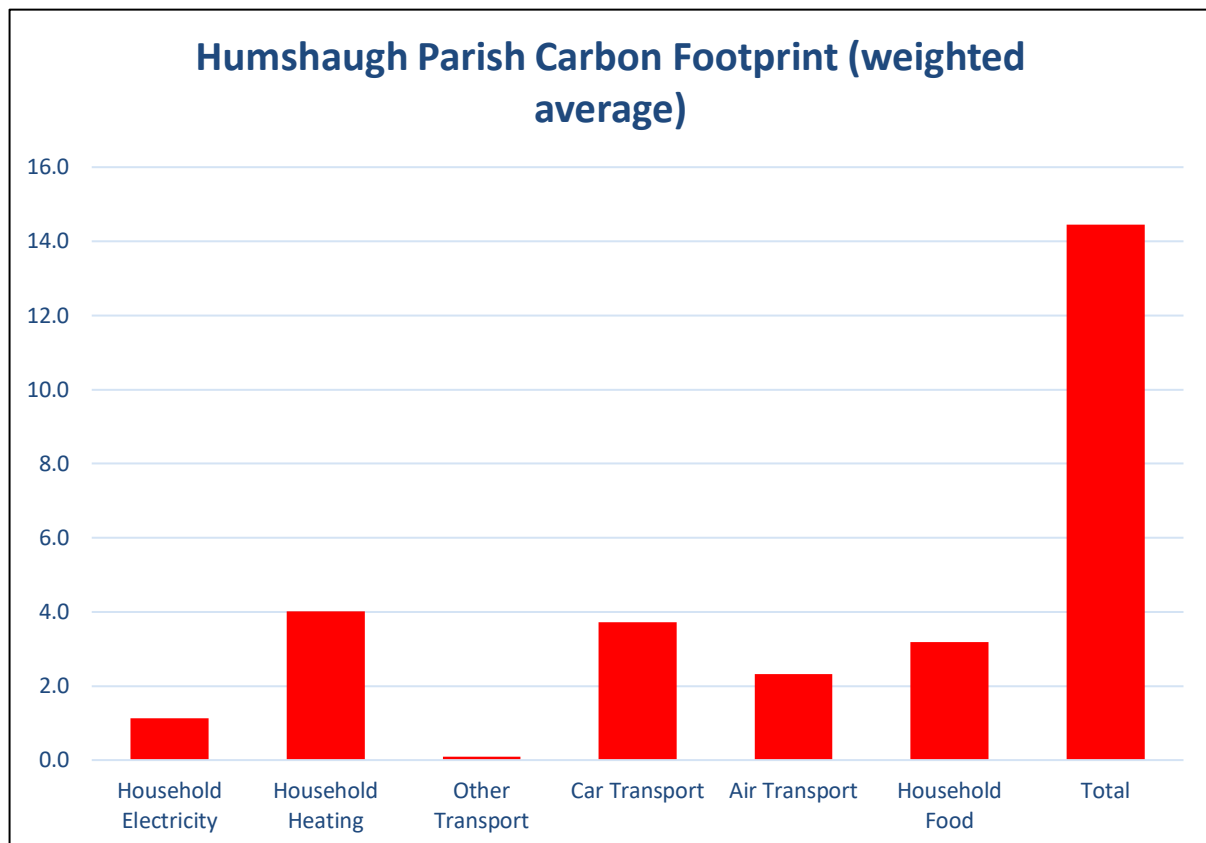
Nearly half (48%) of respondents stated they have considered investing in solar photovoltaic (PV) panels for their home, but only 9% have invested to date. One in five households (20%) have considered investing in a solar hot water system, but only 5% have done so to date. Concern about climate change was the most cited reason stimulating the investment in solar PV panels or in a solar hot water system. A range of barriers preventing investment were cited by householders, with the most commonly cited being 'lack of funds' along with 'planning restrictions' (e.g. listed building or conservation area consent).

