

GHPC Climate Action Plan

Starting Point

It is generally accepted that global warming is a result of the release of Green House Gasses (GHGs) into the atmosphere from human activity over the last 200 years. The most significant GHG is Carbon Dioxide (CO₂) from burning fossil fuels but other gasses such as methane are also contributors. GHGs are measured in grams of Carbon Dioxide equivalent (CO₂e) which take into account the range of impacts of different GHGs. GHG emissions are measured in tonnes of CO₂ per annum (tCO₂e pa).

The UK Government is committed to achieving a “net zero” (i.e. CO₂e emitted less any CO₂e absorbed by sequestration in plants or through carbon capture processes) by 2050 to limit global warming to 1.5°C.

This Action Plan identifies actions that Great Haseley Parish Council (GHPC) can take to make a significant difference to the level of GHG emissions in the Parish by focusing on the biggest sources of emissions and actions that are within GHPC’s powers. Phase 1 (Leading by Example) identifies actions that GHPC can take on its own estate, whilst Phase 2 (Influence and Support) will outline actions GHPC can take to influence and support climate action in the wider Parish.

What is the target?

GHPC has not previously adopted a target for carbon reduction. Before doing so, it is worth understanding where there are overlapping targets and what those mean.

Nationally the Climate Change Act commits the UK to the following carbon reduction schedule (known as Carbon Budgets):

By	Reduction in CO₂e pa compared to 1990
2022	37%
2025	51%
2030	57%
2035	78%
2050	100%

UK Government has strategies deigned to achieve these targets. It is on track to achieve the 2022 milestone but is behind on progress to future targets.

Oxford City Council have a target for a zero carbon city (ZCOP) by 2040 and a carefully worked through plan including actions and dependencies to achieve that target by 2050.

Oxfordshire County Council have two targets:

- Operate at net-zero carbon by 2030
- Enable a net-zero Carbon Oxfordshire by 2050.

OCC have worked with District Councils and parishes on a “Pathways to zero carbon Oxfordshire” which provides a framework for policies to meet their targets.

SODC have set two carbon reduction targets:

- Making the operations of the council itself net zero by 2025
- Achieving net zero for all of South Oxfordshire by 2030 (i.e. the 100% reduction target set in the legislation but 20 years earlier than required in legislation).

SODC has no plan to meet these targets and will not be looking at a plan for the District level target until 2022/23.

All of these targets are “Territorial” measures. That is they are for the CO₂e emitted by transport, homes, industry, agriculture etc. in the territory (District, County, nation etc.). They do not include the CO₂e emitted outside the territory to create goods, services and food that are imported into the territory (the 'Consumptive' footprint). Taking effective action to reduce the carbon in products produced elsewhere in the UK or abroad is far more challenging than addressing local emissions.

Haseley Earthshot Action Group (HEAG) have an aspiration for Great Haseley Parish to achieve net zero at both consumption and territorial level by 2030. HEAG recognises this is beyond the scope of either it or GHPC without significant support and action by local residents. HEAG will therefore continue to promote behavioural change, targeting consumption related emissions and promoting nature-based carbon capture solutions, and is well placed to raise awareness of this as a core part of their activities.

GHPC Climate Action Plan: Phase 1 - Leading By Example

Objective: GHPC will aim to achieve net zero for its own operations by 2025.

This is in line with equivalent OCC and SODC targets and, while a small impact in its own right, will signpost the actions required in the parish to achieve the wider objective. This target is also achievable if the plan outlined below is followed.

GHPC's Current Carbon footprint

GHPC's CO₂e footprint today is around 81 tonnes of CO₂e per year. This figure has been calculated to reflect:

Energy requirements for PC Infrastructure (Village Hall and Cricket Pavilion)¹

Electricity - 0.93 tonnes CO₂e

CO₂e footprint of the eight members of GHPC (seven councillors and one clerk)

Current average UK footprint of 10 tonnes CO₂e per person per year²

It should be noted that no Carbon Footprint estimate is completely accurate, no matter how detailed the calculation, and using average values provides a sufficient framework to illustrate how GHPC CO₂e footprint can be reduced through the following measures.

Phase 1 Action Plan

1. Switch to a 'Green' electricity provider - GHPC will switch PC infrastructure energy contracts to a reputable renewable energy provider.

Switching GHPC electricity supply to a company that provides renewable energy, and one that is also investing in generating renewable energy, helps develop new renewable technology and ensures the council isn't supporting dirty energy financially³. This is also the quickest and simplest action to take.

