# 2022/23 National Statistics on Local Authority Collected Waste in England - Methodological Summary

Contents Page



## 1 Introduction

Estimates of local authority collected waste generation and management for England are published on an annual basis by Defra[1]. Since 2004/5 data collection has been via an online web-based system called WasteDataFlow (WDF). National estimates were released on a quarterly basis for the first time in February 2008 as it took some time for the new system to become established. Since Quarter 2 of 2007/8 the quarterly data have been published as Accredited official statistics, and the response rate for the survey has been 100% since 2008/9.

During 2016, Defra ceased to publish quarterly statistics following a statistical consultation exercise and now publishes data on an annual basis. An exception to this was the publication of provisional "official" statistics for Quarter 1 of 2020/21 to give early overview of the impact of the COVID-19 pandemic on local authority waste and recycling.

WasteDataFlow is a UK system and is used by the other UK countries to produce similar statistics. The questionnaires differ slightly, but the core information collected is comparable. Details of the core dataset are available here.

[1] https://www.gov.uk/government/collections/waste-and-recycling-statistics

## 2 Accredited official statistics

Accredited official statistics are called National Statistics in the Statistics and Registration Service Act 2007. An explanation can be found on the **Office for Statistics Regulation website.**

In 2020 these local authority waste & recycling statistics together with those published by the devolved administrations in Northern Ireland, Wales and Scotland underwent a compliance review by the "Office for stats regulation" (OSR), who monitor government statistical quality.

National statistics accreditation for the England publications was maintained by the review. The OSR made a number of recommendations around the statistics and publications

## 3 Timeliness

The deadline for data submission for each quarter is 3 months after the end of the quarter. After the validation process is complete (as described below) Defra generally receive the data around 6 months after the end of each quarter, however in recent years a few authorities have been increasingly late with returns, delaying the production of the statistics. Defra conduct further data quality assurance checks on the quarterly and annual data, with assistance from the Environment Agency if required.

Defra publishes the local authority breakdown and the regions, including the financial year data annually, usually in December or January.

## 4 Data quality

Generally, the data that is reported into WasteDataFlow comes from information supplied to authorities by their waste management contractor and is used by them in their own internal management information systems and for contract performance monitoring, etc. It is not possible to know for sure how accurate the reported data is, but authorities have an incentive to maintain accurate data for their internal purposes.

Reported waste collection tonnages or tonnages of material going into a primary treatment facility will have a higher degree of accuracy than tonnages of material reported at secondary or subsequent facilities. This is because after collection or on arrival at primary facilities the tonnage of waste is measured at a vehicle weighbridge. Once entering a primary treatment facility or transfer station waste may be combined with waste from other local authorities and possibly commercial sources. Subsequent fractions of this waste reported as treated or separate material streams are likely to be calculated based on a proportion of the overall tonnage of waste entering the primary facility. The local authority

will also be dependent on the co-operation of waste management facilities and brokers handling the waste further downstream on supplying relevant information. This should be borne in mind when analysing data.

In WasteDataFlow, each local authority has at least one data entry user and an authoriser who has to check and approve the data before it can be submitted to the database. After submission the data pass through standard validation checks to ensure internal consistency and completeness of data reporting and period on period changes against defined thresholds to identify potential data recording errors. Further targeted checks are carried out by Defra at a quarterly the national level, with input from the Environment Agency, as appropriate.

Stage 1 validation covers the internal consistency of the return and comparison with previous returns. There is detailed guidance for local authorities on the WasteDataFlow website covering data entry. There are also a number of tools provided to authorities to help them ensure their returns are correct. There are some in built data entry restrictions which limit data entry options and some other onscreen checks and a more detailed validation spreadsheet available on WasteDataFlow for users to run to check that the data they have entered balances. This will also highlight other potential issues for the local authority to either address or confirm as correct, with appropriate explanation before the return to submitted for validation by the contractor. There is a comments box accompanying each question where local authorities can enter extra information to help with the validation process. Once the local authority has submitted their quarterly dataset Defra's contractors review the validation checks and any comments provided. Any further points may be raised with the local authority amended if necessary.

