

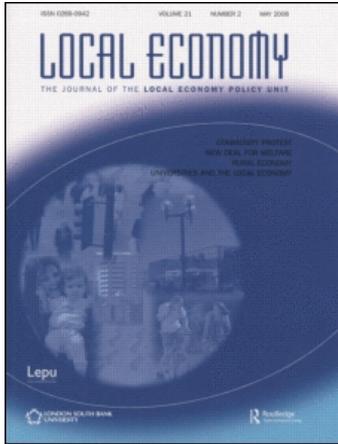
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Publisher Routledge

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Local Economy

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713705644>

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To cite this Article Alexander, Roy , Hope, Max and Degg, Martin (2007) 'Mainstreaming Sustainable Development-A Case Study: Ashton Hayes is going Carbon Neutral', *Local Economy*, 22: 1, 62 – 74

To link to this Article: DOI: 10.1080/02690940701195123

URL: <http://dx.doi.org/10.1080/02690940701195123>

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FEATURES

Mainstreaming Sustainable Development – A Case Study: Ashton Hayes is going Carbon Neutral

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ABSTRACT The Parish Council of Ashton Hayes in Cheshire voted in November 2005 to try to become England's first carbon neutral village. This grass roots project has grown rapidly in its first year and has engaged a large proportion of village residents. The project has produced a number of impacts on the community and the wider region and these are being evaluated in terms of their environmental, economic and social dimensions. This paper describes the process of project development and implementation and draws some general conclusions from this experience before going on to consider some of the findings of the initial evaluation of the project. We conclude by suggesting that Ashton Hayes provides an interesting case study of a community-led attempt to bring sustainable development into the mainstream and that the challenge remains, as with many community-led initiatives, of how to translate the considerable early momentum of the project into sustainable forms of participation and behaviour.

Introduction

In 2006, 'carbon neutral' was the New Oxford American Dictionary's 'Word of the Year'. As defined by this dictionary, being carbon neutral involves,

calculating your total climate damaging carbon emissions, reducing them where possible, and then balancing your remaining emissions, often by purchasing a carbon offset: paying to plant new trees or investing in 'green' technologies such as solar and wind power. (*The New Oxford American Dictionary*, 2006)

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That it was Word of the Year for 2006 is an indication of the degree to which carbon neutrality has been vigorously embraced by governments, businesses, individuals and the world of celebrity. Thus, for example, the carbon cost of the production of Coldplay's album 'A Rush of Blood to the Head' was offset against 10,000 Mango trees in India; claims were made that the 2006 World Cup was the first one to be carbon neutral; and the UK government purchased offsets for the air travel required for the 31st G8 Summit in Edinburgh in 2005.

At the same time, an increasing number of commercial and non-commercial carbon offset companies now exists to provide advice and tools to individuals and organisations on how to reduce their carbon emissions. There is a developing multi-billion dollar market in offset services, which the World Bank estimated in 2005 to be worth US\$11 billion and there is a rush of initiatives as cities (e.g. Newcastle), corporations (e.g. BP), government departments and local authorities attempt to go carbon neutral. In the UK, 'going carbon neutral' has become embedded in the broader effort by government to encourage corporate responsibility and the sustainability and self-sufficiency of communities (Raco, 2003).

These developments are not without their problems or critics (Ma'anit, 2006). Doubts have been raised about the reliability of the calculations involved in planting trees to offset the impacts of carbon emissions. High profile examples have been given of instances where tree planting has impacted negatively on the livelihoods of the indigenous populations of the plantation areas. It has been suggested that being able to offset our emissions allows those in the privileged West to go on living unsustainable lifestyles rather than changing them in some more fundamental sense (Monbiot, 2006). Finally, the 'Third Way' agenda of creating corporate responsibility and sustainable communities, to which carbon neutrality is sometimes linked, has been criticised for being strong on rhetoric and failing to deliver real accountability, empowerment and participation (Raco, 2003).

Despite these criticisms, others continue to suggest that, like the related notion of 'ecological foot-printing', the concept of 'going carbon neutral' is a valuable tool that helps us visualise the relationship between global warming and our own actions (Chambers *et al.*, 2000). The concept is relatively inexpensive to use and can act as a stimulant to learn more about global warming and become involved in other ways. In these terms the popularity of the concept is a reflection of a tangible 'mainstreaming' of 'green thinking' which should be encouraged. (The Carbon Neutral Company, 2006).