Switching to a renewable energy provider will have the effect of lowering the GHPC CO₂e footprint due to electricity use from 0.93 tonnes per year to between 0 - 0.7 tonnes CO₂e per year⁴.

2. Save energy - GHPC will reduce energy use on the PC estate through adoption of energy efficiency measures and retrofit PC owned buildings with appropriate insulation.

¹ Calculated as average value for a Small House (to take in to account intermittent use of both buildings) - <https://carbonindependent.org>

² <https://carbonindependent.org>

³ [Friends of the Earth](#) has identified Ecotricity and Good Energy as the greenest energy companies, whilst the [Energy Saving Trust](#) recommends Ecotricity, Good Energy and GEUK. Advice can also be sought from the Oxfordshire Association of Local Councils (OALC) consultancy with [Clear Utility Solutions](#), which is committed to bringing greener and more cost-effective energy tariffs to OALC members.

⁴ <https://carbonindependent.org>

GHPC will ensure any council buildings are as energy efficient as possible, e.g. by ensuring energy efficient bulbs are used for lighting. Following the recommendations of a previous energy audit, GHPC will investigate ways of insulating PC buildings and possibly altering the heating system if judged suitable⁵.

Reducing the energy usage on the PC estate through increased energy efficiency will serve to both lower energy bills and reduce the remaining CO2e footprint due to electricity use⁶.

3. Divest from Fossil Fuels - GHPC will ensure its estate is set up to minimise fossil fuel use.

GHPC has already replaced all gas systems on the GHPC estate with suitable electrical alternatives. By eliminating gas use on the GHPC estate, the CO2e footprint due to GHPC energy use is reduced to almost zero⁷.

4. Produce green energy - GHPC will examine ways in which to adopt renewable energy generating technology to power its own estate.

GHPC will investigate the possibility of installing renewable energy generating technology, such as solar PV, at council buildings.

Several energy companies provide a smart export tariff, which pays for any electricity generated that isn't used by the building, including offering top prices if the solar PV is used in conjunction with a battery⁸. Funding options include Salix loans⁹, crowdfunding or possibly grants. Buildings using renewable energy will be used as a showcase to help local people see these technologies first-hand, and also test the process for renewable installations for listed buildings and conservation areas for the benefit of the wider community.

The costs of installing solar PV, or other renewable technologies such as heat pumps, are often much lower if done in bulk. This presents an opportunity for GHPC to bring together local homeowners and businesses to develop such a scheme – a widely used model in the Netherlands and places such as Suffolk and Frome in the UK. This could even pave the way for a community micro-grid¹⁰, providing energy resilience within the community. Suggestions on this will be covered in Phase 2 of this Action Plan.

Installing some form of renewable energy generation system will not decrease the GHPC CO2e footprint dramatically, but it will help to both reduce energy bills (through not having to run everything off the mains) and will also give GHPC infrastructure a level of resilience since it will not be completely dependent on mains power (useful in the case of power cuts and emergencies).

5. Land Management - GHPW will address the management of PC owned land and road verges to increase biodiversity and maximise the drawdown of carbon pollution.

⁵ Loans for this kind of PC project are available through Salix Finance
<https://www.salixfinance.co.uk/index.php/loans/parish-councils>

⁶ Not possible to quantify, dependent on what measures are deemed appropriate to adopt.

⁷ This assumes that PC electricity supply has switched to a renewable energy provider
(<https://carbonindependent.org>)

⁸ For example, Octopus was the first to offer a tariff to pay for exported energy (which will be metered) <https://octopus.energy/outgoing/>. Other companies will follow suit.

⁹ <https://www.salixfinance.co.uk/index.php/loans/parish-councils>

¹⁰ <https://microgridknowledge.com/uk-community-microgrids-bristol/>

Actions 1-4 show how GHPC can reduce the CO₂e footprint of its estate but this still does not result in the GHPC estate being carbon neutral and does not account for the CO₂e footprint of the Councillors. To achieve this, some form of carbon capture is needed.

