

1

## Summary

In 2022 and 2023 Humshaugh Net Zero (HNZ) has built on the foundations of work done since 2020.

- A second Rural Community Energy Fund (RCEF) grant was obtained to follow up on the solar farm concept identified previously.
- A grant from the National Innovation Centre for Rural Enterprise (NICRE) was used to develop our expertise in home energy efficiency.
- The solar farm concept flourished during this period and grew to become a 1 MW solar farm ready for funding and building:
  - An agreement to lease the land was reached with the landowner.
  - Outline designs were produced.
  - Planning consent was applied for and granted.
  - Contractors were approached for quotes to build it.
  - A grid connection offer was sought and received.
  - Initial discussions have been held with grant and funding bodies.
- Home energy surveys were carried out in domestic properties in the Parish.
- We engaged with a number of other groups in the Northeast who wanted to follow our lead to help their communities to move to Net Zero.
- We continued to engage locally with Northumberland County Council, the Rural Design Centre (RDC) and Community Action Northumberland (CAN), holding joint public meetings on Net Zero topics, and nationally with Community Energy England (CEE) and Regen.
- As part of the Parish COVID pandemic recovery, we hosted coffee mornings on energy topics.
- Our series of public meetings to keep everyone up to date with Net Zero concepts and HNZ activities, supplemented by newsletters and social media, continued throughout this period.

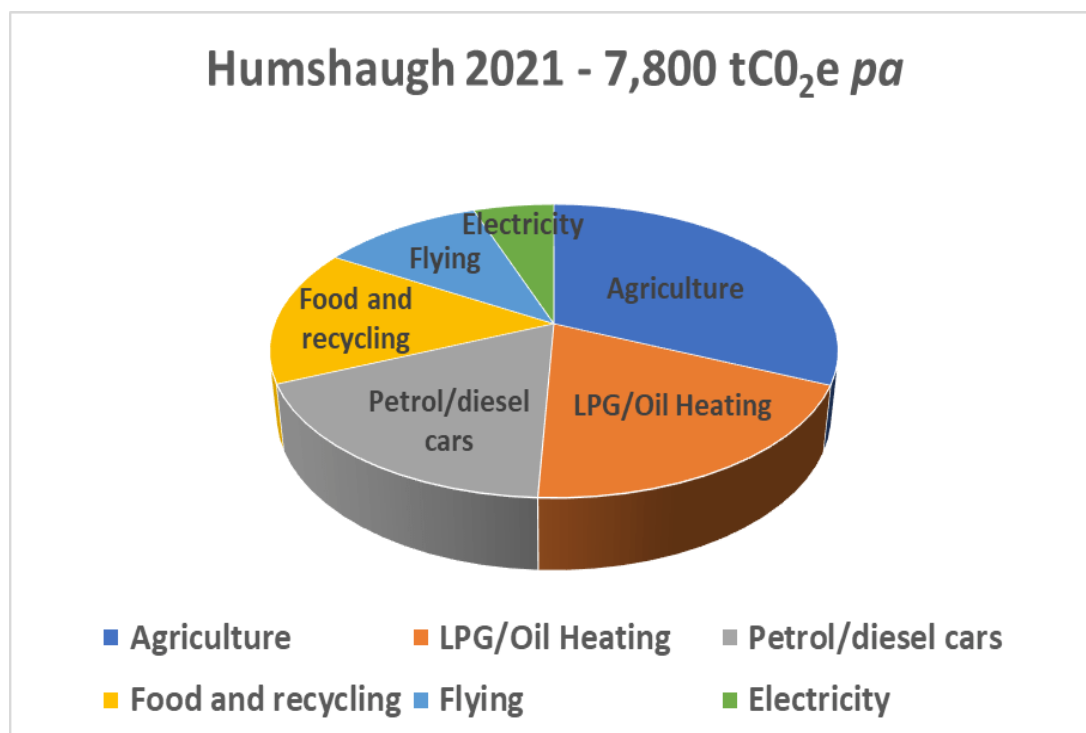
## Humshaugh Net Zero

In 2020 Humshaugh Net Zero (HNZ) was established. HNZ is a *Community Interest Company* set up with support from Humshaugh Community Ventures Ltd. HNZ will evaluate how Humshaugh could achieve net zero carbon emissions by 2030 and develop and implement plans for so doing. HNZ membership is free and open to all residents of the Parish of Humshaugh.