At the national level, Defra performs checks on the consistency of the national results, comparisons with previous estimates and general sense checking of the results to check and understand trends and identify any potential data outliers. Sometimes Defra identify particular data reporting errors which are queried with local authorities, which will then be corrected in liaison with the local authority. Specific enquiries may be referred to the Environment Agency when appropriate, particularly for advice on particular waste streams, treatment facilities or outputs.

The introduction of the new treatment question, "Q100" for all local authorities from April 2015 provided scope for more flexible and complete reporting for the treatment and end destination of waste. This multiple level question structure results in a much more complex data structure, where reporting outputs are still developing. Data validation checks have evolved since its introduction and now include checks for IBA and IBA metal from incineration of waste, proportions of rejects from sorting facilities, and autocomplete functions to help reduce data errors.

The main focus of validation and data quality assurance of Q100 data is on tonnages of material, waste treatment, waste stream types and material outputs. Data quality assurance does not extend to checking accuracy down to individual facilities and individual

permits; this level of checking would require very substantial additional resource and cross reference to sources outside of WasteDataFlow. It is possible that such issues may come to light through other detailed analysis by Defra or the Environment Agency and so could be addressed at this point. Similarly if there are other targeted exercises. As this level of checking is not routinely possible this should be borne in mind when carrying out data analysis on site level data or for individual materials.

## 5 Revisions policy

The general WDF policy is to minimise data revisions and encourage local authorities to accurately report quarterly data by deadlines. Where small revisions are requested, local authorities are advised to make balancing adjustments in subsequent quarters. For more substantive changes, local authorities request their data to be 'rolled back' to them after they have submitted. Where this change request is agreed by Defra, a quarterly return will be revised. These requests are relatively few during the year, but more requests are received towards the end of the year.

Generally, no changes are permitted after validation of Quarter 4 data has been completed unless these are very significant so are by exception only. Authorities are also required to provide evidence regarding changes in procedures they have put in place to minimise the need for future data revisions.

## 6 Revisions to Historical statistics

### Revisions to waste from Household measures

There are revisions to the figures shown in Table 1 of the statistical notice, accompanying charts and the dataset "Local authority collected waste from households from January 2010 to March 2023". Table 1 below shows the level of changes.

### Residual waste from households

The methodology used to calculate **residual waste from household** has been revised to include comingled material from the recycling stream reported as going to "treatment unknown". Complexities in waste treatment, where waste may be mixed with material from different sources, and pass through several facilities can make it difficult for authorities to be certain about the final destination of this waste.

An increase in the tonnage of material reported in this way had produced a widening gap between "Total Waste from households" collected and the sum of recycling and residual waste. The calculation methodology for "Waste from Households" has now been revised to capture this material.

Where the final destination or type of treatment that waste has undergone is unknown, local authorities report this as going to "treatment unknown". This waste is mostly

material rejected from the comingled waste stream, reported as being sent from a sorting facility to an RDF facility, before being sent on to another unknown facility.

This revision to residual waste from household does not affect total waste from households recycling tonnages or the waste from households recycling rate.

This methodology change does not affect “household” waste or total local authority waste measures.

These revisions affect figures from Oct-Dec 2015 onwards and table 1 below shows the overall impact per year to the figures presented in Table 1 of the stats notice. The level of revisions to earlier years, financial years and quarterly data can be found in the waste from household dataset accompanying this statistical notice.

**Waste from household recycling figures**

There are a couple of minor changes within the statistics for 2020 and 2021/22 data resulting from revisions to data for a couple of local authorities – errors spotted in work on residual waste revisions.

i) The 2020 figure for dry recycling has increased slightly following correction of a waste source split for 1 authority. This change was not large enough to affect the recycling rate for 2020.

ii) A revision to recycling figures for Jan – Mar 2022 figures where material types have been corrected have resulted in a small increase in the tonnage of “other organics” and a small decrease in “other materials”.

