



Northern Ireland Local Authority Collected Municipal Waste Management Statistics

Quarterly provisional estimates for
July to September 2015



Issue No: 26

Date of Publication: 28 January 2016

Theme: Agriculture and Environment

Issued by:

Analytical Services Branch
Department of the Environment
Room 6-10, Clarence Court
10-18 Adelaide Street, Town Parks
Belfast, BT2 8GB

Contact: Gary Ewing

Telephone: 028 9054 0245

Email: asb@doeni.gov.uk

URL: <https://www.doeni.gov.uk/topics/doe-statistics-and-research/environment-statistics>

Contents

Key points	2
Reader information	2
Introduction	3
Overview	4
Waste arisings	5
Recycling	8
Energy recovery	10
Landfill	12
Biodegradable landfill	14
Overview of KPIs	16
Appendix 1: User Guidance	17
Appendix 2: Glossary	25
Appendix 3: List of Acronyms	28



Key Points for Northern Ireland

- Northern Ireland councils collected 254,593 tonnes of local authority collected (LAC) municipal waste between July and September 2015. This was a 1.1% increase on the 251,771 tonnes collected during the same three months of 2014.
- The household waste preparing for reuse, dry recycling and composting rate was 45.3%. This was slightly lower than the 45.7% recorded during the same three months of 2014.
- The LAC municipal waste energy recovery rate was 16.4%. This rate was two percentage points higher than the 14.2% sent during the same three months of 2014 and more than double the 7.2% sent during July to September 2013.
- The household waste landfill rate was 38.0%, a further reduction on the 39.8% recorded during the same three months of 2014. There were 51,612 tonnes of biodegradable LAC municipal waste sent to landfill between July and September 2015. This was 2.9% less than the 53,177 tonnes collected during the same period last year. During the first two quarters of 2015/16 councils have used just under two-fifths (38.6%) of the annual Northern Ireland Landfill Allowance Scheme (NILAS) allocation.

Reader Information

This document may be made available in alternative formats, please contact us to discuss your requirements.

Purpose

This is a quarterly publication which reports provisional figures on the key measurements of local authority collected municipal waste for councils and waste management groups in Northern Ireland.

Reporting Period

1 July to 30 September 2015

Next Updates

- Provisional figures for October to December 2015 will be available in April 2016.
- Finalised data for 2015/16 are scheduled to be published on 1 December 2016.
- The scheduled dates for all upcoming publications are available from the GOV.UK statistics release calendar: <https://www.gov.uk/government/statistics>

Copyright

This publication is Crown copyright. It may be reproduced free of charge in any format or medium. Any material used must be acknowledged and the title of the publication specified.

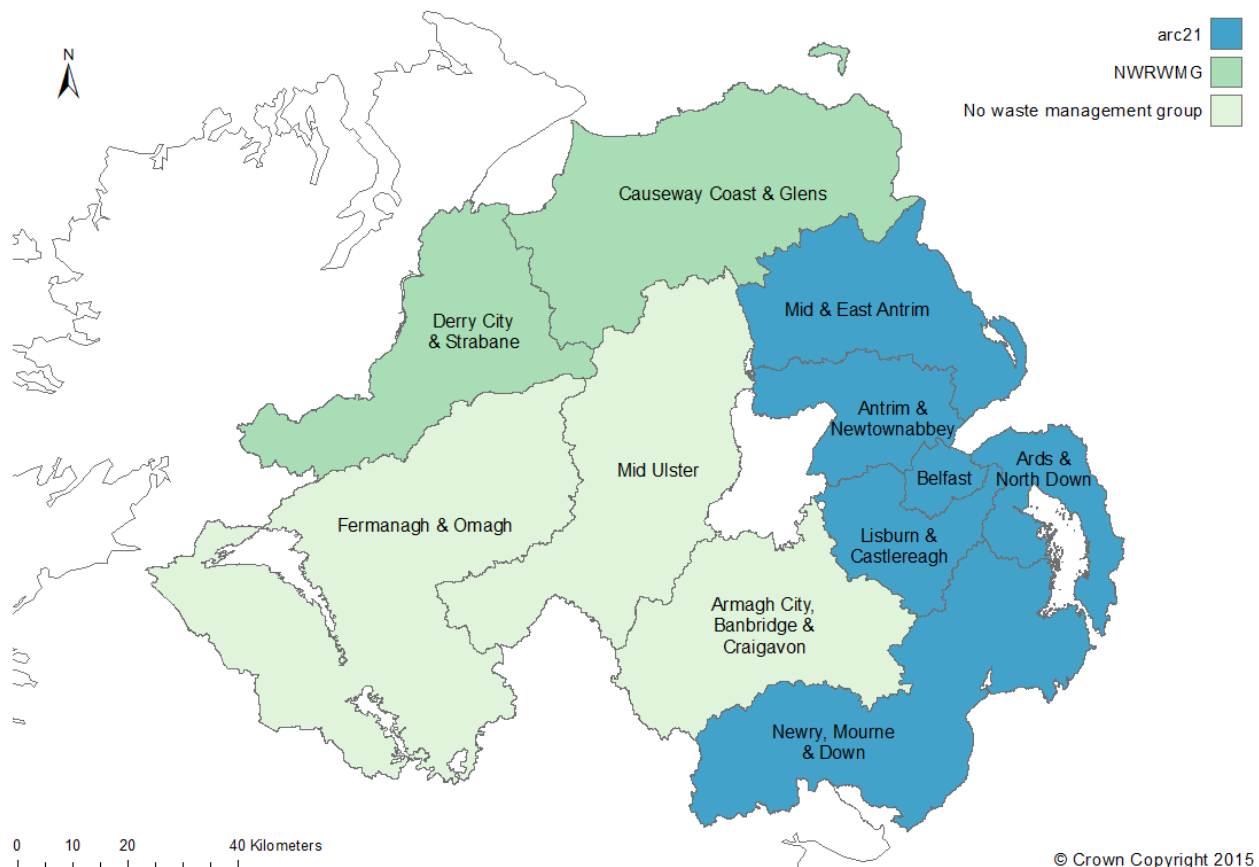
Introduction

This report presents information on the quantities of local authority collected municipal waste managed in Northern Ireland between July and September 2015. It provides information on the quantities and rates of local authority collected waste arisings, sent for preparing for reuse, for dry recycling, composting, energy recovery and sent to landfill. Some of these measurements are key performance indicators (KPIs). These are used to assess progress towards achieving waste strategy targets and where appropriate this is highlighted in the tables and charts.

The 26 councils covered by previous reports were reorganised into 11 new councils from 1 April 2015. This is the second release of waste data collected on an 11 council basis. During this period in Northern Ireland 8 of the 11 councils were split into two Waste Management Groups (WMGs) with 3 councils unaffiliated to any group. WMGs produce, develop and implement Waste Management Plans for their areas of responsibility and are an important part of the data submission process. The group with the largest share of the population is arc21 with 59%. The North West Regional Waste Management Group (NWRWMG) has 16% of the population with the remaining 25% residing in councils belonging to no waste management group.