Household Investment in installing energy efficiency measures

The majority of households have invested in installing some form of energy efficiency measures into their home. Several of those who have not done so gave as the explanation the fact that they rent their house or have only recently moved into it.

7 Overall Household Carbon Footprint of Humshaugh Parish

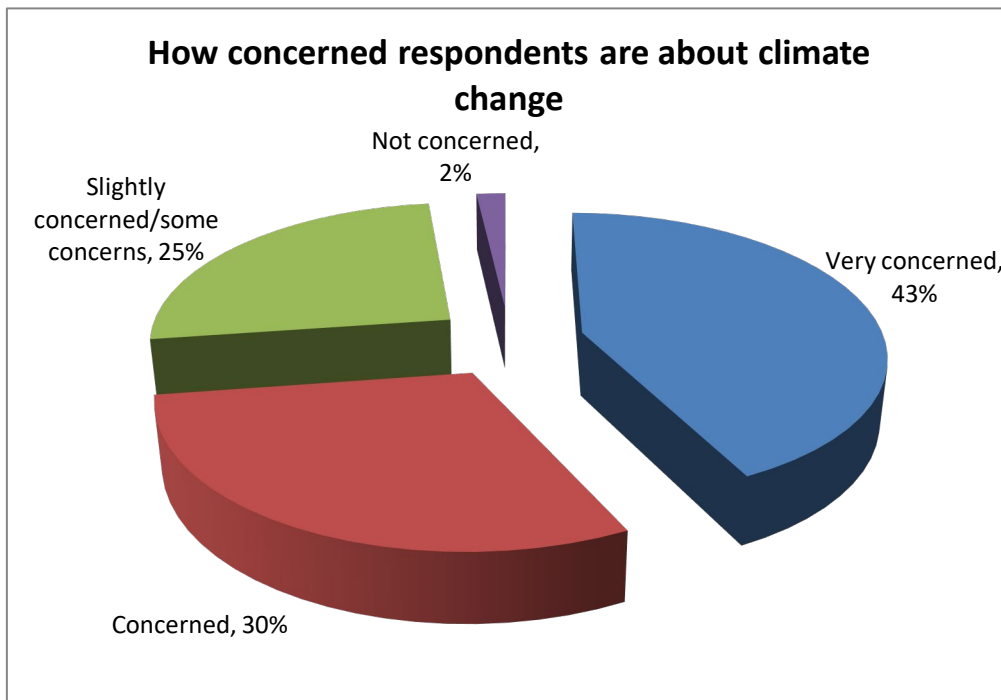
Households in Humshaugh generate an estimated average of 14.5 tonnes of CO₂e¹ per annum, excluding emissions from other forms of expenditure not included in our analysis. The average household carbon footprint is higher than the national average. Heavy reliance on personal car use, long distance commuting, a high proportion of poorly insulated homes and heavy reliance on oil as the main source of heating all contribute to this relatively high total.



8 Potential to reduce Humshaugh's Household Carbon Footprint

The overwhelming majority (73%) of respondents are concerned or very concerned about climate change; with just 2% who were not concerned. This concern was reflected in the level of support for potential initiatives to reduce Humshaugh's Carbon Footprint.