It is in this context that, in November 2005, the Parish Council of Ashton Hayes in Cheshire voted to try to become England's first carbon neutral village, setting in train a community project that has grown rapidly and produced a variety of spin-offs for parish residents and the local economy alike. The key features of the development and implementation of this project are outlined below and a number of general lessons that can be

learned from this process are identified. The paper then goes on to give some consideration to the results of an evaluation of the initial impact of the initiative.

Project Development and Implementation

The idea of encouraging the village of Ashton Hayes to attempt to go carbon neutral was developed by village resident Garry Charnock. Having discussed its feasibility with Dr Roy Alexander, who agreed to seek the support of the University of Chester, he took a proposal to Ashton Hayes Parish Council in November 2005. The Parish Council voted to support the proposal on the condition that Garry fill a vacancy by becoming a co-opted member, and that an event be held to put the proposal before village residents. This event became the formal launch of the project on 26 January, 2006. The lead-up to the launch was carefully planned with staged awareness-raising by means of newsletters, signs and banners, and press releases. Support was obtained from local businesses to sponsor banners, display boards, and English sparkling wine – arguably one of the benefits to the UK of global warming. The result was a high profile event that was covered by local press, regional television and the BBC World Service. This provided considerable ‘free’ exposure for the sponsors (Figure 1).

The launch event focused on setting the context for the project, providing practical advice on energy saving measures and outlining the planned steps in the process of attempting to become carbon neutral. Context was set at the national, regional and local levels by means of a short DVD film, *Tomorrow's Climate Today's Challenge* (DEFRA, 2005), and speakers



Figure 1. A large number of businesses and organisations support the project and business donations have exceeded £13,000

from the County, City and Parish councils. Practical advice was dispensed by means of an exhibition featuring stalls from both the public (Chester City Council, EPPlus) and private (SolarTwin, RSK ENSR, etc) sectors. An outline of the planned steps was presented by Roy Alexander who confirmed that the University of Chester would make a five-year commitment to supporting the project. He explained the information that would be required in order to calculate a carbon budget and the steps by which this would be gathered, focusing on the survey of households to be carried out by a group of students from the University of Chester. Such was the popularity of the event that the presentations had to be repeated.

Following the successful launch it was critical to maintain impetus and this was achieved through the circulation of newsletters and regular updates to the website. Shortly afterwards, the project organizers, Garry Charnock and Roy Alexander, made a successful application to DEFRA's Climate Challenge Fund to support communication to a wider audience. This resulted in an award of £26,500 over two years, bringing total project revenues to more than £37,000 within six months of inception and a further considerable sum of 'in-kind' support from businesses and the University of Chester. Thus, at an early stage, strong synergies were developed with local businesses who saw association with this community-led, topical and 'worthy' cause as an opportunity to fulfil corporate social responsibility obligations and expectations, at the same time as gaining 'free' media exposure. The project leaders have responded positively to invitations to present the project at many local, regional and national events (now an obligation of the DEFRA award) and there has been continuing media interest, resulting in significant exposure of corporate logos.

At this stage, the project has considerable momentum. The anniversary of the launch was celebrated with an event in the primary school in January 2007, at which a new video about the project, produced as part of the DEFRA Climate Challenge activities, was premiered. In April 2007 the project will convene the first national grass roots conference (again, sponsored by the DEFRA Climate Challenge fund) for UK communities on the topic of going carbon neutral. The conference will be held at the University of Chester and will be followed by a visit to the village to see examples of actions along a 'village trail' and to attend a party. The event is coordinated entirely by project volunteers and involves input from a large number of residents who are all keen to demonstrate what has been achieved and to play host to delegates from the across the country.

Reflecting upon the reasons for the successful implementation of this project, five things seemed central. First, the project was community led, both in the initiation of the idea and the high degree of community involvement as this idea began to take form in practice. Second, considerable effort was made after the initial launch of the scheme, (media coverage, the development of the website, www.goingcarbonneutral.co.uk, etc) to maintain the project's early momentum. Third, the initiative was driven from the start by a diverse multi-agency partnership of villagers, business, The University of Chester and local government.

