

Buckden Village Carbon Footprint

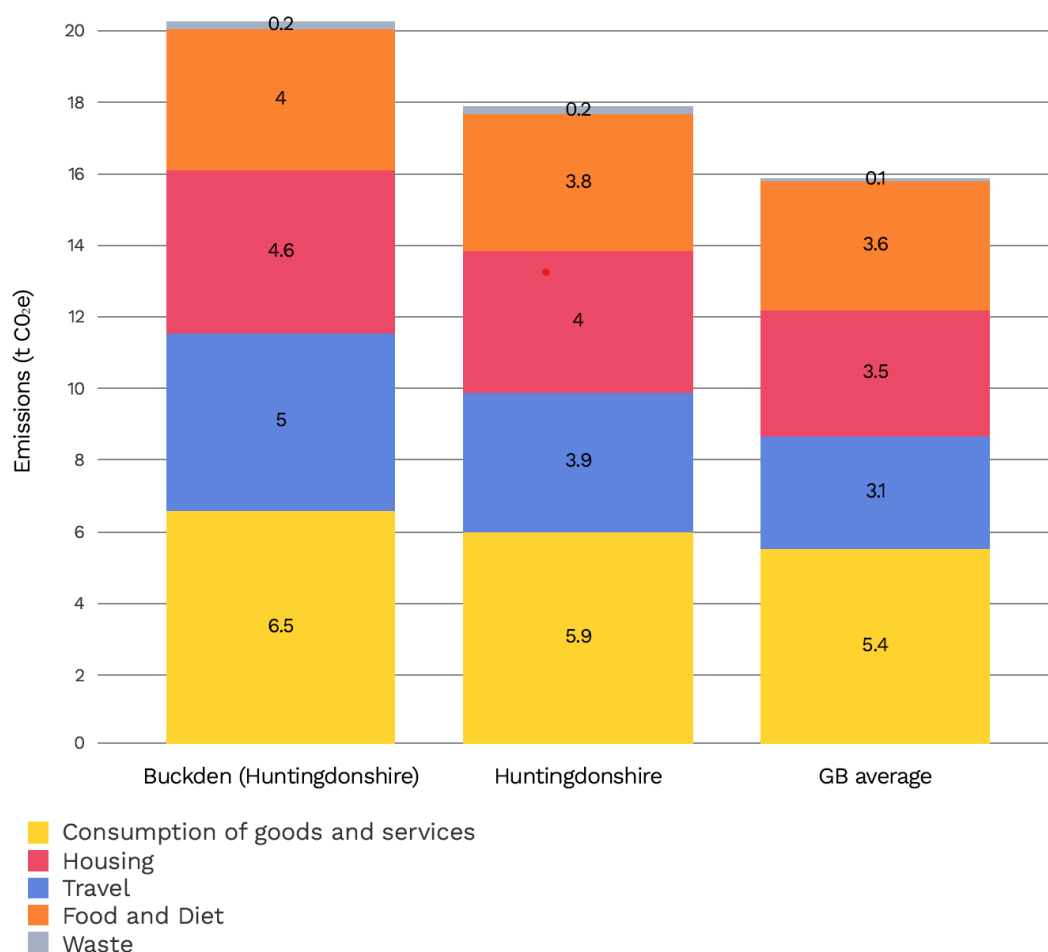
This paper is intended as a discussion document to either become an action plan or to formulate one to try to reduce the carbon footprint of our residents. I think it is vital that we ensure that there are collective goals and actions alongside those that individuals/households can make, as it is likely that these will be more productive. Our targets also need to be measurable so that we can show progress against them. This is going to be difficult in many cases so there will need to be some creative thinking as to how we can measure and celebrate progress. There needs to be as much positivity as possible so ideas for short term gains, low hanging fruit are very important alongside the harder to achieve, longer term changes. **Council members should adopt a “lead by example and inspire others” approach whenever possible.**

Despite having a major potential to reduce our carbon footprint by sequestering carbon, there is no mention here of increasing / improving greenspaces and biodiversity, since it falls under the purview of the Green Infrastructure and Biodiversity Advisory Group. Nor does this paper consider actions which could be taken to mitigate the effects of climate change such as an increasing number of severe weather events, some of which fall under the Flood group’s remit. However, I would like to also propose that we formulate “A plan for the sustainable future of Buckden Village” which would encompass these and other actions which could be taken, such as reducing water consumption, improving air quality and reducing light pollution. Examples of these can be found at <https://www.thametowncouncil.gov.uk/thame-town-council/green-living-plan/> <https://www.holmevalleyparishcouncil.gov.uk/UserFiles/Files/Climate%20Emergency%20Booklet%203-2-20%201%20WEB.pdf>

