



## Commercial and Industrial Waste Arisings Methodology Revisions for England

February 2018

UK estimates for waste generation from commercial and industrial (C&I) sectors are compiled in accordance with EU Waste Statistics Regulation (WStatR) reporting requirements. Data sources and detailed approaches may differ slightly between UK countries, but overarching principles are consistent. For the purpose of WStatR, C&I is defined as a specific collection of economic activities described by NACE (“statistical classification of economic activities in the European Community”). Those considered to be C&I are: C, D, E36, E37, E39 and G-U (excluding G46.7.7)<sup>1</sup>.

Following the discontinuation of historical Defra C&I sector surveys after 2009, Defra commissioned a project to provide a new methodology to calculate waste generated by C&I in England, in order to continue to meet reporting requirements. This produced the ‘Reconcile’ methodology (report<sup>2</sup> published in August 2014), along with estimates for 2010 and 2012 specifically formatted to contribute to the Waste Statistics Regulation return and to provide a repeatable methodology.

In the original process of repeating the ‘Reconcile’ methodology for later years, several areas of double-counting were identified, and so the methodology was reworked to correct for these, resulting in a substantial reduction to the C&I arisings figures for England in the December 2016 publication of UK Statistics on Waste. Concerns raised by industry following these data revisions identified outstanding issues with the methodology.

Defra took this opportunity to develop a further modified version alongside industry experts, which was felt to improve the transparency of the methodology and better reflect current waste management processes. While the original ‘Reconcile’ methodology had reliable estimates for landfilled and incinerated waste and organic recycling, the estimates for dry recycling relied on multiple assumptions regarding intermediate treatment sites (such as MRFs) and tonnages processed under exemption, which result in considerable uncertainty. To improve the transparency of this aspect of the methodology, we have sourced alternative “end-point” data sources for key dry recyclates and removed the previous exemptions-based methodology.

The review also called into question one of the fundamental assumptions to the ‘Reconcile’ methodology to exclude waste input to transfer stations, in addition to secondary waste (essentially waste generated from the treatment of waste), on the basis that it would be captured at other points in the waste treatment chain. Upon detailed investigation, it was discovered that large

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<sup>1</sup> [http://ec.europa.eu/competition/mergers/cases/index/nace\\_all.html](http://ec.europa.eu/competition/mergers/cases/index/nace_all.html)

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<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=19118&FormSearch=Y&Publisher=1&SearchText=ev0804&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description>

tonnages (e.g. around 7 million tonnes in 2012) of waste enter transfer stations as 'mixed municipal waste' (EWC code 20 03 01; i.e. black bag waste) but are re-categorised as secondary waste (largely 19 12 12) before being sent on for treatment or disposal, and so are not captured at other later points as they are no longer identified as chapter 20 municipal waste. This is due to increased sorting and early-stage treatment at transfer stations, coinciding with an increase in separation of refuse derived fuel (RDF) for export. We have therefore made additional improvements to capture these missed tonnages, which were not accounted for in the original methodology.

*Note: The new methodology makes no attempt to estimate waste processed under exemption that is not captured within the recycling data at end-point. Hence figures may underestimate the "true" tonnages of C&I waste arisings, but are the best estimate we can produce from the available data.*

*All figures will remain provisional until they have been approved by Eurostat following the submission of the 2016 Waste Statistics Regulation return in June 2018. Additionally, minor revisions may be necessary when the waste type breakdown is produced for the WStatR, e.g. owing to differences in point of tonnage recording between WasteDataFlow and Waste Data Interrogator.*

A key presentational change will also be made to the commercial and industrial waste arisings figures. Eurostat require a wet-to-dry adjustment to be made to the submitted figures for sludges, which has a substantial impact on the total C&I figures as they include sewage and water treatment, and results in a reduction of several million tonnes a year. Industry find the non-adjusted figures are of more value and so, while the adjustment will still be required for figures submitted to Eurostat as part of the WStatR return, Defra will from now on publish the non-adjusted figures as the headline C&I waste arisings figures.

