Rialtas na hÉireann
Government of Ireland

What is in our bins?

EPA Municipal Waste Characterisation Study 2018

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

What is it all about?

Municipal waste[1] characterisation studies provide up to date information on the composition of household and non-household municipal waste. Prior to this latest study, the last municipal waste characterisation study was carried out in 2008 (and prior to that in 2004). Waste characterisation should be repeated on a regular basis due the changing nature of municipal waste presentation. Compositional changes result from different consumption patterns (eg. the move away from newspapers) and from the introduction of legislation which affects how municipal waste is presented across the kerbside waste bins (residual, dry recyclables and organic). For example, commercial and household food waste is required to be segregated and made available for separate collection since the 2009 (commercial) and 2013 (household) regulations – both sets of regulations came into effect since the last full municipal waste characterisation study was carried out in 2008.

Accurate municipal waste compositional analysis is key to the determination of Ireland's progress towards meeting its EU recycling, recovery, Packaging Directive and Waste Framework Directive obligations. As waste management practices in Ireland result in many material streams being mixed at the point of generation, regular waste characterisation studies are needed to quantify what's in our bins. The Department of Communications, Climate Action and Environment and Regional waste management planning authorities need updated municipal waste characterisation to inform and help target policy and legislation. Waste Prevention work, such as that performed by the EPA in its role managing the National Waste Prevention Programme (NWPP), also relies on an up-to-date national profile and contamination factors of the kerbside recyclables and organic bins to inform public awareness and education campaigns.

The main outputs of the 2018 study are:

- Two reports (household and non-household) providing a profile of household waste and commercial (municipal) kerbside waste broken down by the main sectors.
- A contamination assessment of waste packaging in municipal waste streams.
- A spreadsheet model with a set of factors that can be used to generate a national municipal waste profile for the EPA.

Household Results

- There has been a significant reduction in organic waste in the household residual bin, thanks to the introduction of the brown bin.
- Approximately 50% of household organic waste is still being disposed of in the "wrong bins", i.e. recycling or residual bin.
- Plastics have replaced organic waste as the most prominent waste category in mixed residual household waste.
- 11% of the household waste shouldn't be in the kerbside bins at all. This material is largely made up of Textiles, Glass and Hazardous waste such as paint, WEEE and batteries.

[1] Household waste as well as commercial and other waste that because of its nature or composition, is similar to household waste. Municipal waste consists of three main elements – household, commercial (including non-process industrial waste) and street cleansing waste (litter and street bins).

Business Results

- The share of cardboard has dramatically declined as a proportion of non- household waste indicating effective separate collection is taking place in the commercial sectors.
- Organics remain the largest component of non-household waste and have increased their share of commercial waste bins.
- Almost 70% of the content of the non-household residual waste bins could potentially be diverted either to recycling or to brown bins.
- Coffee-cups were separately identified in the non-household survey. The result suggests 14,000 tonnes of coffee cups are being generated annually, about 2% of non-household waste.
- Tissues form a significant part of both household and non-household waste. Tissue paper accounted for 10% of non-household waste.

Contamination

Residual contamination typically refers to food that is left over in recyclable containers after discarding (the container may be segregated for recycling, but because it is not clean it lowers the potential recyclability of the stream). Cross-contamination occurs when recyclable materials segregated at source are contaminated with other waste. As part of the study, contamination of the different recyclable materials was measured from both household and commercial sources. Contamination rates ranged from 1.5% for glass packaging in the commercial general waste bin to 56.9% for unrecoverable plastic packaging in the household general waste bin. As expected contamination rates were generally much lower in the recycling bin. Although there is significant variation across the different materials, contamination rates are generally higher in 2018 than they were in 2008 for the household bins and at a similar level to 2008 for the commercial bins.

What does this all mean?

For Householders

- *Use your three bins*, in particular use an organic bin where available. Taking organic waste out of the mixed waste bins can improve the recyclability of the remaining materials.
- *Buy less packaged material* where possible. The proportion of plastic packaging has increased significantly.
- Items in the recycling bin should be *clean, dry and loose*. Contamination seriously affects the value of the product being recycled and was worse in the 2018 study than in 2008 for household bins.
- “That doesn’t belong there!” Materials such as textiles, glass and hazardous waste can’t be properly managed via mixed kerbside collection.

For Businesses

- Separate cardboard collection was very successful in extracting full value from this recyclable product. *Better segregation* of waste is needed to address the 70% of the General Waste bin that could potentially be collected in the brown bin or recycling bin.
- *Presentation of waste* needs to be addressed also in the commercial sector, contamination rates haven’t noticeably improved since 2008 for the commercial bins.
- *Reduce single-use!* The high proportion of “single use” waste products such as coffee cups and tissue paper was particularly evident in the commercial bins.

- Affecting plastic recycling rates for both households and businesses, the study found that two thirds of the plastic waste that ends up in our bins isn’t currently being targeted by Irelands recycling list. A broadening of the scope of what can be recycled by Irish homes and businesses will be needed to meet our future targets.