Appropriate management of GHPC owned land could achieve the required carbon capture. The amount of CO₂e taken up by woodland is around 0.5 kg per square metre per year¹¹, and the Millennium Wood Restoration Project should restore 0.9 Hectares of woodland; this will result in the sequestration of 4.5 tonnes of CO₂e per year (still far short of the necessary target). There is no space at the moment on GHPC land for further woodland creation. However, it has been demonstrated that hedgerows can sequester between 15-40kg of CO₂e per meter squared¹²; and there are suitable sites for the creation/restoration of at least 800m of hedgerow on GHPC land (around the Millennium Wood, the Allotments, Miss Cross Field and the Recreation Ground). A standard hedgerow of this length can sequester as much as 42 tonnes CO₂e per year, but if allowed to develop to a thickness of 3.5m (recommended for maximum effectiveness for carbon capture and biodiversity gain), this could rise to as much as 112 tonnes of CO₂e per year. When combined with Actions 1-4, and other measures of natural carbon capture such as grassland management, this would enable GHPC to achieve the target of achieving net zero by 2025¹³.

Phase 1 Implementation Plan

	2022	2023	2024
1 - Switch to 'Green' Energy Provider			
2 - Save Energy			
3 - Divest from Fossil Fuels (achieved)			
4 - Produce Green Energy			
5 - Management of GHPC Land and Verges	Mil. Wood & Verges	Rec.	Miss C. Field & Allot.

A GHPC CO₂e footprint calculation will be performed each year by the Environment rep (using GHPC energy bills and the latest published average values or individual CO₂e footprint calculations for councillors, minus sequestration measures adopted to date) to measure progress against the 2025 goal.

¹¹ <https://www.carbonindependent.org/76.html>

¹² <https://www.cpre.org.uk/resources/hedge-fund-executive-summary/>

¹³ This calculation assumes that Councillors will take no individual action to reduce their own CO₂e footprint between 2022-25 (worst case scenario). Individual action will only improve the situation and make the achievement of the 2025 goal simpler.

GHPC Climate Action Plan: Phase 2 - Influence and Collaborate

Objective: To achieve net zero CO₂e emissions at the territorial level by 2050 in line with legislation.

Taking effective action to reduce the carbon in products produced elsewhere in the UK or abroad is far more challenging than addressing local emissions and is well beyond the powers of GHPC. For this reason GHPC will look to address CO₂e on a Territorial, rather than Consumptive, basis.

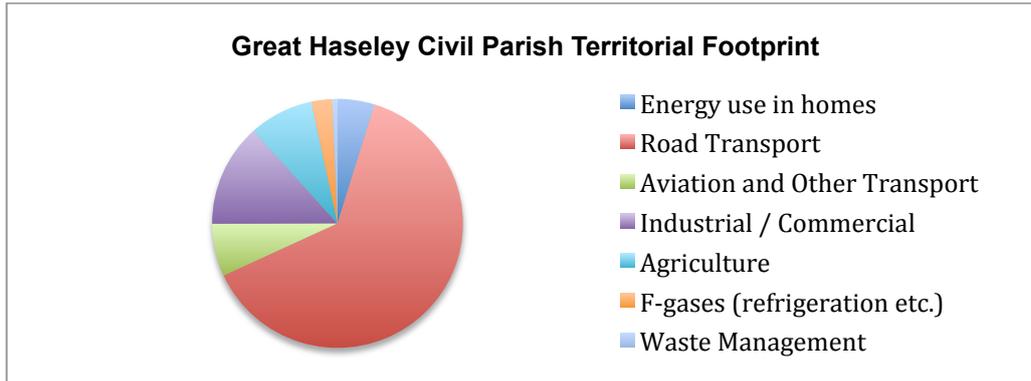
In addition, achieving net zero on any basis by SODC's target of 2030 is not possible with current national initiatives (e.g. decarbonisation of electricity supply or deployment of carbon capture technologies) unless Haseley residents are willing to make investments (e.g. in home energy systems and electric vehicles) and lifestyle changes (such as not flying) well beyond other UK citizens. Adopting a target of 2050, as per national legislation, will allow sufficient time for national initiatives to contribute to the goal.

Great Haseley's Current Carbon Footprint

Great Haseley's total territorial CO₂e footprint today is 25,608 tonnes of CO₂e per year¹⁴. This footprint can be subdivided into several sub-categories or sectors, as shown in the Table below.

Great Haseley Civil Parish Territorial Footprint (All figures in t CO₂e pa)			
Energy use in homes		1,419	5%
Road Transport		18,824	69%
Aviation and Other Transport		2,028	7%
Industrial / Commercial		3,968	14%
Agriculture		2,476	9%
F-gases (refrigeration etc.)		794	3%
Waste Management		205	<1%
Current Land use sequestration	-	3,305	-11%
	Total	25,608	

¹⁴ Calculated using IMPACT (impact-tool.org.uk from University of Exeter) for territorial footprint estimates; a "worst case" approach has been used to derive a detailed territorial footprint. The Oxfordshire Treescape Project 'Opportunity Report' for Great Haseley parish was used to give an estimate of current land use sequestration levels.