The new methodology has been used to generate the provisional 2015 and 2016 figures, as well as to revise the historical estimates and produce consistent estimates for 2011 to complete the time series. This has resulted in an increase in the C&I estimates from the revisions published in December 2016, but lower estimates when compared to the originally published figures. Comparing figures on a like-for-like basis (i.e. without the wet-to-dry weight adjustment for sludges) the total C&I arisings estimate for England in 2012 from the original 'Reconcile' project was 43.8 million tonnes. This was reduced to around 30 million tonnes (24.2 million tonnes with wet-to-dry adjustment) in December 2016, but has now been revised to 34.2 million tonnes. The 2014 figure was originally calculated as around 25 million tonnes (published as 19.8 million tonnes including wet-to-dry adjustment in December 2016), and has now been revised to 32.8 million tonnes.

The latest methodology has been developed with considerable input from industry experts and sense-checked against alternative data sources. Defra believe the latest estimates to be the most reliable figures that can be reasonably produced with the currently available data. Full details of the revised methodology are summarised in the table on the following page.

Defra will continue to work with industry to ensure that C&I estimates remain relevant to the constantly evolving industry. We welcome feedback from users on the methodological changes and data revisions – please contact us using the details provided at the bottom of the page.

**Defra, 22<sup>nd</sup> February 2018**

## Summary of the principles for the calculation of the C&I estimates, including data sources

Endpoint	Source	Details and assumptions
Incineration	EA Incineration data	Total incinerated excluding EWC Chs 01 (Mining), 02 01* (Agriculture/Forestry/Fishing), 17 (Construction) and 19 (Secondary Waste).
RDF exports	EA data	Originated as EWC code 20 03 01 ("mixed municipal waste").
Landfill & On/In Land	Waste Data Interrogator (EA)	Tonnes received at transfer stations and excluded treatment sites (i.e. those with facility types other than those listed in the first column), with origin region in England, excluding Chs 01, 02 01*, 17 and 19. Assumes that WDI captures all tonnages at permitted sites (although in reality not all sites submit returns). Assumes that double-counting between sites is avoided by excluding transfer stations and Chapter 19 waste. Exports defined as tonnes removed with destination region outside England.
Treatment: Composting/Biological Treatment/Anaerobic Digestion		
Treatment: Chemical & Physical-Chemical		
Exports from transfer stations and excluded (non-endpoint) treatment sites		
Metal recycling		
Paper and board recycling	Trade association data; HMRC export data; Defra Statistics	Assumes 88% UK paper and board waste is generated in England (based on % processed in England paper mills). Assigned to EWC codes 15 01 01 (paper and cardboard packaging) and 20 01 02 (paper and cardboard) based on trade association insight.
Glass recycling	National Packaging Waste Database (EA) returns and historical accreditation reports	Assumes 88% glass recycling and 71 % plastic recycling is packaging (based on accreditation reports for 2010-2013). These factors are applied to NPWD returns data and tonnages assigned to Chs 15 and 20 accordingly. Assumes % packaging waste received is the same for reprocessors and exporters, and that the % glass recycling that is packaging has not been altered by the introduction of separate "Glass Re-melt" and "Glass Other" categories from 2013 onwards.
Plastic recycling		
Wood recycling	Wood Recycling Association (WRA); Anthesis report	Assumes total "municipal" wood arisings have been constant from 2010-2016, in the absence of alternative data. (Tolvik (2011) projected little change in wood waste arisings 2010-2015 <sup>3</sup> ). Uses managed tonnage of recycling plus export from WRA and assumes that 84% of this is generated in England and that 58% is C&I/LACW (based on 2014/15 estimates produced by Anthesis <sup>4</sup> ). Tonnages assigned to EWC codes 15 01 03 and 20 01 38 based on industry insight.
Transfer Station adjustment (difference in 20 03 01 received at/removed from Transfer sites)	WDI (EA)	Accounts for mixed municipal waste (20 03 01) that is sorted within Transfer sites, so that it is categorised as secondary waste (Ch 19) when it leaves. Assumes that the difference in mixed municipal waste received at/removed from Transfer sites is accounted for entirely by re-coding to Chapter 19. This was substantiated by interrogation of WDI data at site level.

### Subtractions

19 12 10 (RDF) exported from Transfer	WDI (EA)	Deducted separately to avoid double-counting as this will be captured both by the 20 03 01 adjustment at Transfer, and in RDF export data.
Waste from Households (WfH)	WDF	Residual waste assigned to EWC code 20 03 01. Recyclates mapped to EWC code based on WDF material description.

<sup>3</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/82571/consult-wood-waste-researchreview-20120731.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/82571/consult-wood-waste-researchreview-20120731.pdf)

<sup>4</sup> <https://blog.anthesisgroup.com/uk-wood-waste-energy-market>

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