

## **Poultry sector should promote its green credentials**

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**Not only does cutting carbon footprints save on energy costs, but it can also be a valuable selling point for eggs and poultry. In the first of a four-part series, Lucy Knowles and Wendy Short kick off with a look at some new research findings**

There has been growing consumer interest in recent months on the [carbon footprint](#) of food production and one egg packer recently took advantage of this by launching a low carbon egg brand, [Respectful Eggs](#).

But not only does it offer a marketing edge, focusing on carbon footprints also helps businesses cut energy costs, which have soared in recent months. The latest [NFU](#) figures show that electricity costs for free-range egg producers are on average 43.4% higher than last year, while it's up 32% for cage eggs.

So how do you go about assessing and reducing your footprint? And what are the likely benefits and costs? Over the next few months, Poultry World will look at this in more detail, bringing you case studies of packers, processors, hatcheries and producers who have successfully reduced their footprint and seen the benefits.

### **What is a carbon footprint?**

The term carbon footprint has been universally adopted as a way of describing the level of greenhouse gases released during the manufacturing and processing of a wide range of products, explains the researcher.

Carbon dioxide is actually one of the least serious offenders, with methane and nitrous oxide generally being considered more damaging. Nevertheless, environmental impact is usually expressed in carbon dioxide equivalents.

[Paul Holmes-Ling](#), a senior environmental consultant for [Laurence Gould Partnership](#) explains that these greenhouse gases remain for long periods and their continuing rapid rise is causing the earth to warm up and our climate to change, he says.

According to Mr. Holmes-Ling, the most comprehensive type of analysis is a life cycle analysis, looking at the impact of the tools and fertilizers used to produce poultry feed, as well as energy used on the poultry farm itself.



Using this analysis, a recent study (see adjacent piece) found that 1kg of chicken meat is responsible for 4.57kg of carbon dioxide. This means that UK chicken consumption alone is responsible for releasing the equivalent of approximately 369,000t of carbon dioxide.

This is equivalent to half the total [greenhouse gas emissions](#) of almost 1600 Boeing 747 flights from London to New York, he says.

### **What is driving change?**

"Recent legislation in the UK requires us to reduce our greenhouse gas emissions by 80% over the next 40 years, and by 2012, businesses will be required to report annually on their own emissions alongside their financial reports," says Mr Holmes-Ling.

Reducing your emissions can reduce costs, especially if a long-term view is taken. It can begin by tackling waste energy in the short term, with more structural change such as a move to on site power generation delivering long term reductions, he says.

Mr Holmes-Ling warns that accounting for and reducing your carbon dioxide will eventually become a legal and economic necessity.

Aside from the need for socially responsible business practice, it also makes good business sense to reduce waste and future proof your business activities. Firms that make this move before they are pushed will be able to market the benefits of their low [carbon product](#) and either retain contracts or sell at a premium, he adds.

### **Footprint data could win commercial advantage**

Early indications from a project to determine the carbon footprint of poultry production suggest that the information could be used to differentiate UK products from foreign imports.

However the work also highlighted the fact that free-range systems are more harmful to the environment than intensive production methods, a situation that could cause industry conflict and confuse shoppers.

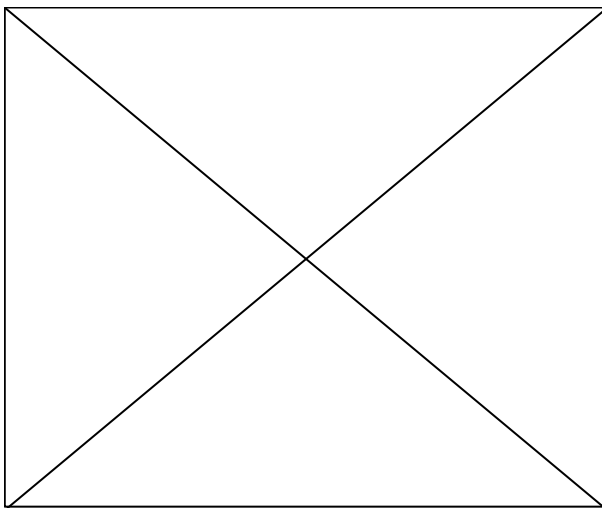
Over the past year, [Prof Oglethorpe](#) has been studying the carbon footprint of a number poultry products, in association with AB Agri. His work developed as a spin-off from a [DEFRA](#) project, which aims to find out whether buying locally produced food is good for the environment.