There were six councils in arc21: Antrim & Newtownabbey; Ards & North Down; Belfast; Lisburn & Castlereagh; Mid & East Antrim; and Newry, Mourne & Down. NWRWMG contained two councils: Causeway Coast & Glens; and Derry City & Strabane. The remaining three councils were not members of any WMG: Armagh City, Banbridge & Craigavon; Fermanagh & Omagh; and Mid Ulster.

Figure 1: Map of councils and waste management groups in Northern Ireland



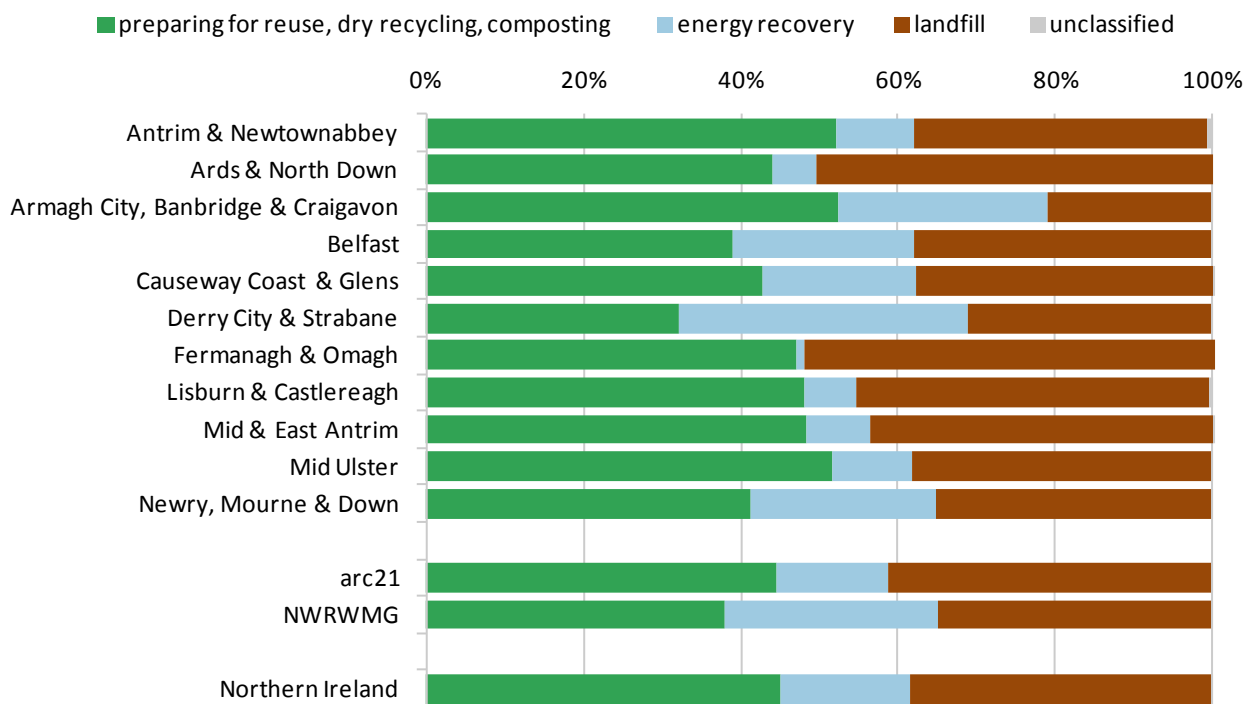
Overview

This report is split into five sections, each of which cover local authority collected (LAC) municipal and, where appropriate, household waste:

- waste arisings (pages 5-7),
- reuse, dry recycling and composting (pages 8-9),
- energy recovery (pages 10-11),
- landfill (pages 12-13), and,
- biodegradable landfill (pages 14-15).

The purpose of this overview is to show at a glance the proportions of the total LAC municipal waste arisings sent for preparing for reuse, dry recycling, composting, energy recovery and landfill between July and September 2015.

Figure 2: LAC municipal waste preparing for reuse, dry recycling, composting, energy recovery and landfill rates by council and waste management group Northern Ireland, July to September 2015



At the Northern Ireland level 45.1% of LAC municipal waste was sent for preparing for reuse, dry recycling and composting between July and September 2015. Energy recovery accounted for 16.4% and 38.3% was landfilled. This left 0.2% unaccounted for which was likely to involve moisture and/or gaseous losses. Unclassified waste is calculated as a residual amount of municipal waste after municipal waste sent for preparing for reuse, dry recycling, composting, energy recovery and landfill have been accounted for, instead of being extracted directly from the WasteDataFlow system. Each of the rates is discussed in detail in the appropriate section of the report.

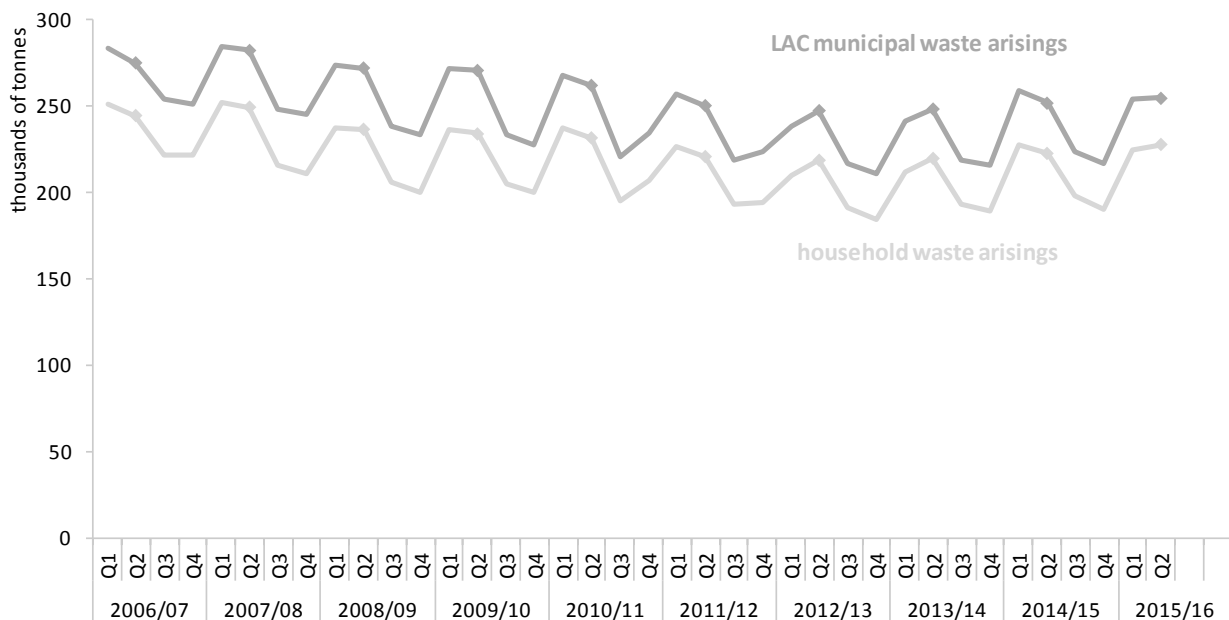
Waste arisings

The total quantity of local authority collected (LAC) municipal waste arisings is a key performance indicator, KPI (j). This indicator is also used to monitor performance under the Local Government (Performance Indicators and Standards) Order (Northern Ireland) 2015. Northern Ireland's councils collected 254,593 tonnes of LAC municipal waste between July and September 2015. This was a 1.1% increase on the 251,771 tonnes collected during the same three months of 2014.