## Our Carbon Emissions

As a reminder of the scale of the challenge we face here is our carbon footprint as determined by our surveys is shown overleaf. *Humshaugh household and agricultural emissions are 7,800 tonnes of CO<sub>2</sub>e per annum.* Humshaugh Parish has an area of 1,200 ha and, in 2021, had a population of 713 living in 337 households.

A household carbon emissions survey was undertaken by HNZ in 2020, in association with Newcastle University, which estimated total Parish emissions at 5,300 tonnes of CO<sub>2</sub> per annum. The independent Impact Tool (<https://impact-tool.org.uk/>) estimates that total Humshaugh Parish emissions are 7,100 tonnes CO<sub>2</sub>e *per annum*; however, this includes 2,500 tonnes CO<sub>2</sub>e *per annum* from agriculture which was not independently estimated in the HNZ survey. Removing the contribution due to agriculture, which is comprised of greenhouse gas emissions from agricultural fuel, livestock and arable farming, the Impact Tool estimate of Parish emissions drops to 4,600 tonnes CO<sub>2</sub>e *per annum*. The latter value is not inconsistent with the value of 5,300 tonnes of CO<sub>2</sub> per annum derived from the HNZ survey. See Figure 1 for the overall 2021 summary.



## Reducing the Carbon Emissions of Humshaugh

### *Carbon Dioxide Sequestration by Woodland*

During this period many trees have been planted in the Parish by landowners. HNZ has not been involved but is very supportive. Ovington Parish has been developing and implementing an ambitious, well organised, community tree planting scheme. Ovington Parish is similar to Humshaugh Parish; mainly agricultural land bordering the Tyne. HNZ representatives have visited on several occasions to gather details and start to formulate a plan of action on tree planting for Humshaugh. This was described at one of our evening sessions.

### *Household Carbon Dioxide Emissions*

HNZ commissioned a number of Energy Performance Certificate (EPC) surveys by one surveyor on representative buildings in the Parish to see if existing surveys carried out by

different surveyors at different times, usually in connection with house sales, were consistent and useful. The results were consistent, although the value of the advice in the EPC was limited.

HNZ arranged a small training course on domestic energy efficiency to establish a first level of skill in this area. Using this training and an infra-red camera, both funded from a £5,000 grant from NICRE, simple domestic energy surveys were carried out in the village.

At a coffee morning and at evening meetings, CAN advisors have offered group and individual level advice on reducing domestic energy consumption and importantly, during the cost-of-living crisis, ways to reduce energy bills.

### *Carbon Dioxide Emissions by Non-Residential Properties*

HNZ investigated this through two surveys; one of commercial properties and the other of farms. Both were difficult to complete, but approximate numbers were eventually obtained. The commercial sector in the Parish contributes about 400 tonnes of CO<sub>2</sub>e a year. Emissions associated with agriculture in the Parish were estimated using national databases rather than detailed surveys and were estimated to be 2090 tonnes CO<sub>2</sub>e a year. Much of the latter is predicted to come from emissions associated with nitrogen in fertiliser and manure.

Over the past two years the importance of methane and nitrous oxide as greenhouse gases in addition to carbon dioxide has received more attention, and the Government now includes these two gasses in its county-by-county emissions tables. Emission of methane and nitrous oxide in this county mainly come from agriculture and NCC has been working on plans to address these.

Greenhouse gas emissions from farming are a very emotive subject and HNZ does not want to inflame the debate. We all need farm produce and the more locally sourced the better. Over the past two years we have held discussions with NCC and the National Farmers Union, and have attended a workshop organised by the Rural Design Centre to understand the issues. An HNZ farm energy survey was conducted by a student from Newcastle University which provided preliminary results. HNZ continues to fact find and may support further studies in this area in cooperation with and for the benefit of the local farming community.