**Table 1: Revisions to Waste from Households figures (thousand tonnes)**

| Waste type | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|
| **Total Recycling of which:** | **-** | **-** | **4** | **-** |
| Dry recycling of which: | - | - | 4 | - |
| IBA Metal | - | - | - | - |
| Separately collected food waste | - | - | - | - |
| Other organics recycling | - | - | - | - |
| **Total Residual** | **9** | **26** | **42** | **77** |
| **Total waste from Households** | **-** | **-** | **-** | **-** |
| **Waste from households recycling rate (including IBA metal)** | **0.0%** | **0.0%** | **0.0%** | **0.0%** |
| **Waste from households recycling rate (excluding IBA metal)** | **0.0%** | **0.0%** | **0.0%** | **0.0%** |

**Household waste**

Changes to 2021 as a result of local authority data revisions. Dataset “Local authority collected waste generation from April 2000 to March 2023 (England and regions) and local authority data April 2020 to March 2023”

**Chelmsford City Council:** A reporting anomaly in Q100 data meant that some comingled recycling tonnages were being omitted from calculated “household” recycling measures for this authority. The anomaly has been corrected for 2021/22 and results in changes to that authority’s recycling measures, rates and rejects tonnages (Tables 1 and 3 of the datasets). It also results in an increase of 8 thousand tonnes to Household recycling measures. (Table 1a and 3a of the datasets and table 3 of the statistical notice). The changes do not affect “Waste from household” measures.

**Management of Local Authority Collected Waste**

Table 3 of the statistical notice and Tables 2 and Table 2a “Table 2: Management of Local Authority Collected Waste, England” of the dataset: “Local authority collected waste generation from April 2000 to March 2023 (England and regions) and local authority data April 2020 to March 2023”.

A methodology change has been made to the calculation of these figures to include recycling collection rejects, which were recently found to be missing from these calculations. This waste is reported principally in questions 10 and 11 (kerbside collections) and 14 and 16 (Waste collected at HWRC) of WasteDataFlow, where for historical reporting reasons (pre-dating the Question 100 reporting structure) instructions tell the user not to include these rejects elsewhere in their data return. Following the introduction of full Q100 reporting for 2015/16 calculations of Total Local authority waste figures are compiled from Q100 waste treatment and disposal data, and a methodological oversight led to omission of these collection rejects from the total. Whilst originally this material was assumed to be sent to landfill, changes in waste treatment mean that this can no longer be assumed to be the case, and for simplicity this material has been included within “Other waste treatments”.

This material has now been included in calculations from 2015/16 onwards and there are revisions to “Total Waste” and “Other waste treatments”. This issue affects relatively few authorities.

The level of revisions to Table 4 of the statistical notice are shown in Table 2. The dataset accompanying this release shows level of revisions by authority and geographical region.

**Table 2: Management of Local Authority Collected Waste (thousand tonnes)**

| Waste disposal method | 2018/19 | 2019/20 | 2020/21 | 2021/22 |
|---|---|---|---|---|
| Landfill | - | - | - | - |
| Recycled/composted *of which:-* | - | - | - | - |
| Household waste | - | - | - | - |
| Non household waste | - | - | - | - |
| Total incineration *of which:-* | - | - | - | - |
| Incineration with EfW | - | - | - | - |
| Incineration without EfW[1] | - | - | - | - |
| Other | 3 | 4 | 13 | 6 |
| **Total local authority waste managed** | 3 | 4 | 13 | 6 |
| **Recycled/composted waste as percentage of total** | - | - | - | - |

**Table 3 and 3a of the datasets** – Residual waste kg Households. There are some small changes to these figures for most authorities from 2015/16 to 2021/22. This change has occurred a result of realigning dwelling stock figures with WasteDataFlow financial years.