Since 2006/07 household waste has accounted for 86-89% of total LAC municipal waste each quarter. This quarter it increased slightly to 89.5%. Household waste includes materials collected directly from households via kerbside collections, material taken to bring sites and civic amenity sites as well as several other smaller sources. The remaining 10.5% was non household waste.

Figure 3: Waste arisings

Northern Ireland, quarterly from 2006/07 to 2015/16, KPI (j)

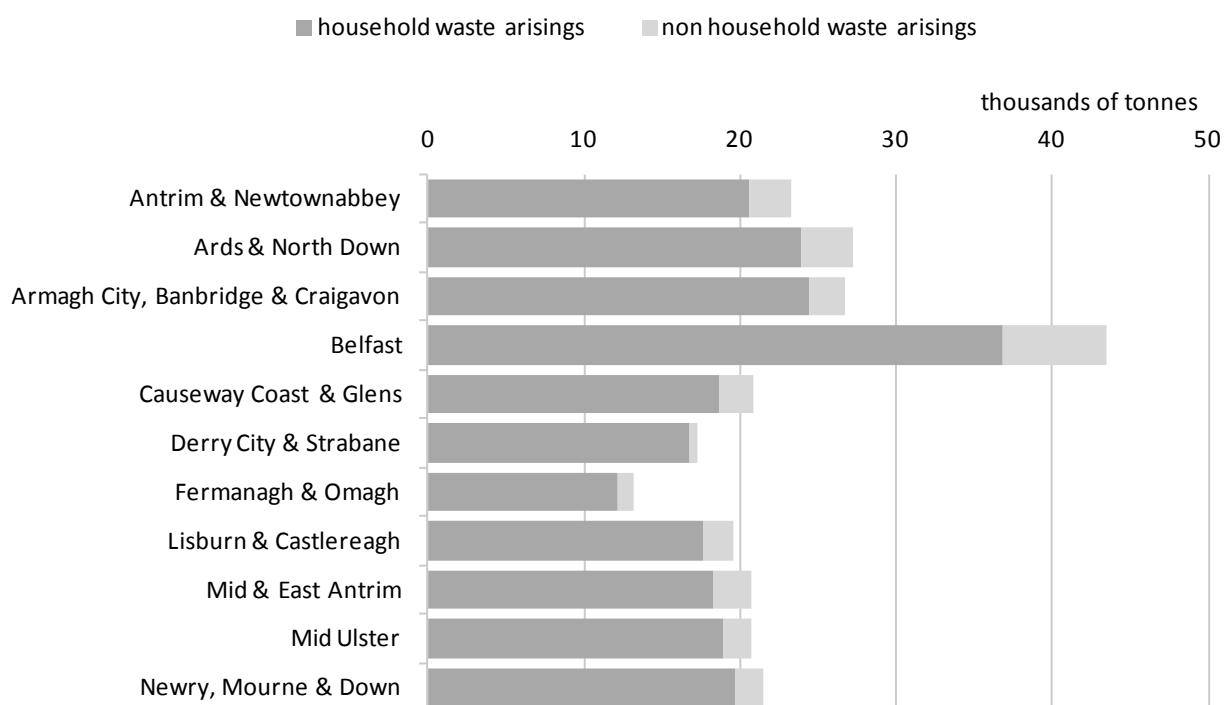


The longer term trend in July to September each year has been a gradual reduction in LAC municipal waste arisings of 12.3% across five years from a high of 282,309 tonnes between July and September 2007 to a low of 247,487 tonnes between the same three months of 2012. In the three years since, arisings have increased by 2.9% to 254,593 tonnes in the current quarter.

Factors affecting LAC municipal waste arisings, the majority of which is household waste, include individual household behaviours, the advice and collection services provided by councils and to some extent the state of the economy which continues to show signs of recovery.

Figure 4: LAC municipal waste arisings by council

Northern Ireland, July to September 2015, KPI (j)

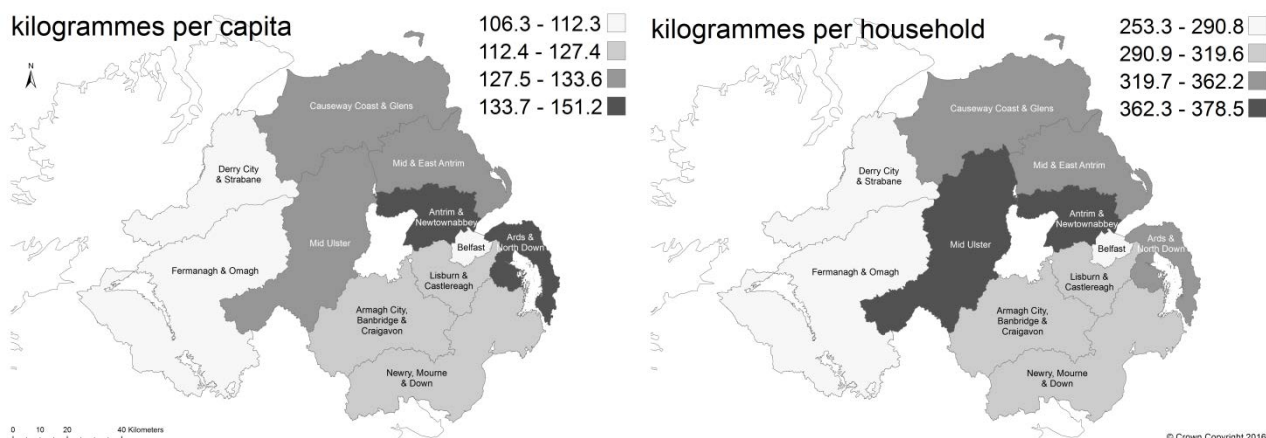


Note: The NI and waste management group figures are not shown on this chart as their larger waste arisings distort the scale and make it difficult to distinguish the differences between councils. All figures are available from the data tables appendix.

The proportion of Northern Ireland’s total LAC municipal waste collected by each council broadly reflects the population within the councils. Belfast City Council had the greatest LAC municipal waste arisings between July and September 2015 with 43,477 tonnes. This was 17% of total NI LAC waste arisings and was a little lower than its 18% share of the total NI population. Interestingly, it also had the largest proportion of non-household local authority collected municipal waste arisings, at 15.3%, likely reflecting the concentration of businesses in this area. Fermanagh & Omagh District Council had the lowest arisings between July and September 2015 with 13,126 tonnes collected. This represented 5% of total NI arisings during the period and was lower than the 6% of the NI population living in this council area.

There are two key performance indicators which look at household waste arisings in more detail by considering household waste arisings per capita, KPI (p) and per household KPI (h). In Northern Ireland there were 124 kilogrammes (kg) of household waste collected per capita (per head of population) and 313 kg per household between July and September 2015. This was an increase on the 121 kg collected per person and 308 kg per household during the same three months of 2014.

Figure 5: Household waste arisings per capita and per household by council
Northern Ireland, July to September 2015, KPIs (p) and (h)



Fermanagh and Omagh generated the smallest quantity of household waste per person of the 11 councils at 106kg per person between July and September 2015. The largest quantities per person were recorded in Ards & North Down at 151kg per person.