"The obvious conclusion is that it cuts down on harmful emissions," says Prof Oglethorpe, who is based at the Newcastle Business School, part of Northumbria University.

"But it is not clear whether a reduction in food miles can compete with the economies of scale that can be achieved using centralised production methods."

Compared with other species of farm livestock, poultry farming has a relatively low carbon footprint. Unlike ruminants, birds do not produce methane. However farming as a whole is thought to be responsible for about 40% of the total greenhouse gas emissions from the food sector.

Recent studies show that the most significant level of environmental damage in the food chain occurs on the farm and during the concentrate feed production and manufacturing process. Together, they make up half of the carbon footprint of poultrymeat, while meat processing, retailing and distribution are on a lower scale.



Prof Oglethorpe highlights a potentially controversial issue that could divide industry opinion, and cause confusion among consumers, especially if they are seeking a combination of high welfare standards and low carbon footprint, when making a buying decision about poultry products.

A conventional broiler system is estimated to be responsible for losses totalling 4.6kg of carbon dioxide per kg, with free-range systems at 5.5kg and organic at 6.7kg. The figure for intensive pig production is 6.7kg and 15.6kg for conventional beef.

"Intensive poultry enterprises generally have a comparatively low carbon footprint, mainly because they achieve a high level of production efficiency," he says.

"We must find a way of communicating with consumers, to allow them to make informed decisions about whether to they want to favour high welfare products, or select items on their environmental status," he says.

Allocating specific figures to products is not the best option, according to Prof Oglethorpe.

"Published standards for measuring carbon footprints are available, but the complexities involved make it very difficult to be precise, and the research produces commercially sensitive information. To date, there is no organisation responsible for regulating the carbon footprint evaluation process, so the figures are relatively meaningless.

"We should avoid pinning down specific carbon footprint figures for a particular product, as that could lead to a 'mine is lower than yours' situation. It would be better to draw up a pie chart, showing the percentage energy used in each process necessary for getting a product to market.

"With a chicken breast, for example, greenhouse gas emissions would be divided up to show the fuel used in the production of wheat feed, and the energy used to grow and convert ingredients into concentrate rations. There would also be a slot for energy used in processing and packaging, delivery and refrigeration."

Once the various contributions have been analysed, the entire supply chain should work together, to set targets to reduce energy inputs per kilogram of output in "hotspot" areas, says Prof Oglethorpe. He is quick to dispel the myth that energy use associated with imported foods is a major factor.

**Why carry out research? To determine the environmental impacts of various food production methods, before tackling 'hotspot' areas.**

**What is involved in the calculation? The PAS 2050 guidelines contain standards on how to measure the carbon footprint of products. For more information, see [www.bsi-global.com](http://www.bsi-global.com)**

**Duration of project - three years**

**Conducted by the Newcastle Business Team at Northumbria University. Collaborative commercial partners - Cherry Valley ABN Agri Ermine Farms, Two Sisters.**

**Funding The work being undertaken at Newcastle Business School investigating the benefits of local food is funded by DEFRA. Staff at the Business School are also engaged in poultry carbon footprint research, with sponsorship by AB Agri.**

"On average, importing food only increases its carbon footprint by 8%. Therefore it would not be wise for UK producers to claim too great an advantage over foreign imports.

"But work like ours could give the UK poultry industry an edge over foreign competitors, particularly in countries where no data is available. At least we will have the information, which could be used to increase the bargaining power of suppliers when dealing with the major retailers, especially if energy reduction targets have been set."

Research so far has looked at whole birds, cooked chicken, chicken breasts and duck, but more work is needed before conclusive results are released, says Prof Oglethorpe. He hopes to publish additional information in the near future, having analysed the duck meat supply chain, with help from [Cherry Valley](#).

The next stage is to pinpoint solutions to reduce energy "hotspots," he adds.

"These might include switching to a poultry feed ingredient that has a lower energy requirement - choosing wheat instead of beans would be one example. Solar panels, wind power, and planting a set number of trees per kg of poultrymeat produced are also methods being considered.

"Another angle would be to internalise the use of duck litter, which is high in nitrogen, to fertilise the land on which wheat is grown and used in the poultry diet. This method would allow growers to cut down on chemical nitrogen, effectively recycling waste," says Prof Oglethorpe.