Fourth, the participation of the local primary school ensured considerable interest among local children and, through them, their parents and wider family members. Finally, the key role a small number of highly motivated individuals played in driving the project forward should not be underestimated and this is a key issue in terms of the future sustainability of the project.

Evaluation

The impacts of the Ashton Hayes project are the focus of a four-year evaluation that begins in the summer of 2007. This will consist of two parts: a quantitative study of the actions taken by residents since May 2006 and of the carbon reductions achieved through the implementation of these actions, and a qualitative study of participation, which will aim to assess the degree to which the project has diffused through the community and the barriers that remain.

In developing this evaluation methodology we have attempted to locate the concept of carbon neutrality within the wider notion of sustainable development within which it is embedded.

Two things are clear from the literature on sustainable development: it is multi-dimensional and it has considerable moral and ethical implications.

Thus, Maxwell & Cannell (2000) define sustainable development as where 'a balance is struck between the achievement of environmental and social objectives, and the drive for wealth creation and economic competitiveness'. This definition emphasizes both the connections between things (e.g. between our actions and the fortunes of other people, organisms, ecosystems etc) and the need to find a balance between ecological, economic and social concerns. More vividly, O'Riordan (2000) defines sustainable development as 'the bonding of people to the planet in a placenta of care, equity, justice and progress'. This definition brings out the moral and ethical force of the concept and emphasizes the right of other people (in the present and future), and organisms, to a decent life within the limits of available resources.

Informed by these ideas, the evaluation of the Ashton Hayes project is being pursued along three dimensions; its environmental impacts, its economic impacts and its social impacts. Within the latter we are seeking to explore both the degree and nature of ongoing community engagement with the project as well as equality of participation and benefits. This evaluation is at an early stage but it is already possible to make a number of useful points.

Environmental Impacts

Carbon neutrality, by definition, is concerned with measuring the environmental impact of human actions, and over time we hope to be

able to evaluate clearly the extent to which the Ashton Hayes project has reduced these impacts.

To this end, in spring of 2006, baseline surveys were initiated to measure the carbon footprint of the village. In consultation with the CRed team at the University of East Anglia (www.cred-uk.org) and using a variety of web sources (Energy Saving Trust, www.est.org.uk, DEFRA, www.defra.gov.uk/environment/climatechange/index.htm) a survey instrument was developed that contained questions on age and structure of property, insulation characteristics, household energy use, travel mode and transport use. The survey was administered by group of level 2 (second year) undergraduates from the University of Chester as part of a Work-Based Learning module. The students worked for Ashton Hayes Parish Council under the supervision of Garry Charnock and Roy Alexander and were provided with a local base in the village doctors' surgery. The first phase of the survey was conducted face-to-face and then questionnaires were posted through the letterboxes of houses where no contact had been made, with a request that they be returned to the local base. The two methods together yielded 167 completed questionnaires representing some 45 percent of village households.

Analysis of the results revealed that 95 percent of households surveyed had less than the Energy Saving Trust's recommended thickness of loft insulation (270 mm) and more than 75 per cent used a car on a daily basis, the most common situation in the village being a household with two residents and two cars. The data collected were also used to calculate a carbon footprint for each household by means of a bespoke carbon calculator (developed using standard information sources). The results (Figure 2) show a wide variation of values for detached houses but a more consistent range for other house types. Average values per house type were multiplied by the number of houses of each type within the village, to calculate the total carbon footprint for the village; a figure of 4766 tonnes per annum (Table 1).

The information gathered from each household was used to compile a bespoke table of recommended actions by which each could reduce its carbon footprint. These were categorized into short term/low cost, medium term/medium cost and long term/high cost options and were cross-referenced to further sources of information. The tables, together with the individual household carbon footprint and a letter explaining the overall outcomes of the survey, formed the feedback, which was delivered to each participating household within two months of survey completion.

Thus, an initial effort has been made to measure the village's domestic carbon footprint, and the steps by which this can be reduced have been identified and disseminated. The next task is to begin to evaluate, in the summer of 2007, the extent to which villagers have acted upon these recommendations.