It should be noted that no Carbon Footprint estimate is completely accurate, no matter how detailed the calculation, but they provide a sufficient framework to illustrate how Great Haseley's CO₂e footprint and target measures appropriately to reduce it. It should also be noted that the 'territorial' data includes emissions from the presence of roads or other transport systems, or local agriculture and manufacturing, whether or not local people were travelling on that road or use those products and services.

Most of our current footprint is attributable to energy usage in one form or another. Most of that energy comes from fossil fuels (gas, oil, petrol and coal). Achieving net zero is not possible without doing less of these things or changing the source of the energy away from fossil fuels - known as decarbonising.

Actions by Sector

1. Domestic - emissions from heating, lighting and operating resident's homes

To achieve zero emissions in this sector will require some mix of:

- Retrofitting all fossil fuel powered homes (70% of households) with electricity based systems (e.g. Air Source (ASHP), Ground source Heat Pumps (GSHP) or Thermal Batteries)
- Improving insulation in all existing homes
- Ensuring all new homes are built to high efficiency standards with zero carbon heating systems.
- Having a zero carbon electricity supply (see below)

Installation of gas boilers in new homes has been banned from 2025 and it is expected that the sale of new gas boilers will be banned from 2035.

There are government incentives to install heat pumps and to insulate your home. These are likely to increase over time. Sale of homes with a rating worse than "EPC-C" is expected to be made illegal.

Actions:

- a) GHPC will support the highest insulation standards and non-carbon energy sources in all new builds and building modifications where such action does not detract from Local Character.

- b) GHPC will keep informed of county and district policy/initiatives regarding home insulation and energy efficiency, engaging with OCC, SODC and the local community where appropriate.

Insulating a home can cut energy use, and hence emissions, by up to 0.5 tCO₂e pa per house. The plan requires 60 houses per year to be installing significant insulation by 2030. Converting a house heated by fossil fuels to ASHP cuts emissions by approximately 4 tCO₂e pa. If fully implemented these could reduce emissions for this sector by up to 5%. Progress beyond that relies on homes retrofitting heat pumps which will require government incentives and/or proscriptioin. The plan requires 50 fossil fuel houses to convert to ASHP each year by 2030.

2. Road Transport - emissions from driving domestic cars and vans and represents 69% of our footprint.

As has already been stated, much of this can be attributed to the presence of main roads running through the Parish and, as such, GHPC have little power to regulate this source of emissions and must rely on national incentive schemes and regulation to make this happen (sale of new petrol / diesel cars has been banned from 2030).

However, some progress can be made within the Parish itself through some combination of:

- Reducing car use
- Replacing petrol / diesel vehicles with Petrol Hybrid Electric Vehicles (PHEV). Note that PHEVs reduce emissions by 2/3rds compared to petrol/diesel.
- Replacing petrol / diesel vehicles with Battery Electric Vehicles (BEV) AND having a zero carbon electricity supply to charge them

It is estimated that the cost of buying BEVs will reach parity with petrol / diesel by 2026. The running costs of BEVs is less per mile creating an incentive to switch. Concerns about switching include range, performance and availability of recharge points.

Actions:

- a) GHPC will encourage early switching to BEVs by supporting opportunities for/increasing access to EV charging either at their own premises, on-street parking locations or at “park and charge” locations for overnight recharging
- b) GHPC will keep informed of county and district policy/initiatives regarding car sharing/hire schemes, re-regulating bus services, constraining road space and improving non-car access/connectivity to facilities in the local area, engaging with OCC, SODC and the local community where appropriate.

Replacing one petrol / diesel car with a BEV reduces emissions by 1.1 tCO₂e pa. Once all vehicles in the parish are BEVs and electricity is decarbonised, this will remove the Parish contribution to this sector entirely.

3. Aviation & Other Transport - journeys by residents using trains, planes or ships

While train routes are increasingly electrified there are no zero carbon alternatives for most flights or ship journeys.

GHPC have few levers to encourage reduction in travel or to encourage switching to alternative means and no action is proposed.

