



Case Study: Birch Farm Plastic Collection Limited

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Introduction and Background

In 1989, Peter and Marilyn Birch read an article in the Farmers Weekly magazine regarding a new national scheme for free collection of waste polythene from farms, such as silage film and crop film (plastic wrapping material), for recycling by British Polythene Industries (BPI) in Scotland. On contacting the company to have waste taken from their farm, Mr Birch was told there was no collection agent in his area and was given the opportunity to meet with BPI to discuss becoming an agent. As a result of that meeting, in January 1990, P & M Birch became agents for the Glamorgan and Gwent areas in South Wales. In 1994, they were then offered the additional area of Dyfed (Carmarthenshire, Cardiganshire and Pembrokeshire) and in 1995 also began to service the Powys area.



In 1995, due to the high cost of recycling this particular waste because of high levels of contamination, some manufacturers and importers of the silage film formed the Farm Film Producers Group (FFPG) and introduced an Environmental Protection Contribution (EPC). This was a levy payable by farmers on purchase of the polythene to help with the cost of collection and recycling of the material. As this was a voluntary scheme, some importers refused to join and flooded the market with non-EPC polythene, which meant that many farmers then went for the cheaper option. It was impossible to monitor which farmers had paid the EPC, which meant that waste polythene was also being collected from non-EPC customers.

Determined to provide an environmentally-friendly solution to dealing with the waste polythene,

in 1996, FFPG declined to charge the EPC on their products and financed the collection and recycling schemes themselves. Government at this time was also preparing to make farm waste a 'Controlled Waste' under EC law, which meant that any future collection scheme would be underpinned by legislation, which would avoid further issues of non-compliance by operators.

By May 1997 the Controlled Waste legislation was still not in place, and although Waste Packaging Regulations were introduced, they did not include silage film, crop film or poly-tunnel film. With no government regulations in force, FFPG reluctantly decided to end the collection and recycling scheme in the UK, and all material sent to the recycling plant then came from other countries in which their respective governments paid for the service.

*Source: J. Claricoates,
Swansea University*



UK farmers that had participated in the FFPG scheme were now in a dilemma as to how to dispose of their waste polythene. Some had been involved in the scheme since 1990, were environmentally-friendly and wanted their waste to be recycled. The statutory Environment Agency Wales (EAW) was eager to establish a scheme for Wales, as this was the area in which the previous FFPG scheme had been most successful, with over half the material going in to BPI coming from Wales. A meeting was held at the EAW office in Cardiff in September 1997 with interested bodies such as the statutory nature conservation and public access body, the Countryside Council for Wales, the National Parks Authority, the Welsh Office, Farming Unions and BPI attending. As a result of the meeting P & M Birch applied for European and Welsh Office funding to establish a collection and recycling scheme for the whole of Wales. In July 1998, funding was approved for three years – 25% via the Welsh European Funding Office, 25% from the Welsh Assembly Government and 50% from farmers, who paid a subsidised rate for collection of their waste.



An extension period of funding was allowed due to the outbreak of foot and mouth disease in 2001, which meant that access and therefore collections were suspended for six months, and greatly affected the business. Funding ended in June 2002, since when the business has run on a fully commercial basis, without any funding from the public sector.

Sorting farm plastic waste at Birch Farm Plastic Collection premises

Source: C. Lloyd, Swansea University

In 2005, Brian and Cheryl Birch (Peter & Marilyn's son and daughter) took the helm and Birch Farm Plastic Collection (BFPC) now covers the whole of the UK through a network of local agents. It is the sole supplier to BPI for the UK.

The Practice

The collected waste is recycled into a pellet, which is then distributed, through various BPI companies, for recycling into pit liners, refuse bags and other products. It is also recycled into a plastic lumber ('Plaswood'), which Cheryl Birch's company, Second Life Products Wales, manufactures into street and garden furniture for sale to schools, hotels and Local Authorities throughout the UK. This furniture is extremely strong, long-lasting, and needs no maintenance, unlike similar wooden products.

Collection of the waste is by six-wheeler, high-sided vehicles which are self-loading by means of a grab at the rear of the vehicle. The grab has a weigh-cell attached for weighing the material on to the lorry because the farmers are charged by the tonne for collection of the waste. This method has been used since 1999 and has proved successful as the customer can see the weight being loaded; each grab-full is weighed prior to loading on to the lorry.

If a farmer has a backlog of material, he/she can decide how much to have taken away at each collection. This is very important, as the farmer is not able to pass this cost on during the sale of produce from the farm, as their prices are fixed by external markets, unlike most other businesses where the costs are added to the market-price of the product.