The household waste arisings per household show a similar distribution across NI to household waste arisings per capita with some small differences. Belfast City Council generated the smallest quantity of household waste per household at 253kg per household. The largest quantity per household was recorded in Mid Ulster at 378kg per household. This may be related to the fact that Mid Ulster has the largest average household size of the 11 councils.

The 26 councils covered by previous reports were reorganised into 11 new councils from 1 April 2015. This is the second release of waste data collected on an 11 council basis but there are no 11 council data from last year to compare this quarter's figures against. It will be possible to begin to make comparisons over time for councils from the April to June 2016 report scheduled for publication in October 2016.

The arisings figures can be found in Tables 1 and 2 of the data tables appendix. The per capita and per household figures can be found in Tables 12 and Table 13 respectively. All figures are also available from the time series dataset.

- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-q2-2015-16-appendix.xlsx>
- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-timeseries.xlsx>

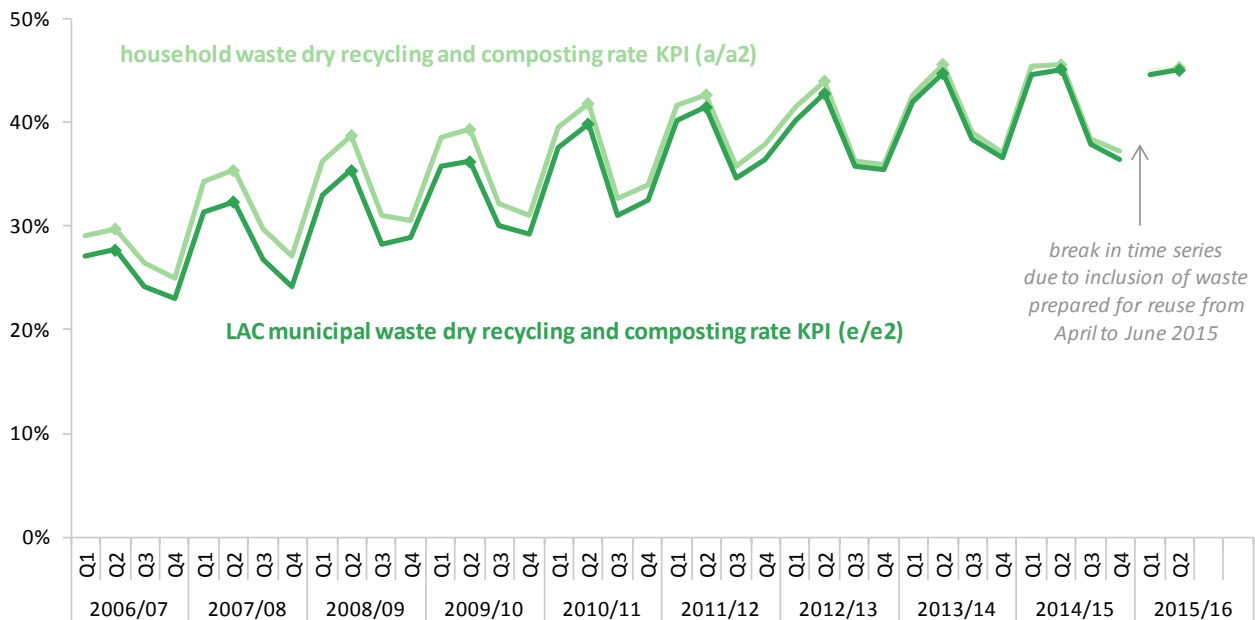
Recycling (preparing for reuse, dry recycling and composting)

This section of the report looks at local authority collected (LAC) municipal and household waste recycling rates. Both are key performance indicators and now include waste sent for preparing for reuse, dry recycling and composting. Previously used key performance indicators KPI (a) and (e) have been modified, in line with the rest of the UK, to include waste sent for preparing for reuse, and relabelled as KPI (a2) and (e2). The impacts were small, adding less than 0.1 percentage points to the rates, and resulted in the break in the time series visible in Figure 6. The KPI (a2) indicator is also used to monitor performance under the Local Government (Performance Indicators and Standards) Order (Northern Ireland) 2015.

There were 114,761 tonnes of LAC municipal waste sent for preparing for reuse, dry recycling and composting (referred to as 'recycling' for the rest of this section) between July and September 2015. The LAC municipal waste recycling rate was 45.1%. This was similar to the 45.2% of LAC municipal waste sent for recycling between July and September 2014.

The household waste recycling rate was 45.3% between July and September 2015. This was slightly lower than the 45.7% recorded during the same three months of 2014. The proportion of household waste sent for preparing for reuse was 0.1%, dry recycling made up 20.5% and composting was 24.8%. During July to September 2014, the equivalent rates for preparing for reuse and composting were similar, however dry recycling was slightly higher at 20.9%.

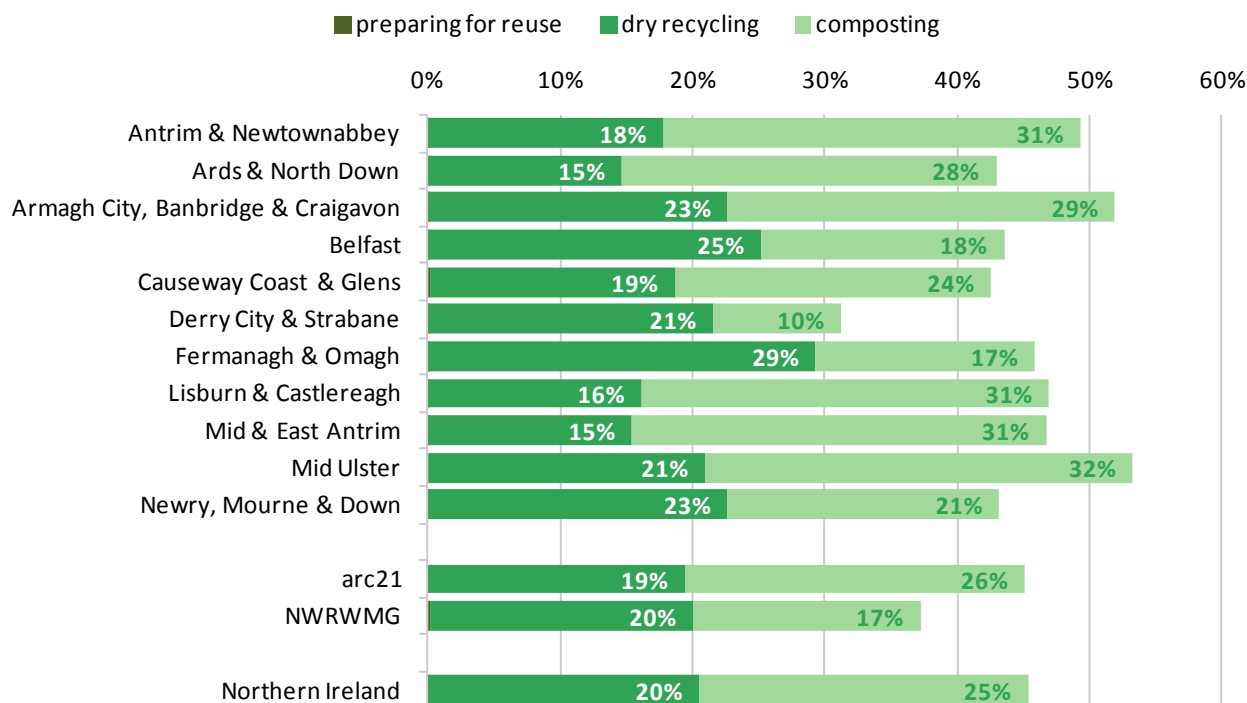
Figure 6: Waste sent for preparing for reuse, dry recycling and composting
Northern Ireland, quarterly from 2006/07 to 2015/16, KPIs (a), (a2), (e) and (e2)