The information on which this document is based comes from Impact – an online region-level carbon emissions estimator: <https://impact-tool.org.uk>. The tool was developed by the Centre for Sustainable Energy and the University of Exeter and aims to give small communities (parishes and towns) “usable data on their carbon emissions that is easy to understand, easy to share, and which gives them a clear idea of their main ‘impact areas’ – those places where focused community-based action can make the biggest contribution to cutting local emissions”. The table below summarises the estimated average CO₂ equivalent emissions for consumption per household in Buckden and this is then compared to those at district and national levels in the bar chart.

	Total emissions (t CO ₂ e)	Per-household emissions (t CO ₂ e)	%
Total emissions	24,713	20	100
Consumption of goods and services	7,975	6.5	32
Travel	6,075	5	25
Housing	5,585	4.6	23
Food and diet	4,847	4	20
Waste	231	0.2	1

Estimated average CO₂ equivalent emissions for consumption per household in Buckden can be seen to be higher than those locally and nationally. In devising an action plan for the future sustainability of the village, it is important to consider why this might be and whether action can be taken at individual or local level to reduce our collective carbon footprint.



Housing

Buckden residents use of energy in their homes is 15% greater than that used district-wide and 31% greater than the national figure. In the average UK home, 64% of energy is used for space heating, 17% for heating water, 16% for lighting and appliances, and 3% for cooking. As such a large proportion of household energy is used for heating, the type of heating system (i.e. is it low carbon?), and how well the home retains heat, are critical factors. How well a home retains heat depends on a number of factors, including: when and how it was built; how much insulation has been installed; how draughty the home is; the efficiency of the windows; and the behaviour of the residents.

Possible reasons for the higher-than-average use of energy in homes in Buckden:

- Parts of the village have very old buildings which are more difficult to insulate
- Parts of the village have older housing stock which were built before building regulations which improved insulation came into force
- Parts of the village are in a conservation zone and may be limited in respect of steps that can be taken to reduce energy loss
- The average size of houses in the village is probably larger than nationally
- A larger than average number of older residents who may want/need their homes to be warmer than the norm
- Other: e.g. use of energy sources other than gas for space heating/ older properties may not have condensing boilers / efficient heating sources / thermostatic control of radiators / etc.

Targets

- Massively reduce energy demand from buildings
- Smarter use of energy, avoiding times of peak demand
- Increased use of green energy
- New builds and developments to be net zero
- Aim for average consumption to be below 4tCO₂e

Possible Actions

- Provide information to residents about the undesirable effects of wasting energy used for heating both in terms of sustainability and financially
- Survey to ascertain what types of energy source are predominantly used for space heating in the village e.g. gas/oil/coal/electricity/etc.
- Survey to investigate measures residents have already taken to insulate their homes. Use the results to showcase what can be done. The lead by example principle could be applied here.
- Use Parish Online to map EPC certificates. There are three relatively new layers:
 - Current Rating
 - Potential Score Increase
 - Potential to upgrade to Grade C

These layers show what the last Energy Performance Certificate grade a building received, what score it could achieve if guidance is followed, and which houses have the quickest potential to be upgraded to Grade C. This can be valuable for public use because residents can view what their current and potential energy efficiency is and see what the average is in their area. This might engage the community more to improve their own rating, or even their whole road's rating and take a more active approach to improving their energy efficiency.

Also see <https://epc.opendatacommunities.org>

- Provide support/information for residents who want to retrofit insulation or install lower carbon heat sources. E.g. promote the use of the thermal imaging camera. (Lead by example)
- Encourage the retrofitting of insulation and heat loss reduction measures in community buildings.
- Investigate opportunities to encourage householders and community buildings to move to green energy only tariffs. (Lead by example)
- Provide information to allow residents to be "smarter" in their energy use e.g. smart meters, track carbon footprints, track peak demand periods for electricity. (Lead by example)

Transport

Buckden residents' car use results in annual carbon emissions per household of 2.5t CO₂e. This is 40% greater than at the district level and a massive 56% higher than nationally. Similar comparisons for air travel show annual carbon emissions per household are 46% more than at district level and 73% greater than the national average. For public transport use the corresponding figures show that our annual carbon emissions per household are 20% higher than the district and national figures. NB we should be encouraging greater use of public transport so this figure is possibly promising!