Historically release times of dwelling stock data and updates to WasteDataFlow website for this information on to the system did not align, meaning that an offset was present in the data between dwelling stock figures and WasteDataFlow data.

In practice, this has meant that since 2007 dwelling stocks figures held in WasteDataFlow for a local authority have been out of synch with WasteDataFlow data and related to the previous financial year. This has now been corrected on WasteDataFlow from 2015/16 onwards and figures for residual waste kg per household have been revised in this statistical notice and datasets.

Changes in figures at authority level are generally fairly small, and at a regional level average out to give a decrease of between 4 and 6 kg per Household. The exception to this is the North West where for 2015/16 to 2017/18 figures for Greater Manchester were incorrect, and this has led to an increase of 19 kg per household for those years in that region. At a National level residual waste per house hold has decreased by 2 kg in 2015/16 to 2017/18, and 5 kg in 2018/19, 2019/20 and 2021/22. Due to a previous error in the dataset for the 2020/21 release, there are no revisions to the dataset for that year.

## 7 Waste from household's measure

The 'waste from households' recycling measure is a narrower measure than the other 'household' waste measure. It is used to construct a harmonised UK indicator for reporting recycling rates at a UK level on a calendar year basis, providing comparable calculations across each of the four UK countries. Table 3 shows the detail of what is included in the 'waste from households' and 'household' recycling measures.

**Table 3**

| **Recycling (including composting and reuse)** | **Waste from Households recycling** | **Household waste recycling** |
|---|---|---|
| *from households and other premises similar to households, CA sites, Bring banks* | Y | Y |
| *from street bins* | N | Y |
| *from household-related parks and grounds* | Community skips only | Y |
| *from soil* | N | Y |
| *from rubble and plasterboard* | N | N |
| *from compost-like output from MBT plant* | N | Y |
| *from incineration bottom ash (IBA)* | N | N |
| *From metal recovered and recycled from incinerator bottom ash* | Y* | N |
| *other, from residual streams* | Y | Y |
| recycling rejects | N | N |

| **Residual waste** | **Waste from households residual** | **Household waste residual** |
|---|---|---|
| *from regular household collection* | Y | Y |
| *from civic amenity sites* | Y | Y |
| *from bulky waste* | Y | Y |
| *from other household waste* | Y | Y |
| *from street cleaning/sweeping* | N | Y |
| *from gully emptying* | N | Y |
| *from separately collected healthcare waste* | N | Y |
| *from asbestos waste* | N | Y |

*Revised to include IBA metal in 2017 and applied to data from April 2015.

## 8 Inclusion of Incinerator Bottom Ash Metal (IBA Metal) In Waste from Households Recycling

A methodological change was introduced for the 2016 waste from household's dataset (Published December 2017) to include metal recovered and recycled after incineration in the recycling tonnage. Inclusion of IBA metal has been facilitated through the new Q100 reporting structure for waste treatment which all local authorities have been using since April 2015. The IBA metal which is now counted and reported as recycling would previously have been reported as 'recovery' in the waste from household's dataset. This

methodological change for IBA metal has been applied to the waste from household measures only.

This change for IBA metal has been applied to data from April 2015 - it is not possible to apply the change to data before then as the question structure was different so reporting of IBA metal was not as complete. At an overall England level this change in methodology raised the recycling rate for 2016 by around 0.7 percentage points (equivalent to 152 thousand tonnes). For 2015 the waste from households recycling rate would be increased by around 0.4 percentage points (equivalent to around 97 thousand tonnes). This is a slight underestimate for the impact for 2015 as data for January to March 2015 use the old question structure so did not fully capture IBA metal for this quarter; estimated to be around 23 thousand tonnes.

Overall, this change in methodology results in 'waste from household' recycling rates being slightly higher than where IBA metal would previously have been reported as 'recovery'.

There are no such methodological changes to the dataset for all local authority waste or 'household waste' recycling. There are no changes to the household (NI 192) household recycling figures that are reported for England, nor at a regional and individual local authority level where existing methodology and definitions have been retained.