HNZ supports the NCC position of aligning the Net Zero Targets for agricultural greenhouse gas emissions with those of the NFU to achieve Net Zero by 2040.

### *Low Carbon Electricity*

A large part of HNZ's efforts in 2023 into 2024 have been focussed on developing a solar farm on land near Lincoln Hill. The one-hectare site is on poor agricultural land. The solar farm will have a capacity of 1 MW and on average provide half the electricity for the Parish. The landowner has been very helpful and a legal agreement to lease the land has been established.

A planning consultant, The Energy Workshop, was engaged to prepare a pre-planning

report for submission to NCC to ensure that the full planning application would address all relevant aspects. Once the response was reviewed a full planning application was prepared and submitted. NCC eventually validated this and there was a period of consultation. No objections were received during this period, only support! However, after the consultation period, the NCC Archaeology Department and Highways raised a series of issues over a six-month period. All these were addressed promptly, but did require additional visual impact and transport surveys, which had not been requested in the response to the pre-planning application report. In July 2023 the project was granted planning consent. HNZ is very grateful to RCEF for proving the funding of £67,000 for the development of this project.

The solar farm requires a grid connection to be able to export the electricity generated. Connections in our area are provided by Northern Powergrid. HNZ engaged with Northern Powergrid (NP) from 2021 to establish an economically and technically viable way to connect to the solar farm, submitting several applications. NP like the rest of the UK electricity industry is grappling with how to address Net Zero, and its policies and procedures have been evolving in the years since 2021. This has resulted in widely different responses to our requests for connections. We have engaged with NP's connection department and senior NP staff. Eventually, in November 2023, a sensible solution was agreed with a connection point just south of the solar farm location on the main 20,000 volt line from Fourstones substation which feeds the village. NP have aspirations to encourage community generation and are developing plans which could include using the Humshaugh network to trial battery storage and load management systems. We are continuing to engage with NP on a wide range of issues affecting the electricity supply to the village.



HNZ was set up as a campaigning organisation, not an electricity generator. HNZ has thus created a separate organisation, Humshaugh Community Solar Limited (HCS), a Community Benefit Society, to own and operate the solar farm. Any surplus income from the solar farm will go into a community benefit fund to be spent on energy related activities in the local area.

HCS has sought to investigate the possibility of grants and loans from the various public and commercial organisations including the North of Tyne Green New Deal Fund, NCC, Octopus Energy, Ovo and Younity. The results were encouraging, and discussions will

continue in 2024. A community share offer is being investigated and how this will be managed is described in the Rules of HCS.

HCS would like to sell the electricity locally. This could be done at a price which would provide a higher price than available to the solar farm on the commercial market, but at a lower price to the consumer than they are paying at present; a concept generally agreed as a good one. However, regulations currently make this virtually impossible to implement. National organisations, such as Community Energy England and Regen, have lobbied for changes in the regulations. HNZ has engaged with and supported these organisations in this endeavour. The Conservative Government has blocked the Local Energy Bill and refused to add clauses to other energy legislation, which aimed to enable local trading. HNZ lobbied Mr Opperman, our MP, to support the changes but he voted with the Government to oppose the Local Energy Bill.

### ***Low Carbon Heating***

Domestic heating is a major emitter of carbon dioxide, and we are keen to encourage residents to use low carbon alternatives. The Government and NCC have offered grants, which we have publicised, and we have offered to put residents in touch with owners of existing systems. We are concerned at the lack of heat pump installers and training for existing heating engineers, and have conveyed our concern to NCC and the Government.

Several heat pumps have been installed in the village including the school. We are interested in the performance of these installations and talking to owners so that others can learn from their experience as it is likely more will be installed soon. CAN is able to advise on the best way to set up these installations which is not the same as for conventional oil-, gas- and coal-based systems.

### ***Transport-related Carbon Dioxide Emissions***

Car use is responsible for 26% of Humshaugh household carbon dioxide emissions (1,400 tCO<sub>2</sub>/year) and whilst walking, cycling and public transport use are to be encouraged, in a rural area such as Humshaugh most households will depend on private cars for the foreseeable future.