Possible reasons for the higher averages:

Car use:

- Buckden is a rural community with relatively poor public transport infrastructure
- By virtue of its rural nature, most people have to travel for work

- Many families have two or more cars
- Buckden has many small businesses which are reliant on their vehicles for their work.
- Older residents are more reliant on their cars for travel to get the services they need
- Insufficient safe cycleways and footpaths to link to local amenities

Air travel:

- More affluent area, greater number of overseas holidays
- Dormitory area with professionals travelling for business

Public Transport:

- Rural area with greater distances to local towns/amenities
- School buses
- London commuter belt

Targets

- Reduced private car travel and a comparable increase in active and public transport
- A complete shift to electric or other low carbon forms of transport (and an end to petrol & diesel cars & vans)
- Massively reduced air travel, particularly among frequent flyers

Possible Actions

- Consider all requests for travel expenses from councillors to ensure that these are strictly necessary journeys and encourage the use of public transport/active travel wherever appropriate. (Lead by example)
- Survey residents to ascertain what vehicles are used for e.g. work, commuting, leisure, typical length of journeys, their use of other modes of transport to gain a better understanding of the role of transport in our carbon footprint
- Encourage walking and cycling through developing and promoting safe cycle paths, footpaths and emphasising the health and well-being aspects of such changes. Walking to school, shops, library, tennis club, football, etc. (Lead by example)
- Inform residents of the other health benefits of reduction in car usage e.g. cleaner air
- Set up no idling zones to reduce air pollution especially in the village centre and outside school.
- Publicise information about efficient driving practices to reduce emissions e.g. inflating tyres correctly, removing unnecessary weight from the boot, taking roof racks and boxes off when not required. (Lead by example)
- Encourage use of local facilities, shop local initiatives (Lead by example)
- Promote/investigate the possibility of local car sharing / electric bike hire / cycle to work schemes (subsidised purchase)
- Is there scope more strategically to influence provision of public transport (e.g.routes, frequency, fares, subsidies, low carbon fleets)?
- Publicise off-setting schemes for those who fly, especially frequent fliers

Food and Diet

Our local consumption of food, and drink including fish and meat gives rise to annual carbon emissions per household very similar to that in Huntingdonshire as a whole and nationally. However, as a nation we consume too much meat and dairy to be sustainable, making it important that we investigate ways in which this can be reduced. Whilst the emissions from a food item can really vary depending on how it is grown or reared, it is clear that animal products, and most significantly beef and lamb, account for the largest proportion of food-related emissions.

Research shows us that changing what we eat will have a greater impact on carbon emissions than changing where our food has travelled from. Although, of course, eating locally-produced food

brings multiple other benefits such as supporting local economies, having more control over mandating more ethical and environmentally-beneficial growing practices. It can also create opportunities for people to better understand where the food they eat comes from and how it's grown or made.

Targets:

- Altered dietary patterns & reduced food waste
- Widely adopted agricultural practices that reduce emissions & increase soil carbon

Possible Actions:

- Communicating and educating about where the emissions in our food come from so that we can make informed choices as to how we might reduce these.
- Behavioural change campaigns to support reductions in beef and dairy consumption which are sensitive to the fact that we live in a rural community where agriculture is vital to the local economy e.g. meat free days each week, pledges to reduce amount of hard cheese eaten per month, etc. . (Lead by example)
- Educate and support campaigns to reduce food waste e.g. "Love Food, Hate Waste". (Lead by example)
- Share excess produce through a community fridge
- Support and publicise the allotments scheme to donate excess produce to food banks
- Research what happens to short-dated items in the local shops / pubs and encourage redistribution to shared food schemes
- Support the work of the Nature Friendly Farming Network to improve soil quality and reduce CO₂ emissions
- Meet with Thornhill Estates and other local farmers to ask what strategies they are adopting to reduce the effect agriculture is having on carbon emissions.