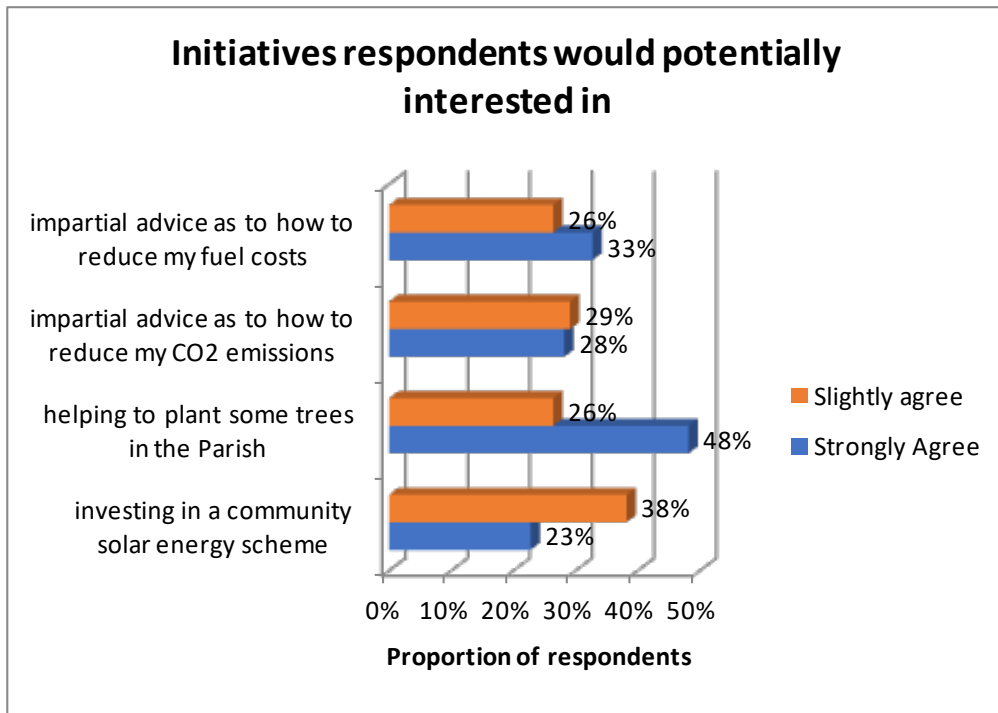
¹ CO₂e, or carbon dioxide equivalent, is a standard unit for measuring carbon footprints. The idea is to express the impact of each different greenhouse gas in terms of the amount of CO₂ that would create the same amount of warming



Respondents expressed a strong interest in installing energy efficiency measures to their home in the future. **Only one in five considered that they would be unlikely or very unlikely to invest in making their home more energy efficient.** Less than one in ten households considered their home to be very energy efficient at present.

In relation to initiatives that householders would be potentially interested in:

- Almost three quarters of respondents (74%) agreed (slightly or strongly) with the statement that they would be potentially interested in helping to plant some trees in the Parish.
- More than three fifths (61%) of respondents agreed (slightly or strongly) with the statement that they would be potentially interested in investing in a community solar energy scheme.
- Close to three fifths (59%) of respondents agreed (slightly or strongly) with the statement that they would be potentially interested in impartial advice on how to reduce fuel costs.
- The majority (57%) of respondents agreed (slightly or strongly) with the statement that they would be potentially interested in impartial advice on how to reduce their CO₂ emissions.



9 Towards a Carbon Zero Humshaugh

The findings from the Household survey suggest that there are numerous ways in which individual householders can continue to lower their carbon footprint.

- Reducing home energy bills by:
 - increasing the thickness of loft insulation
 - increasing the use of energy efficient bulbs
 - increasing uptake of other energy efficiency measures, like draught proofing
 - reducing the number of windows that are single glazed
- Replacement of old coal and oil with cost effective forms of low carbon heating systems:
 - collecting the experience of local people who have already installed forms of low carbon heating systems and sharing this with others
- Reducing CO₂ produced by car journeys by:
 - car sharing
 - reducing car mileage by travelling less
 - reducing the number of cars per household
 - using other forms of transport where feasible
- Reducing the impact of flights by:
 - using other forms of transport where feasible
 - carbon offsetting flights

- Considering carefully what food is consumed:
 - increasing the consumption of locally and British sourced food
 - reducing the proportion of food that is binned
 - increasing the proportion of kitchen waste that is composted

The findings from the Household survey suggest that there could potentially be numerous ways in which the community might be able to act collectively to help to lower the carbon footprint of the Parish.

Potential initiatives could include:

- increase the uptake of ‘green electricity’
- a community garden and/or community allotments
- a local glass recycling facility
- a community compost facility
- a community level solar energy generating facility