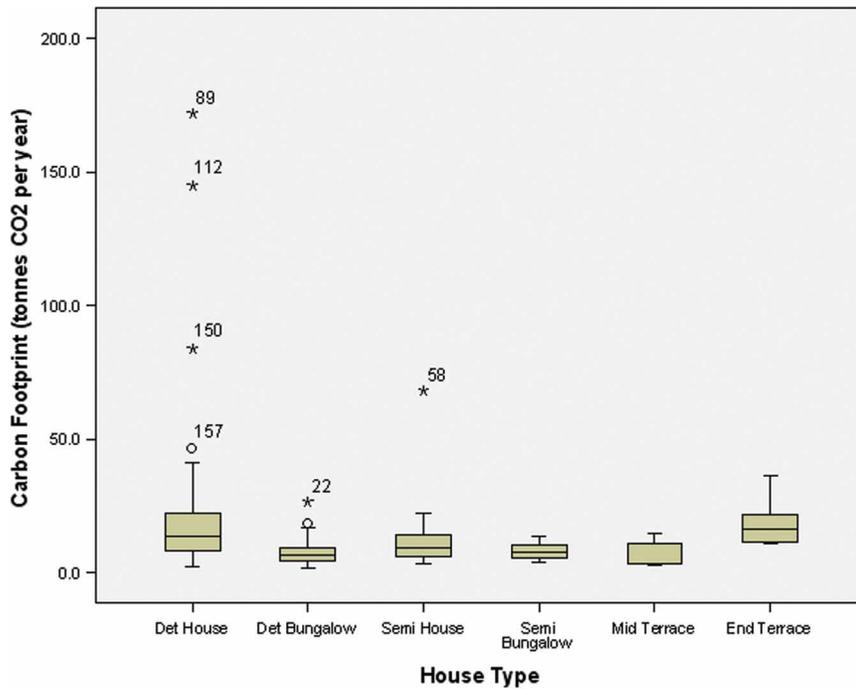


Figure 2. Box plot showing carbon footprint by house type for Ashton Hayes. Numbers within diagram are house reference codes

Table 1. Average Carbon footprint (tonnes CO₂/year) by house type and total domestic carbon footprint for the village of Ashton Hayes, Cheshire

House Type	Average Carbon Footprint	Number of Houses in the Village
Detached Bungalow	7.72	155
Detached House	21.72	108
Semi-Detached House	12.94	38
Semi-Detached Bungalow	8.10	22
End-Terrace House	18.83	22
Mid-Terrace House	7.10	19
Total (tonnes CO₂/year)		4765.76

Economic Impacts

For Pearce (1993) sustainable economic development 'is continuously rising, or at least non-declining, consumption per capita, or GNP, or whatever the agreed indicator of development is'. This level of consumption needs to be achieved in such a way that it does not run down

the overall capital stock of a community, where this capital stock includes 'man-made capital, human capital and natural capital'.

An initial measurement of the economic impact of the Ashton Hayes project has been attempted as part of the household survey and this has been supplemented by a qualitative survey of the business sponsors involved in the initiative. At this initial stage, two types of economic benefits can be identified.

Potential for local suppliers. The results of the household survey show considerable opportunities for village residents to reduce their energy bills both through increased insulation and the installation of low carbon technologies. Feedback letters to households included more than 150 instances where energy saving light bulbs and loft or water pipe insulation were recommended. Moderate to high uptake of such low cost measures might be expected, providing opportunities for local retailers and installers. The uptake of higher cost measures, such as wind turbines and solar thermal panels, is likely to be lower but three households have installed the latter since the project launch and a local installation company is offering free surveys to village households, and a contribution to the project of £100 for every installation.

Direct benefits to sponsoring businesses. In an effort to pursue these issues further, a qualitative survey of four business sponsors was carried out in November 2006. When asked to identify what motivated their sponsorship of the project, all cited community support and their local base (having started in, being based in or having several employees living in, the village) as key factors. They also referred to staff satisfaction, pointing to their employees' concerns about climate change (top of the concerns in an employee poll conducted by one business) along with demonstration of their commitment to customers and stakeholders on tackling the major issue of climate change.