These figures show seasonal variation which is driven by the quantities of garden waste sent for composting. Greater quantities of garden waste are collected and sent for composting during the spring and summer quarters April to June and July to September. The longer term trend in July to September of each year has been a steady increase in the household waste recycling and composting rate from 29.8% in July to September 2006 to 45.3% in July to September 2015, only slightly lower than the peak summer quarterly rate

of 45.6% recorded in both 2013 and 2014. Waste sent for preparing for reuse (156 tonnes this quarter) has been included from 2015/16 and added 0.1 percentage points to the rate.

Figure 7: Household waste preparing for reuse, dry recycling and composting rate by council and waste management group
Northern Ireland, July to September 2015, KPI (a2)



The highest household waste recycling rates were recorded in Mid Ulster and Armagh City, Banbridge & Craigavon councils at 53.3% and 51.9% respectively. The lowest rate, 31.2%, was recorded in Derry City and Strabane. There was considerable variation between dry recycling and composting rates. Fermanagh & Omagh recorded the highest dry recycling rate at 29.3%. Ards & North Down and Mid & East Antrim recorded the lowest rates at 14.6% and 15.4%. Mid Ulster had the highest composting rate at 32.3% and Derry City & Strabane had the lowest at 9.6%. Differences in recycling will have been affected by the timing of the roll-out of specific types of collection services between councils. The composting element of the rate in particular can also be affected by differences in the urban-rural characteristics across the council areas.

An additional recycling rate, called the waste from households recycling rate, was calculated for the second time this quarter. It is not a key performance indicator and is not discussed in this report but can be found in the data tables appendix. It can be used to make comparable calculations between each of the four UK countries. For more information see *waste from households recycling rate* under *data developments* in the User Guidance.

These figures can be found in Tables 10 and 11 of the data tables appendix and in the time series dataset. The waste from households figures are available in Tables 16 and 17 and in the time series dataset.

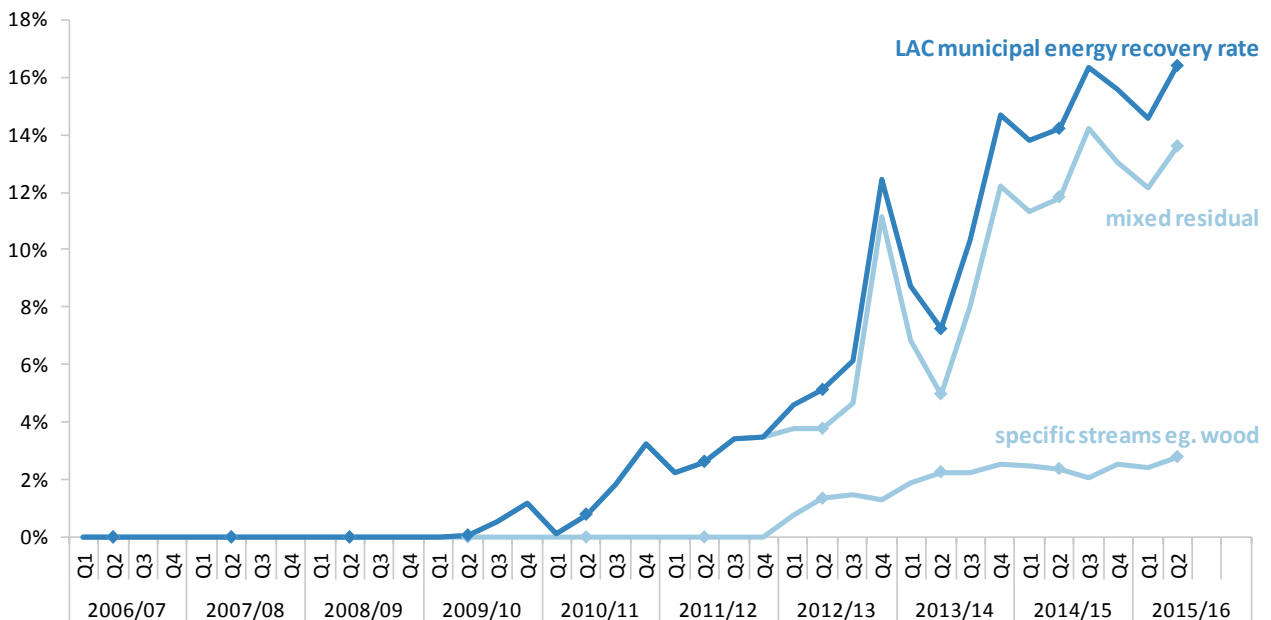
- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-q2-2015-16-appendix.xlsx>
- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-timeseries.xlsx>

Energy recovery

This quarterly report includes figures on energy recovery, which is the term used when value is gained from waste products by converting them into energy. The major method used is incineration with energy recovery, although other technologies exist. For more information see *Energy Recovery Data* in the *Data Developments* section of the user guidance.

Between July and September 2015, 41,699 tonnes of LAC municipal waste arising was sent for energy recovery. This gave an LAC municipal waste energy recovery rate of 16.4%. This rate was two percentage points higher than the 14.2% sent during the same three months of 2014 and more than double the 7.2% sent during July to September 2013. In each year, the majority was mixed residual LAC municipal waste with a smaller proportion from specific streams, e.g. wood.

