WHAT HAPPENS TO OUR RECYCLING WASTE?

By Rosemary Bushell

*Quote from Jacques Cousteau, the late oceanographer.*

‘Water and air, the two essential fluids on which all life depends, have become global garbage cans’

In December, 2018 Moray Council’s Graham Leadbitter signed a charter with The Scottish Government’s Environment & Climate Change Minister, Roseanna Cunningham, pledging the Council to commit to further driving down the amount of waste ending up in landfill. The Council already has one of the highest rates of recycling (57.8%) in the country. Since the recent publicity and BBC programme *War on Plastic*, the public has become more aware of the complex international pollution problems caused by dumping our plastic waste in countries like China, Malaysia and the Philippines.

The THISTLEdown team wondered what happened to the household waste in Moray. Councillor Derek Ross forwarded our queries to Ally Gordon, Waste Policy Officer, Environmental Protection, Moray Council. Who has told us that the materials within your household bins go to:

**Green bin, general waste:**
Moray Council landfill site, Nether Dallachy, Spey Bay, IV32 7PL

**Blue bin, card/paper:**
Saica Natur, Poplar House, Easterboard, Croy, Kilsyth, G65 9TS, to be recycled
Saica Natur UK is a leading provider of recycling and waste management, dealing in cardboard and plastic. Dealing in large quantities, processing and selling more than 440,000 tonnes of cardboard and plastic every year.

**Purple bin, cans/plastics:**
Our co-mingled cans and plastic collections are sent to Moray Council MRF (Material Recycling Facility) located in the Coulardbank Industrial Estate in Lossiemouth. There they are segregated into plastics, aluminium cans, steel cans, waste and non-recyclable plastics. The different materials then go onto the following reprocessors:

**Steel cans:** JG Willliamsons, Moycroft Ind Est, Elgin, IV30 1XZ, then onto J R Adams in Glasgow, and then on to various outlets.

**Aluminium cans:** Novellis UK, Warrington, WA4 INN (currently to their plant in Ayr), to be recycled.

**Plastics (Type 1 & 2):** Wyllies Recycling, Ruthvenfield Way, Inveralmond Ind Est, Perth, PH1 3UF, where they are granulated into plastic pellets for recycling.
Wyllies are the only company in the area having the technology for plastic shredding and granulation. Plastics are the most difficult waste products to identify and process as there are so many different types; even the smallest amount of contamination of another type can be catastrophic for processing. The company’s new POD lorry has the ability to uplift 6 different waste types at the same time.

Non-recyclable plastics and general waste goes to our landfill site at Nether Dallachy, Spey Bay.

**Orange box/hessian bag, mixed glass:** MKD 32, Leith Docks, EH6 7DX, and then onto various European outlets for recycling

**Brown bin, garden and food waste:**
Keenan Recycling Ltd, New Deer, Aberdeenshire, AB53 6YH, provide a food waste recycling service throughout Scotland in their in-vessel composting plant. Biodegradable waste is put into an anaerobic digester and there are two by-products, biogas which can ultimately be used for fuel and digestate, which is an agricultural fertiliser and a chemical free alternative to chemical fertilisers which can increase soil organic matter more quickly than other organic materials.

Whatever we may think about the importance ethically and environmentally of recycling, it tends to only happen naturally and successfully when there is market demand for the waste items. When the Chinese stopped buying waste, recycling companies found it difficult to take waste at no charge. There is a price tag on collection, transportation and separation of waste and in some cases more energy may be required than is saved. There are economic checks and balances to be considered at all stages of the recycling process.

Tins and cans are relatively easy to deal with; the steel is separated from the aluminium by magnet; mild steel is melted down to be made into new cans, car parts, paper clips etc while recycled aluminium is very pure and it is cheaper to make products from recycled materials than from new ones.

Waste paper and card is graded; newspapers and magazines can produce new newsprint in as little as 7 days, while glossy magazines contribute additives, such as chalk and clay which is used to make recycled paper white. Lower quality paper and cardboard is quickly transformed into new packaging. Plastics are the most difficult waste streams to identify and process as there are so many different types.

Modern living relies on plastic in so many spheres but plastic can take 500 years to break down in landfill, so there is a widespread call for recycling, however, although nearly all plastics can be recycled, the extent to which they are actually recycled depends on technical, economic and logistical factors.

The amount of plastic collected by local authorities has increased each year for the last 25 years; however of the 70% of plastic recovered only about 31% is recycled. There appears to be a need for simplification of recycling across the country and for all authorities to be governed by the same rules. Councils can choose what to collect for recycling and this is often based on the cost at which they can sell the collected material and what specific recycling facilities can process.

Plastic polymer recycling is challenging and can be expensive, PET (Polyethylene terephthalate) and HDPE (High Density Polyethylene) are the polymer types most widely recycled, as in Moray. Plastics are sorted according to polymer and resin type - a system developed by the Society of Plastics Industry in 1988, ie PET 1. Bottle recycling is the most practical type of recycling because of the exclusive use of PET; bottles are easily sorted by colour and baled. The Design Guide for Recyclability states that the percentage of plastic that can be fully recycled (rather than down-cycled or go to waste) can be increased when manufacturers of packaged goods minimise mixing of packaging materials and eliminate contaminants. Shredded fragments undergo processes to eliminate impurities like paper labels; the material is then melted and extruded as pellets and used to manufacture other products. PET plastics are recycled into fleece, garments and insulation (*Is there a danger of more micro-plastics being released into the environment from this?*), while HDPE is turned into plastics such as drainage pipes and garden furniture. As plastic is down-cycled the quality becomes lower and often the end product cannot be recycled so that it joins a ‘dead-end’ waste stream.

Alongside an ethos of reduce and reuse with an easily recognisable coding and labelling system, the future of plastic recycling appears to be a change from the crude mechanical processes of ‘wash and chop’ to chemical recycling whereby mixed bales of plastic can be recycled back into their original hydrocarbon ingredients. Many chemical companies are racing to develop this ‘virtuous circle’ technology and it is an important driver of profitability, as the public is beginning to reject plastic. It is hoped that chemical recycling could quadruple global plastics recycling rates up to 50% by 2030.

Ed Note:

**THISTLEdown on the 15th July put some additional points to Moray Council:-**

- Has Moray Council’s recycling policy changed since January, 2018 and China’s ban on ‘dirty plastic foreign waste’?
- What are the economic realities of recycling for Moray Council? – Do you have any figures for the costs of segregating waste, transportation of waste etc. ?
- In the future will Moray Council be recycling more types of plastic or are the costs prohibitive?

*At the time of going to press THISTLEdown had not received a response.*