In terms of economic benefits, respondents cited most frequently the contacts that the project has brought. Two local companies have developed close links with one another as a result of their involvement. They recognized the complementarity of expertise in their two organisations and have gained significant financial benefits through partnership. Company A has achieved increased success in winning contracts through competitive tender as a result of Company B supporting their brand and communications. In return, Company B has gained valuable consultancy income. Networking with other companies and also with the University of Chester, has brought additional benefits, which show strong future potential for the development of Knowledge Transfer Partnerships. Another benefit of closer business–university links has involved direct sourcing of graduate employees without the need for agency fees, saving one company an estimated £5000. Respondents also cited the benefits of

their enhanced reputation with existing clients, and straightforward economic gains in terms of reduced energy bills due, for instance, to the installation of low energy bulbs.

The landlord of the village pub (the Golden Lion) has made a strong commitment to the project and has declared his aim to become England's first carbon neutral pub. As a tenant landlord, he sees energy costs as his biggest overhead and puts energy saving as a 'make or break issue' for his and other pubs. Through the project, he has been given free advice on energy saving by architects and Cheshire County Council, and he is working with a local company, EA Technology, to develop the ideas with the assistance of one of the project volunteers. The landlord's declaration to go carbon neutral has resulted in coverage in the *Liverpool Echo* and the *Morning Advertiser* (national pub newspaper) and he reports that more customers and other pubs are noticing him and coming to visit. The pub's owners, Punch Taverns, have written to express support and their press office keeps in regular contact. The Golden Lion has won new catering work for 2007 because of the landlord's support, and assistance in sourcing local produce is being provided along with suggestions on how to attract customers with new menus.

Thus, it is possible to describe a number of the direct economic impacts of the Ashton Hayes project. It is not so easy, however, to be sure that these impacts accrue in a way that is line with sustainable notions of economic development. A fuller evaluation would involve some consideration of the economic multiplier effects set in motion by the project, how these play out in localities outside the immediate geographic boundaries of the community and, ultimately, whether these unfold in sustainable ways. Such an evaluation is beyond the immediate scope of the project but one goal is to calculate the 'ecological footprint' of the village in a more sophisticated manner at some future date (Wackernagel & Rees, 1996).

Social Impacts

Community participation. If a community is to be truly sustainable, socially as well as economically and environmentally, then its members need to be directly involved in making the decisions that shape its future (Dresner, 2002). Thus, consideration of the degree of community participation in this project is an important aspect of the evaluation process. Arnstein (1969) usefully identified eight rungs on her ladder of citizen participation, ranging from manipulation on the bottom rung via placation in the middle through rungs 6, 7 and 8 (partnership, delegated power and citizen control), which amount to 'increasing degrees of decision making clout'. A key question for this evaluation is therefore where on this ladder we should locate the Ashton Hayes project. A full consideration of this issue is beyond the scope of this paper but at this stage a number of useful points can be made.

Even in a village with an already well-developed sense of community, the degree of participation in the project was considerable. The project launch attracted 400 people (around 75 per cent of adults in the village) and 45 per cent of the population of the village participated in the survey.

It is clear that, from the inception of the project, community members have retained considerable control over decision-making and resources. The implementation of the project was driven by residents within the village, and the ongoing running of the initiative operates under the auspices of Ashton Hayes Parish Council. Parish Councils are one of the three tiers of elected local government within the county of Cheshire where Ashton Hayes is located. Cheshire County Council has responsibility for, among other things, education and social services. Six District Councils have responsibility for housing, the collection of the Council Tax and refuse collection and 209 Parish Councils (sometimes called Town Councils) have responsibility for village halls and community services. Ashton Hayes Parish Council is made up of elected councillors who can serve for a maximum of four years before seeking re-election. Only those living or working in Ashton Hayes can stand for election and vote in parish council elections. Thus, while the success of the project has attracted the interest of a range of external agencies the control of the project remains with the community.

There is also evidence that the project has empowered the community in its dealings with various external agencies. Planning permission has been obtained for the installation of a wind turbine and wall-mounted solar thermal panel for the village primary school, both of which were donated and which will give a high-profile to these technologies, possibly leading to greater uptake by householders. In response to lobbying by the project team, Cheshire County Council has earmarked funds to install 400m of footpath, providing safe pedestrian access to the railway station in the next village. The lack of such a facility was identified by a large number of survey respondents as a key obstacle to the increased use of public transport, and thus its provision might be expected to result in increased passenger numbers and hence revenues for the rail operator, as well as further carbon savings for the village.