The vehicles returning to the Birch Farm site are unloaded by means of a specific grab on a JCB, which also does the main sorting of the waste. This includes sorting of silage-pit sheeting from silage bale wrap, fertilizer bags and feed bags. The sorted material is loaded into a baler which produces 1.25 tonne bales. These are then stored to await collection for delivery to the recycling plant. All silage film, crop film, poly-tunnel film and feed bags go to BPI.



BFPC prefer that the string and netting used on farms should be stored on the farm in a bag and tied at the top for ease of sorting, but this is not always the case! Therefore some finer sorting has to be done by hand by the yard operatives. All netting and string is baled prior to taking to landfill as this is polypropylene and difficult to recycle. Fertilizer bags are currently exported for recycling as BPI cannot deal with these. They have an inner liner which is polyethylene and an outer layer which is polypropylene – and are therefore difficult to recycle. Any containers such as animal medicine containers and sprays are also

Plastic waste is bundled and distributed to processing plants

Source: C. Lloyd, Swansea University

land-filled, due to the fact that, although the containers should have been triple-rinsed on-farm prior to collection, with such a mixture of various types of polythene containers and contents, it can be dangerous to re-process them because of the production of fumes during this re-processing.

Along with the collection from farms, BFPC also have sub-contracted collection sites in various parts of the country where farmers can take their waste for a fee. The collection site operators sort and bale the polythene, and BFPC arrange the transport to deliver the material directly to BPI. Local farmers and those who produce small numbers of bales every year, can also bring their waste into the BFPC site at Pontardawe in South Wales. The tonnage rate for delivering to sites is less than the collection charge from farms.

As BFPC covers the whole of the UK, it is a truly unique national scheme. Unlike other existing schemes where charges vary from area to area, under the BFPC scheme all customers pay exactly the same price per tonne for collection – wherever they farm in the UK. Each collection agent is under contract to work within the BFPC criteria, and all collection sites are also under contract in order to protect both parties.

The company employs five local people full-time, and occasional workers when needed. The owners also work in various roles in the company.



Opportunities and Obstacles

The greatest challenge at the moment is the competition on costs from landfill sites. It can cost the farmer less to take his waste to a landfill site, than to have it collected for recycling, although landfill costs have recently risen sharply. This may benefit BFPC as it could discourage farmers from using landfill. It is usually the smaller producers that take their waste to landfill; it is more time- and cost-effective for larger farms, depending on what their farm production is, to have the waste collected. Possibly when the EU Producer Responsibility Regulations are introduced for non-packaging agricultural polythene, this will encourage positive changes within the industry. There is no intrinsic value to the polythene collected, and transport and manufacturing costs of recycling it are high although it is more environmentally-friendly to recycle the polythene than to produce virgin material. It takes 1.8 tonnes of crude oil to produce one tonne of polythene. BFPC believe that higher-level governmental strategies need to be put in place to increase the number of polythene recycling facilities in the UK which would benefit the environment by decreasing the amount of non-biodegradable material going to landfill. In some instances, waste polythene from other industries is being exported along with that from agriculture. It is less costly to transport containers as return loads to China, than to transport an articulated lorry-load of waste from London to Manchester!

A major challenge is the rising cost of fuel: often unannounced, it becomes impossible for the company to plan ahead for the long-term. With peak oil production rapidly upon us, this problem will not go away. All collections of waste from BFPC agents throughout the UK are sub-contracted out to a large haulage company; all loads taken to Scotland are back-loaded on the return journeys to economise on costs. It is a benefit to BFPC that they do not have to maintain a fleet of lorries on the road for transporting the material to BPI, although they do have two lorries and drivers for collections from farms in Wales.

The cost to the farmers of buying 'Plaswood' fence-post material is prohibitive for most at the moment, and this is quite an issue for some of them. BFPC believe that if some financial support could be given to farmers, possibly through agri-environment schemes, they would be able to purchase more, and this could bring down the production costs and end-costs to the consumer.

In the future BFPC would like to expand the number of their collection sites around the country, and encourage more farmers to use the scheme. There is an optimum number of these sites that would be viable, as they are run by separate contractors, so if there were too many in one area, they would not collect enough plastic to be cost-effective. It is the smaller producers that use these sites, and they would naturally use the closest to them.

Birch Farm Plastics are looking to maintain their market position and strive to increase their business by continuing to provide an efficient, cost-effective scheme.

One recent beneficial development is due to investment by BPI at Rhymney in South Wales. Material from Wales, the Border Counties, the West Country and South East England will be recycled in Wales, and only material from other parts of the country will continue to be recycled in Scotland. This will lead to a reduction in miles travelled by the materials, and in costs for farmers and the company.