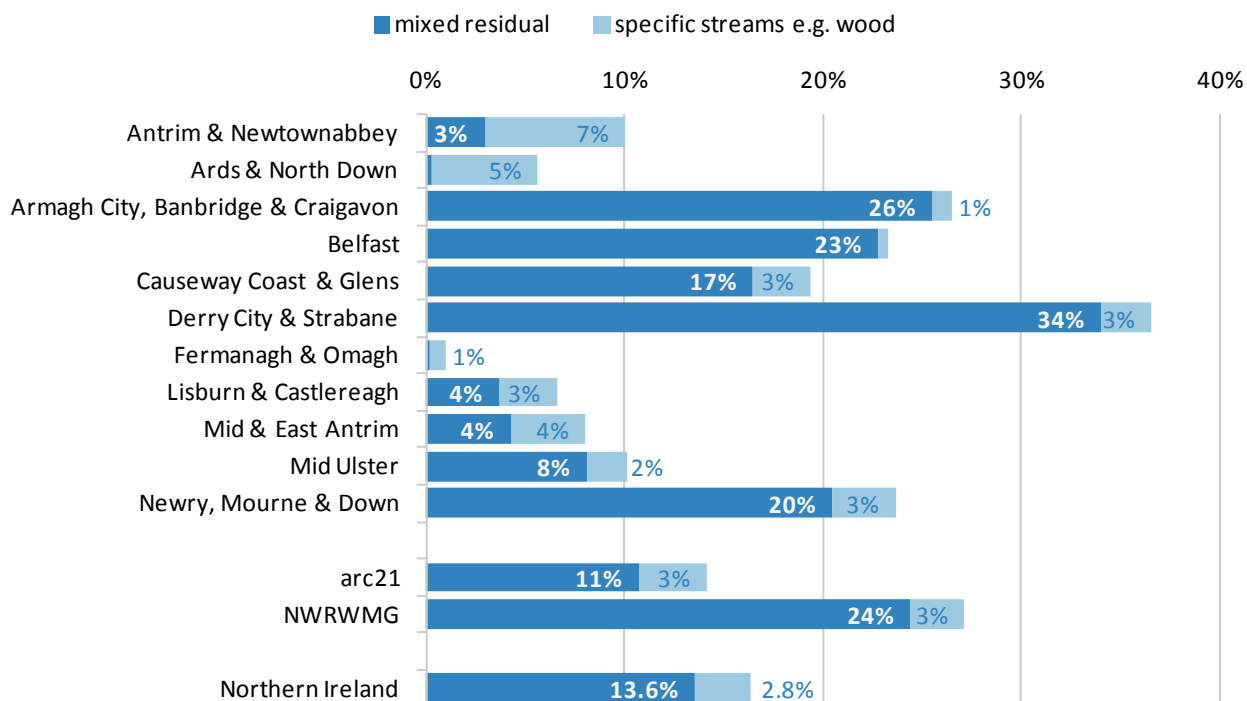
Figure 8: LAC municipal waste sent for energy recovery
Northern Ireland, quarterly from 2006/07 to 2015/16



There was zero, or very small quantities, of LAC municipal waste sent for energy recovery before 2009/10. Strong growth followed from 2010/11 to 2014/15 with the energy recovery rate increasing from 0.1% between July and September 2009 to 16.4% for the same three months of 2015. Most of the growth has been driven by mixed residual LAC municipal waste sent for energy recovery, with the specific streams proportion reaching 2-3% in 2013/14 and remaining around that level since.

Mixed residual LAC municipal waste sent for energy recovery is combustible residual waste collected from the kerbside and from civic amenity sites and processed into refuse derived fuel at material recovery facilities. The specific streams element of energy recovery is mostly wood but also includes furniture, carpets and mattresses, mostly collected from civic amenity sites.

Figure 9: LAC municipal waste energy recovery rate by council and waste management group
Northern Ireland, July to September 2015



The NWRWMG had an energy recovery rate of 27.1%, approaching double that of arc21 at 14.1% and significantly higher than the overall Northern Ireland rate of 16.4%. The highest LAC municipal waste energy recovery rates were recorded in Derry City & Strabane at 36.6%. The lowest rate was 1.0% recorded in Fermanagh & Omagh. For most councils energy recovery for mixed residual waste accounted for a greater proportion of their total energy recovery than specific streams such as wood. Antrim & Newtownabbey and Ards & North Down had the highest energy recovery rates for specific streams at 7.0%, and 5.3% respectively. Generating energy from waste by incineration is preferable to landfill, although preparing for reuse, dry recycling and composting are preferable to both.

These figures can be found in Tables 3 and 4 of the data tables appendix and in the time series dataset.

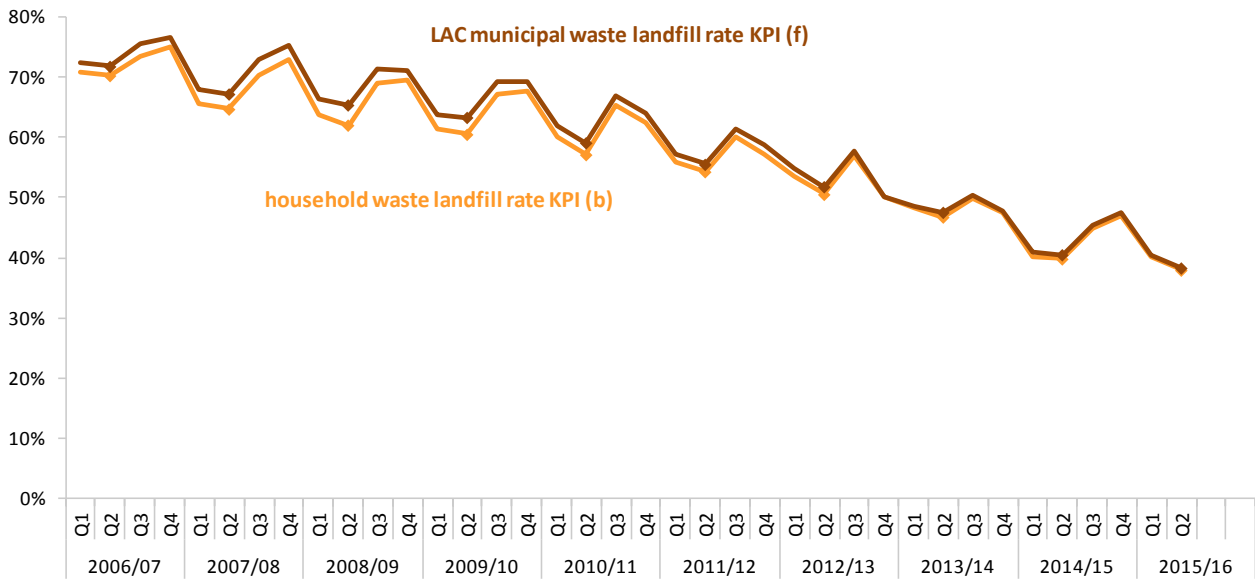
- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-q2-2015-16-appendix.xlsx>
- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-timeseries.xlsx>

Landfill

The quantity of LAC municipal waste sent to landfill decreased by 4.4% from 102,044 tonnes during July to September 2014 to 97,603 tonnes between July and September 2015. This gave a quarterly landfill rate of 38.3% for the most recent quarter which was lower than the 40.5% recorded during the same quarter of 2014. The latest quarterly landfill rate for household waste only was 38.0%, a further reduction on the 39.8% recorded during the same three months of 2014.