The electric vehicle charge point at the village hall has been decommissioned. NCC have installed new charge points opposite the Doctors' Surgery in the village. It had been hoped that these would be high power ones, but there is no three-phase electricity supply nearby to facilitate this and they are the slow 7 kW versions. HNZ has raised the lack of three phase supplies in rural areas with NP and pointed out that this is restricting the adoption of electric vehicles, as fast chargers would be of use to those residents with no off-street parking, and tourists.

HNZ focussed an evening meeting on electric cars and 12 electric cars plus one electric van were on show. Having local electric vehicle owners present was very useful in demonstrating the benefits of electric vehicle use, in addition to the carbon savings their use achieves.

The number of electric cars in the Parish has been steadily rising, as it is throughout the

country.

We have been unsuccessful several times in bidding to set up an electric bike trial scheme in the village. Our idea is to have two ebikes anyone can use to see what they are like. There is a quiet backroad *via* Warden to Hexham six miles away, easily possible on an ebike. We will keep trying to find funding.

### ***Food and Waste***

These are very difficult but important areas to address.

Food production emissions are more dependent on multinational farming companies, big supermarket chains, UK and international government actions than on local communities. HNZ has not focussed on this area, and it would be beneficial to set up a group to work on this.

On waste, HNZ has tried to engage with NCC to find out what happens to our waste. Many calls and emails have resulted in nothing. Meetings and visits to waste processing sites have been cancelled. Whether this is due to excessive workload or a reluctance to engage with the public on this sensitive area is unclear. We will continue to try to engage and lobby for improved recycling and reuse facilities in the Parish.

One HNZ evening meeting provided information on local recycling and reuse opportunities from a local expert.

## **Engagement with the Community and Stakeholders**

HNZ has held coffee mornings and evening meetings over the past two years, covering topics such as energy efficiency, electric vehicles, waste reduction, as well as regular updates on HNZ activities.

We have engaged with the NCC Climate Action Team on numerous occasions in this period and NCC have recommended that other groups starting to develop plans to achieve Net Zero contact us to find out how we are organised and what we have done. We are keen to do this provided it does not detract from our work to reduce the emissions from Humshaugh. We have met or given talks to representatives from Wall, Acomb, Fourstones, Felton, Holy Island, Stocksfield, Wylam, Haltwhistle and Hexham.

HNZ has had regular meetings with the Parish Council and our local County Councillor Nick Morphet to keep them abreast with our activities and seek their support where appropriate.

## **Objectives for 2024**

The focus will be on financing and building the solar farm at Lincoln Hill. This will make a significant impact on reducing our emissions but by no means goes far enough. The development of this project has been protracted, partly because it is a pioneering one in



this area, hopefully our next project and those of other community groups can learn from this and be more timely in the future.

We will document what we have done and continue to lobby for changes to legislation and policies to make it easier to achieve Net Zero.

In 2024/2025 we plan to:

- Build the Humshaugh community solar farm through HCS
- Progress our tree planting plans
- Publicise any grants for low carbon technologies
- Engage with the farming community and their advisors to understand emissions from this sector and how they can realistically be reduced
- Hold meetings on subjects which inform people how to reduce their emissions
- Engage with Northern Powergrid to make the electricity network in the Parish fit for the low carbon technologies needed to achieve Net Zero by 2030
- Look for other opportunities to generate more low carbon electricity locally
- Engage with NCC on waste reduction
- Address the issue of reducing emissions associated with our food consumption

## Acknowledgements

Humshaugh Net Zero are extremely grateful for grant funding awarded by Rural Community Energy Fund (RCEF), which is managed by the Northeast Yorkshire and Humber Energy Hub and to the National Innovation Centre for Rural Enterprise. HNZ are also grateful to the Climate Action Team at Northumberland County Council, Community Action Northumberland, the Rural Design Centre and colleagues at Newcastle University for their support.

## Contacts

Email - [action@humshaughnetzero.org](mailto:action@humshaughnetzero.org)

Website - <https://www.humshaughnetzero.org/>