Goods and Services

These make up the largest proportion of our village's carbon footprint. We contribute 10% more carbon dioxide per household than Huntingdonshire as a whole and 20% more than the national average.

All goods that we buy will have had carbon emitted in their making (including the sourcing of raw materials), packaging, shipping and sale and some will emit carbon in their use. Without clear carbon labelling or proper life-cycle assessments (see appendix), it is difficult to know the scale of emissions resulting from each item. However, it is clear that with every new product made, more carbon is emitted (and more resources are extracted and sourced – which itself can have huge environmental and social impacts). Reducing how many new goods we buy in the first place is the best place to start in terms of reducing goods-related emissions; and then of course re-using and repairing items where goods are essential to our everyday lives.

Carbon emissions from the services we use relate to the energy used by that service provider (e.g. heating in a leisure centre, pub or hospital), as well as the carbon emitted as a result of goods they buy and use (e.g. gym equipment, vehicle repair machinery). We have far less opportunity to influence these but can make it a long term aim to try to do so.

Targets

- Change our consumption habits by buying better quality, longer lasting items;
- Use green public procurement principles (appendix)
- Decarbonise power generation

Possible Actions

- Update PC procurement rules to ensure new purchases, contracts/services minimise negative impact on CO₂ emissions and the environment (Lead by example)
- Provide information about the advantages of reducing the number of new goods purchased e.g. disposable clothing, single season fashion
- Publicise toy libraries, nappy exchange schemes, rental schemes for expensive but short-term use items for young families
- Encourage a “buy only what you need” mind set. (Lead by example)
- Run a loan scheme for more expensive items for DIY/gardening e.g. power tools. (Can the PC purchase these and run a loan scheme?) (Lead by example)
- Investigate whether there are opportunities to encourage businesses to switch to green energy tariffs, or to support local businesses who want to reduce their emissions (e.g. with cargo bike deliveries to replace vans; energy efficiency improvements to buildings to reduce heat demand; low carbon procurement policies; local sourcing and carbon-conscious materials?)

Waste

The carbon footprint for the management of waste per household in the village appears very small but is almost double that nationally. Furthermore, the management of waste is only a very small component of the emissions that waste actually represents since everything that applies to goods in terms of their manufacture has to be considered within their disposal! We must also bear in mind that different materials create different problems in the environment, not just emissions, when they are disposed of. Thus it is important not just to minimise waste but to try to avoid it in the first place.

Targets

- Greatly increase “repair, re-use and recycle” to generate a proper circular economy
- Remove plastics from waste
- Actively managed carbon storage schemes

Possible actions

- Help residents in these aims by setting up a repair café, swap-shops and support these. . (Lead by example)
- Publicise the advantages of buying second-hand, pre-owned items and support Swish events
- Remind/educate residents about recycling textiles/shoes, etc.
- Publicise online sites for recycling/repurposing/donating unwanted items
- Run/publicise “How To” events for upcycling
- Run garage /backyard sale/swap days
- Educate to ensure recycling is effective
- Provide small electrical item recycling bins and promote the sustainable disposal of IT equipment and phones where possible (Lead by example)
- Green living weeks, challenging residents to reduce their carbon emissions or to cut out plastic. (Lead by example)
- Investigate communal composting schemes

Appendix:

Life Cycle Assessment: A life cycle assessment (LCA) is a way of measuring a product's environmental impacts across its whole life. Local councils could have these five phases in mind when considering options for a new purchase, project, or service.

There are systems that can be used in carrying out such assessments, but in simple terms a product goes through five phases:

1. Raw Material Extraction – to make the product.
2. Manufacturing & Processing – creating the product.
3. Transportation – delivering the product to retailers or customers.
4. Usage & Retail - both using and disposing of the product.
5. Waste Disposal - disposing of any waste the product itself produces.

Green Public Procurement Principles:

- ask for an item's environmental product declaration (EPD)

If one is not available then councils should consider:

- Whether a proposed purchase is made from manufactured or recycled materials (though some recycling methods also have an environmental impact) – using natural materials such as wood deserves consideration.
- The lifetime expectancy of a new purchase (the longer the better), which in turn relates to how robust it is and how much it is at risk from climate change, vandalism or other threats.
- Whether it has elements that may be replaced, giving it a longer life (although the less components the better)
- Whether its operation has a carbon impact
- How it may be recycled or re-used in due course