



Working Paper: Dry Mixed Recycling

National Resource Consortium (NRC)'s network of waste and recycling collectors and processors includes over 60 Material Recovery Facilities (MRFs). Through this network, NRC has clear visibility of the developing concerns around Dry Mixed Recycling (DMR), the options available to tackle the growing challenges, and the varying factors across local markets. With this insight, NRC offers the following working paper to summarise the current position relating to DMR.

Introduction

DMR emerged as a standard service requirement over the last 10-15 years in response to demand from businesses to reduce their landfilled waste. At a time when most business recycling was limited to cardboard and/or paper, other materials were included with general waste and sent to landfill. However, rising landfill tax and growing demand for environmentally responsible commercial waste processes prompted operators to introduce mixed recycling collections. DMR shifts the responsibility for segregating waste from the producer to the processor, many of whom responded by developing MRFs capable of processing DMR.

There are some key issues to consider in relation to the treatment of DMR:

- There is no standard grade definition of DMR to manage quality;
- Materials recovered from DMR are not as high quality as those captured in single waste streams;
- Improving the quality of materials captured by DMR would require more processors' resources which would be passed on to the producer as higher costs;
- In some cases, mixed recycling is often too contaminated to be fully recycled so may be classed as light waste. In other cases, processors work hard with their customers to maintain quality;
- Recycling rates vary greatly among processors; DMR material is increasingly recovered for energy rather than recycled.

As we approach a critical point for DMR, it is apparent that neither waste producers or processors have been sufficiently aware of the importance of quality in the commercial viability of DMR which has left businesses unprepared for the unfolding changes.

The current situation

There are two key market factors increasing the impetus to review DMR:

1. Restrictions imposed by China on the quality of materials imported which, until now, has been the UK's biggest export market for DMR materials.

This is at odds with:

2. Rising public demand for recycling in response to growing awareness of plastic pollution in particular, which is increasing the volume of low grade plastics in the market.

The crux of the issue lies in the value of DMR, which has always been a challenging issue. At the outset of DMR collections, some processors offered the service for free, making it difficult to establish the correct base market price. At the same time, other companies seized the opportunity to undercut the market by convincing customers that most of their waste was recycled, disregarding the high proportion that was recovered.

The value of DMR can vary greatly as materials are traded as commodities around the world, affected by changing values from supply and demand of upstream and downstream products and markets.

We are now observing that there are fewer recycling outlets for low quality recyclables, which may already possess low value. The result is that more material is being used as fuel for recovery into energy, at higher cost.

This observation is supported by a composition and impact statement compiled by NRC members, most of whom operate processing facilities:

Material	% of DMR	Recycling Impact	Cost Impact
Cardboard	30	Same	Worse
Mixed Papers	12	Worse	Worse
Mixed Plastic Bottles	16	Worse	Worse
Plastic Film (low grade)	10	Same	Worse
Metal	2	Same	Same
No Recyclables (recovered for energy)	30	Worse (increasing)	Same

The current situation is unsustainable and has created a demand for a new approach.

What options are available?

The future of DMR hinges on quality. However, the lack of a standard grade definition for mixed recycling means that there is no incentive to improve DMR quality for those that can or benefit of improving quality for those that do, and no penalty for those that don't.

There are several potential ways in which the waste sector's approach to mixed recycling may evolve, all with particular considerations:



Waste operators are re-learning that the key to maximising the value of recycling is supporting waste producers to segregate as much as possible. DMR collections, while convenient and cost-effective for the waste producer, diminish the value of the materials and place the burden of cost on the waste handler who must put more resources into processing the low value material.

What could the future look like for DMR?

It is unlikely that the industry will identify a long-term resolution to our current DMR challenges for some time. The immediate priority for waste collectors and processors is to find a commercially manageable position that is acceptable to customers. Solutions are likely to vary among collectors, and processors, and across locations, but - whatever the approach - it is likely to result in higher costs for waste producers.

The long term solution must lie in reducing our use of plastics which will re-address the balance of supply and demand. But such a systemic change requiring legislation, collaboration and culture change will take significant time. In the meantime, it is clear that greater transparency around DMR is required. As waste experts, it is incumbent upon us to educate waste producers about what happens to their materials and guide them accordingly. Waste producers and processors must take shared responsibility for improving the quality of recyclables which will be the critical factor in achieving a sustainable recycling infrastructure with controlled costs and environmental standards.