4. Industrial & Commercial - emissions from the non-residential sector: shops, offices and factories in the parish

The challenges are likely to be similar to that for domestic premises and the actions are the same for that sector – working with the local groups and other partners to promote a move away from fossil fuel energy sources

5. Agriculture & Land Use - emissions from farming and other land use activities

This sector accounts for around 9% of the Parish's CO₂e emissions. However, agriculture and land use also has the potential to sequester (the capture of carbon in growing things and soils) a huge amount of carbon and could go a long way to reducing the Parish CO₂e footprint. The Great Haseley Treescape Report estimates that current land use practices help sequester around 3,305 tCO₂e per year (offsetting 11% of our emissions), but that this could rise to as much as 18,083 tCO₂e per year (offsetting 63% of our current emissions) if all opportunities suggested in the report were adopted. However, this would require Haseley landowners to make investments, lifestyle and land-use changes well beyond that which can be reasonably expected.

Adopting the 2050 targets set out by Oxfordshire County Council may prove to be a more realistic objective. These targets, and the increases required in the Parish in order to meet them, are shown in the table below:

<u>Treescape</u>	<u>Existing coverage</u>	<u>OCC target</u>	<u>Increase required</u>
Woodland/Species-rich grassland	11% of site area	26% of site area	260 ha
Hedgerows	31% of all field boundaries	80% of all field boundaries	90 km
Agroforestry	0% of site area	20% of site area	352 ha

If these targets can be achieved, it will still result in the sequestering of at least 7,482 tCO₂e per year (offsetting 26% of our current emissions) - a significant step to achieving the goal of net zero by 2050.

Actions:

- a) GHPC will engage and work with landowners and the farming community to develop a long-term Nature Recovery and Land Management plan, using the Great Haseley Treescapes Report as a base for discussions. This can feed in to the county-wide Local Nature Recovery Strategy.
- b) GHPC will work to designate Local Green Spaces and protect locally designated nature sites through its developing Neighbourhood Priority Statement and eventual Neighbourhood Plan.

6. Waste and F-Gasses

These smaller footprints will mostly be dealt with by government (F-Gas) and SODC (Waste) interventions. However, there are still some actions that can be taken at the Parish level to compliment National and District schemes.

Actions:

- a) GHPC will keep informed of county and district policy/initiatives to reduce the waste generated by the Parish, engaging with OCC, SODC and the local community where appropriate.
- b) GHPC will work with local groups and partners to promote community sharing and reuse.

7. Decarbonisation of Electricity

The big wins in lowering emissions are by replacing fossil fuels as the energy source for houses, firms and vehicles with electricity. This only reduces the carbon emissions to zero if the electricity used is itself not generated from fossil fuels.

To decarbonise the electricity consumed in Haseley requires some mix of the following:

- Changing the electricity suppliers used by residents to green energy suppliers.
- Increasing the amount of renewable energy in the UK mix nationally as well as locally
- Replacing gas as the “baseload” fuel source at times when there is little wind and sun

Actions:

- a) GHPC will support planning applications for the development of domestic renewable energy and energy storage systems in situations where it does not affect Local Character or deviate from national/county/district policy/frameworks.
- b) GHPC will require the integration of renewable energy (such as solar thermal, PV or heat pumps) as far as possible within new residential and commercial developments.
- c) GHPC will work with local groups and partners to investigate establishing a zero carbon Community Energy project in the parish, including the possibility of bringing together groups of people for bulk purchases.
- d) GHPC will keep informed of county and district policy/initiatives regarding relevant housing energy efficiency schemes (including grants), engaging with OCC, SODC and the local community where appropriate.

8. Next Steps

Achieving this ambitious plan will require concerted action across many years.

Actions:

- a) GHPC will include at least one project from this plan on the major projects shortlist each year.
- b) GHPC will advertise this plan to the community and report annually on progress toward it.
- c) GHPC will review this plan every two years to ensure it is on track to achieve the target and to consider additional and emerging solutions.
- d) GHPC will require councillors to identify whether planning proposals and recommendations adhere to Parish Documentation on climate, nature recovery and development policies (e.g. Climate Action Plan and Neighbourhood Priority Statement).
- e) When it is developed, the Neighbourhood Plan will include policies and recommendations consistent with this strategy, including but not limited to; the deployment of renewable energy, waste conversion (e.g. anaerobic convertors or

waste incineration) and district heating (e.g. GSHP) within the parish; the requirement for new houses to be energy efficient, environmentally friendly and located (as far as possible) close to amenities and transport links; suitable sites for treescaping and nature restoration; the provision of safe walking and cycling routes to local facilities.