We would argue that these examples are evidence that the carbon neutral project has enhanced the capacity of the Ashton Hayes community for self-management and self-reliance. Clearly, to be truly sustainable these structures need to have a permanence that allows them to continue into the future, and the extent to which this is the case we hope will be picked up in our follow up evaluation in summer 2007. Early indications are positive, as evidenced by the high response to a recent appeal by the project leaders for volunteers to help with the burgeoning level of activity the project is generating (Figure 3).

Twenty villagers have offered to become members of five working groups set up to deal with the development and day to day running of the initiative. One of these involves the establishment of 'Carbon Clinics',



Figure 3. The rules by which the project operates

where residents can obtain and exchange advice and information on a variety of topics, from switching to a green energy tariff to the pros and cons of installing a condensing boiler. The clinics take place in the convivial surroundings of the village pub or are linked to other social events such as coffee mornings.

Equality of participation and benefits. Finally, central to the idea of a sustainable community is the notion of the equal rights of community members (in the present and the future) to participation in that community. Evidence shows that participation in environmental groups and initiatives is not equally distributed but varies in relation to factors such as socio-economic class, gender and age. Urry (1995), for example, has suggested that 'concern for the environment appears to be most marked amongst those with non-manual occupations, and especially those doing professional-managerial work'. Thus, a consideration of the socio-economic background of those who have participated in the scheme is an important element of the ongoing evaluation of the project.

In an attempt to get an early sense of whether this is borne out in the Ashton Hayes project, we used house price as an indicator of socio-economic status, and found rates of participation in the household survey were highest (55 per cent) in those parts of the village where houses were most expensive, and lowest (36 per cent), although still good, where houses were least expensive.

This is a crude measure of socio-economic class and its relationship with participation but it may nevertheless flag up an important issue that will be explored further in later stages of the evaluation process.

Conclusions

The results of the initial evaluation indicate that the project has been successful in engaging the local community, in generating real and latent economic gains and in establishing the basis for a significant reduction in the environmental footprint of the community, much of which, admittedly, has yet to be realized.

Reflecting on some of the reasons for this initial success it is clear that this was, firstly, because of the hard work of a small number of very committed volunteers who ensured the sponsorship, high media profile and healthy levels of community participation that were a feature of the project's launch and implementation. Recent research has confirmed that this reliance on a small number of multi-tasking individuals is a common feature of community participation at the parish council level. Steel *et al.* (2006) suggest that 'most people are attracted to short-term action based roles rather than sustained participation in neighbourhood governance structures'. Clearly a key challenge for the community of Ashton Hayes remains how to make the transition successfully from the initial excitement of involvement in the project to sustainable forms of participation.

Secondly, it is also clear that the success of the project in part derives from the way its aims have dovetailed with wider political agendas. Third Way politics consistently expresses concern both over climate change and the active role that business and local communities should have in doing something about it. This has been characterized as 'a new localism' in which the 'mobilisation of active communities' is a central element (Raco, 2003). In some ways this project is a good example of the sort of multi-agency partnership between central and local government, business and community that New Labour is trying to encourage (Edwards *et al.*, 2003). This 'responsibilisation' of community is not without its critics, however. Peck & Tickell (2002) suggest it is really about central government adjusting the expectations of communities over what central government can deliver. In effect, government is not responsible for doing something about climate change – you, the community, are. Other critics have suggested that it amounts to communities acting as the 'rowers' (implementing policy) for the 'steerers' (creating policy) of central government, rather than real community empowerment (Crawford, 1998, p. 252).

The long term sustainability of the Ashton Hayes Going Carbon Neutral project will depend, like many community-led initiatives, on whether its aims continue to mesh with those of wider political agendas and, if so, whether these agendas have the will to deliver the resources and opportunities necessary for genuine community engagement.

Acknowledgements

The authors wish to thank Garry Charnock and other members of the Ashton Hayes community for support and assistance in the compilation of this article. We are also grateful to two anonymous referees for helpful comments

and suggestions for additions to the original manuscript and to the University of Chester for its continuing support of the Ashton Hayes Going Carbon Neutral project.

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