## 9 Question 100 (Q100)

A new "Question 100" (Q100) to replace the various existing treatment questions, was introduced on a voluntary basis from April 2014 and up to around 100 local authorities in England used this new question to report their waste management practices over the quarters in 2014/15. These 100 local authorities represented about 29 per cent of all total local authority waste. Q100 reporting became mandatory in April 2015 for all local authorities in England. This is the first statistical release presenting annual waste statistics for all local authorities in England using Q100.

Q100 provides a more flexible structure that has enabled local authorities to report a more complete and transparent representation of the more complex waste treatment practices that occur which could not be accurately captured under the old question structure. It also provides the opportunity for local authorities to report in more detail the further treatment and disposal of certain waste types such as refuse derived fuel (RDF), which would have been a final output previously. This is highly specific to the local authority and the facilities and the practices used for treatment and disposal.

Q100 also allows for more accurate and transparent reporting of recycling recovered from the residual stream which is back-allocated by the waste disposal authority to its constituent waste collection authorities, where there is arrangement to do this. This is done in a slightly different way with some subtle changes to the calculation and apportionment. It also provides material specific information to be recorded which results in lower figures against 'other materials' for recycling as this is now recorded against specific materials such as glass, plastic, paper etc.

There are some subtle differences in the way the recycling calculations work in relation to the apportionment of waste as household/non-household or waste from household/non-waste from household depending on whether the local authority has provided the specific split at treatment; in the absence of this, the default factor based on the split at collection is applied. In many cases local authorities have provided specific splits for household waste but not the waste from household splits. This may have a small impact on the apportionment and the household and waste from household recycling rates.

The introduction of Q100, provides scope for local authorities to report more fully on treatment and end destination. This is particularly the case for incineration of waste and subsequent outputs and their final treatment and disposal. Gathering such information can be challenging, especially where waste is goes through multiple different sorting and treatment processes at different facilities. In most cases local authorities are able to supply this information but, in some cases, full end destination treatment is not given or is stated as 'unknown'. This may have a small impact on the final figures. Defra will continue to monitor this and working with local authorities to enhance data quality assurance and consistency and completeness of reporting.

## 10 2022/23 statistics

The final cut of quarters 1, 2, 3 and 4 of 2021/22 were downloaded from the WasteDataFlow database in December 2023.

There was a 100% submission of returns. This was from 333 reporting authorities in 2022/23 this is unchanged from 2021/22.

## 11 Seasonality and year-end effects

Waste production and management varies over the course of a year. This means that the trends observed in quarterly data (or a rolling year) will not necessarily marry up with that previously seen by users of the annual data. This means care needs to be taken in interpreting the long-term trends of an annual dataset with that of any quarterly data or between calendar year and financial year datasets. The COVID-19 pandemic impacted waste arisings and collected tonnages in 2020/21 and to a lesser extent 2021/22.

## 12 Dealing with unvalidated returns

There are two main choices for dealing with returns that have not completed validation. Either to use the validated return made for the same period of the previous year, or to use the unvalidated returns directly. In 2022/23 all returns were validated and responses received to all validation queries specifically raised by Defra.

## 13 Access to data

WasteDataFlow data becomes public domain once the statistics release has been published. Users can access the results in a number of ways:

i) From the Defra website, which contains the statistics releases and summary analyses.

ii) WDF contains a reporting feature which allows custom reports to be produced. Access is available to anyone. An email address is required to register (no other personal information is collected). Register here.

## 14 Feedback

We are always interested in feedback from users on any aspect of this release or waste statistics in general. In particular we would welcome hearing about what users do with the results and data which is available in WasteDataFlow.

Comments may be sent to:

Waste and Recycling Statistics
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Peasholme Green
York

YO1 7PX

Email: WasteStatistics@defra.gov.uk

The 2022/23 publication contains links to a short questionnaire in google forms, where you can leave comments on the publication and data.