Figure 10: Waste sent to landfill

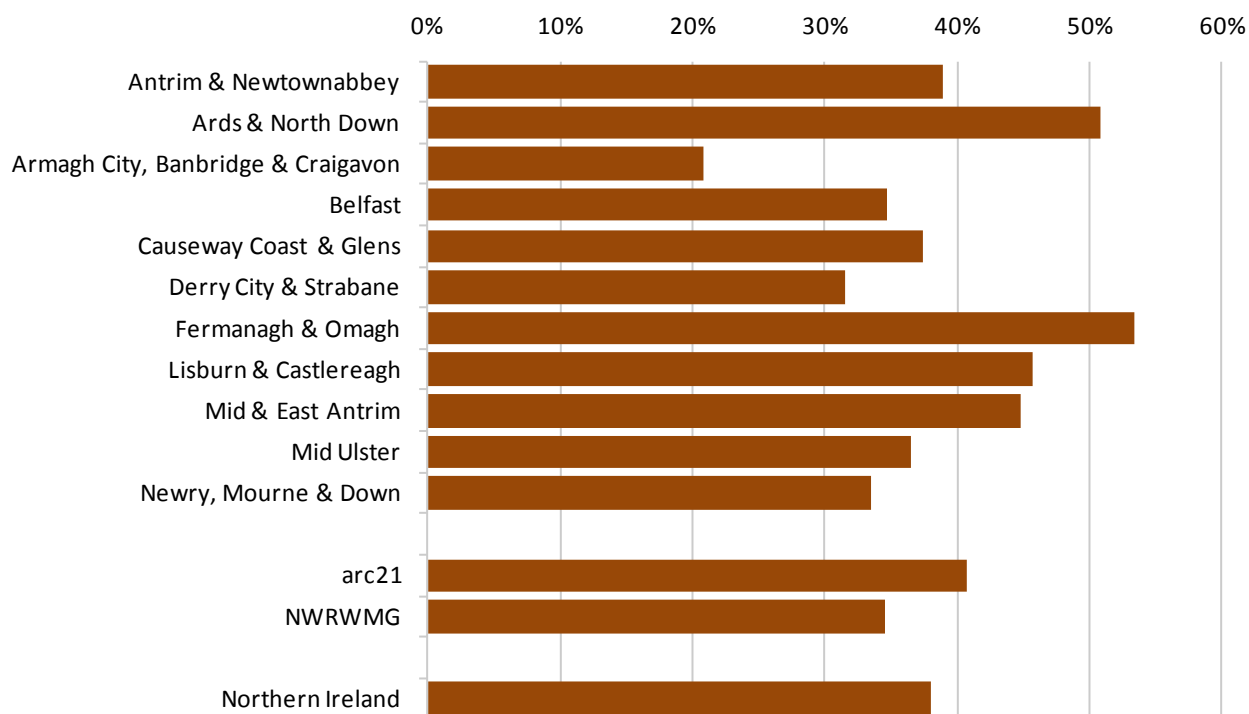
Northern Ireland, quarterly from 2006/07 to 2015/16, KPIs (b) and (f)



Whilst the landfill rate has now reached its lowest ever level, the slowing in the rate of reduction apparent in the latest quarterly figures may suggest a levelling off of the long-standing downward trend. This has seen the July to September household waste landfill rate fall consistently from 70.3% in July to September 2006 to 38.0% in July to September 2015. Note that the landfill rate exhibits seasonality and the April to June and July to September quarters tend to have lower rates than October to December and January to March. The seasonality stems from the higher proportion of compostable garden waste arising during spring and summer.

Armagh City, Banbridge & Craigavon recorded the lowest household landfill rate at 20.9%, just over half the Northern Ireland rate of 38.0%. The highest household landfill rate was recorded in Fermanagh & Omagh at 53.3%.

Figure 11: Household waste landfilled by council and waste management group
Northern Ireland, July to September 2015, KPI (b)



Material, mainly from residual waste treatment, can also be sent for energy recovery in the form of refuse derived fuel (RDF) which also diverts it from landfill. In addition, the ongoing Rethink Waste campaign is encouraging the NI population to Reduce, Reuse and Recycle their waste. Landfill Tax for household waste continues to be the main driver for local authorities to reduce landfill. Other considerations include a limit on the amount of biodegradable LAC municipal waste as measured by KPI (g). Generating energy from waste by incineration is preferable to landfill, although recycling and reuse are preferable to both.

This data and more information including collection method can be found in Tables 3 and 4 of the data tables appendix and in the time series dataset.

- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-q2-2015-16-appendix.xlsx>
- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-timeseries.xlsx>

Biodegradable local authority collected municipal waste to landfill

Article 5(2) of the EC Landfill Directive (1999/31/EC) requires member states to reduce the amount of biodegradable municipal waste sent to landfill, setting challenging targets. The Landfill Allowance Scheme (NI) Regulations 2004 (as amended) place a statutory responsibility on councils, in each scheme year, to landfill no more than the quantity of biodegradable LAC municipal waste (BLACMW) for which they have allowances. In order to ensure compliance with these targets, the amount of biodegradable LAC municipal waste sent to landfill, KPI (g), is monitored. This indicator is also used to monitor performance under the Local Government (Performance Indicators and Standards) Order (Northern Ireland) 2015.

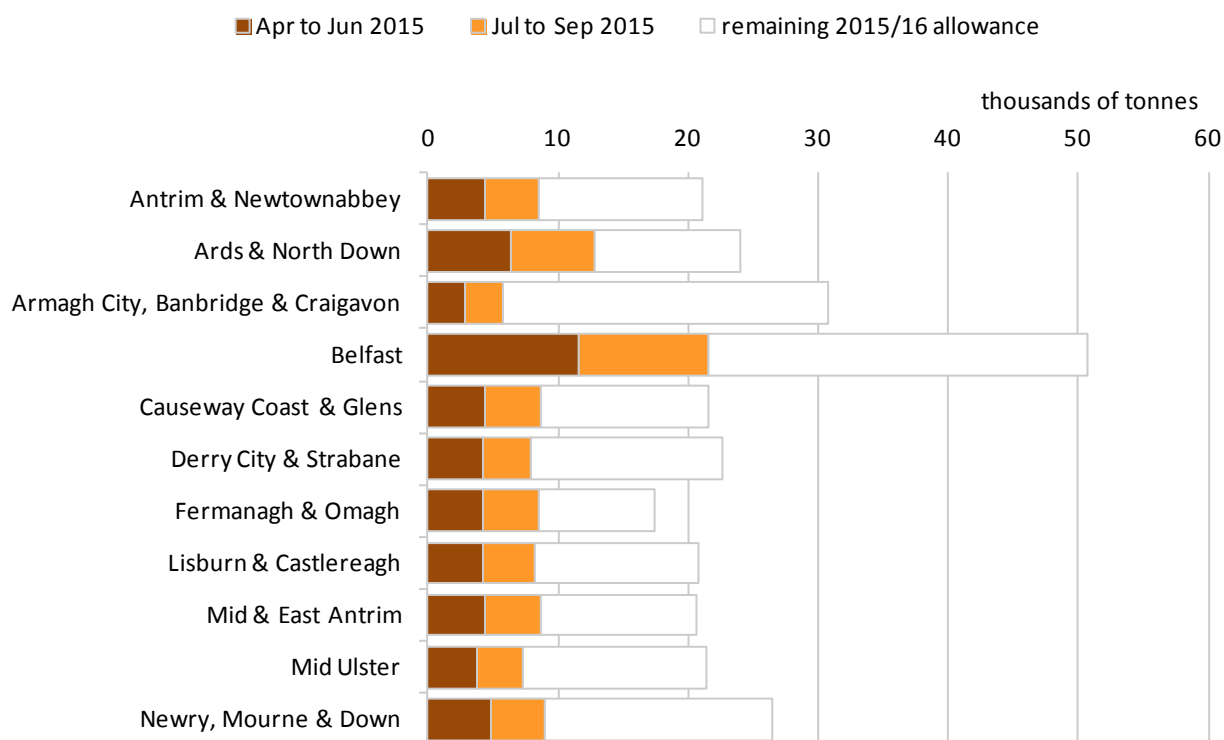
Under the Northern Ireland Landfill Allowance Scheme (NILAS) regulations councils have been allocated a number of allowances (each allowance represents 1 tonne of BLACMW) for each year until 2019/20. However in any scheme year a council may transfer allowances to other councils in order to ensure that each council does not exceed the amount it is permitted to send to landfill. Transfers of allowances are not included in the provisional quarterly figures but are included in the finalised annual figures. The finalised 2015/16 figures are scheduled to be released on 1 December 2016. More information on the NILAS regulations can be found on the DOE website:

- <https://www.doeni.gov.uk/articles/northern-ireland-landfill-allowance-scheme-nilas>

There were 51,612 tonnes of BLACMW sent to landfill between July and September 2015. This was 2.9% lower than the 53,177 tonnes sent between the same three months of 2014. However it did account for a slightly higher proportion of the annual allowance, 18.6% between July and September 2015 compared to 18.2% in the equivalent quarter of 2014. The difference in rates was primarily due to the 2015/16 NILAS allowance (277,142 tonnes) being 4.9% lower than the 2014/15 allowance (291,428 tonnes) rather than the smaller decrease in the quantity of biodegradable LAC municipal waste sent to landfill. During the first two quarters of 2015/16 councils have used just under two-fifths (38.6%) of the annual NILAS allocation.

The waste management groups arc21 and NWRWVG have used 20.2% and 18.0% of their 2015/16 allocations between July and September 2015, and 42.0% and 37.7% of their allocations during the first two quarters of 2015/16 combined. If comparing the extent to which allowances have been used against last year, it is important to note that there has been a reduction in the allocations, and that Local Government re-organisation has changed the membership of the waste management groups.

Figure 12: Biodegradable LAC municipal waste allowance sent to landfill by council
Northern Ireland, July to September 2015, KPI (g)



Note: The NI and waste management group figures are not shown on this chart as their figures distort the scale and make it difficult to distinguish differences between councils. The figures are available from the data tables appendix.

There is considerable variation between councils in the proportion of the 2015/16 allocation used between July and September 2015. Armagh City, Banbridge & Craigavon used the lowest share of its annual allocation at just under one-tenth (9.3%) during the quarter and just under one-fifth (18.5%) for the year-to-date. Ards & North Down used the largest proportion at over one-quarter (26.9%) between July and September 2015 and just over half (53.4%) for the year-to-date.

This data can be found in Table 14 of the data tables appendix and in the time series dataset.

- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-q2-2015-16-appendix.xlsx>
- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-timeseries.xlsx>

Overview of Key Performance Indicators

Key Performance Indicators (KPIs) are a set of measures used to gauge performance in terms of meeting waste strategy targets. They were originally defined in the Environment and Heritage Service (now the Northern Ireland Environment Agency) municipal waste data monitoring and reporting: interim guidelines, published in March 2003.

The annual reports provide final validated information on KPIs used to assess progress towards achieving local authority collected municipal waste targets. As targets are set for an annual period, care should be taken when comparing quarterly figures against such targets.

The reference table below has been included to help users quickly find a specific KPI in the report and/or appendix.

Indicator	Definition	Location
KPI (a)	Percentage of household waste arisings sent for recycling and composting	Report pages 8-9
KPI (a2)	Percentage of household waste arisings sent for preparing for reuse and recycling (including composting)	Report pages 8-9 Appendix table 11
KPI (b)	Percentage of household waste arisings landfilled	Report pages 12-13 Appendix table 11
KPI (e)	Percentage of local authority collected municipal waste arisings sent for recycling and composting	Report pages 8-9
KPI (e2)	Percentage of local authority collected municipal waste arisings sent for preparing for reuse and recycling (including composting)	Report pages 8-9 Appendix table 4
KPI (f)	Percentage of local authority collected municipal waste arisings landfilled	Report pages 12-13 Appendix table 4
KPI (g)	Biodegradable local authority collected municipal waste landfilled	Report page 14-15 Appendix table 14
KPI (h)	Total household waste collected per household	Report pages 7 Appendix table 13
KPI (j)	Total local authority collected municipal waste arisings	Report pages 5-6 Appendix tables 1-2
KPI (m)	Percentage capture rate for collected household kerbside primary waste categories	Appendix tables 15i and 15ii
KPI (p)	Total household waste collected per capita	Report page 7 Appendix table 12

Note: In this table 'appendix' refers to the data table appendix available with the report.

- <https://www.doeni.gov.uk/sites/default/files/publications/doe/lac-municipal-waste-q2-2015-16-appendix.xlsx>

Appendix 1: User Guidance

This statistics release is part of a regular quarterly data series presenting provisional information on local authority collected municipal waste managed in Northern Ireland.

There were a number of major changes to the report last quarter. See *Local Government Reorganisation* for details of the switch from reporting on 26 to 11 councils. See the *Data Developments* section for details of a change to key performance indicators (a) and (e), a new 'waste from households' recycling rate and the inclusion of energy recovery figures in the quarterly report for the first time. This report has also been updated using feedback from the user consultation in summer 2015 and from NISRA's peer review group.

Description of data

Local authority collected municipal waste (LACMW) data in Northern Ireland. This relates to all waste under the control or possession of a council.

Main Uses of Data

Data contained in this release are published primarily to provide an indication of the progress towards achieving waste strategy targets. They allow for the assessment of the performance of the councils and waste management groups in Northern Ireland in managing waste arisings, recycling, composting and landfill. Targets are set for an annual period and care should be taken when comparing quarterly figures against such targets.

The revised NI Waste Management Strategy sets out targets for the management of local authority collected municipal waste.

- To achieve a recycling rate of 45% (including preparing for re-use) of household waste by 2015.

- To achieve a recycling rate of 50% (including preparing for re-use) of household waste by 2020.
- Proposals to achieve a recycling rate of 60% (including preparing for re-use) of LACMW by 2020.

<https://www.doeni.gov.uk/publications/delivering-resource-efficiency-northern-ireland-waste-management-strategy>

The 2011-15 Programme for Government (PfG) contains a target that NI will achieve a household recycling or composting rate of 45% by the end of March 2015.

<http://www.northernireland.gov.uk/pfg-2011-2015-final-report.pdf>.

The Local Government (Performance Indicators and Standards) Order (Northern Ireland) 2015 came into operation on 28 September 2015. It contains three waste management indicators which correspond to KPIs (a2), (g) and (j) in this publication.

EU Waste Framework Directive statutory target requires member states to recycle 50% of waste from households by 2020.

The data are also used to assess performance against the Landfill Directive targets.

http://www.ciwm.co.uk/web/FILES/Technical/Landfill_Directive.mht.

The annual report provides final validated information on several key performance indicators (KPIs) used to assess progress towards achieving local authority collected municipal waste targets.

These data also provide policy makers with the necessary information to formulate and evaluate waste services and are helpful in assessing the effectiveness of resource allocation in providing services that are fully responsive to public need.

Councils and waste management groups use these statistics to inform corporate analysis and reports. Indeed both councils and waste management groups are integral parts of the data provision and submission processes.

The waste data may help to inform particular lifestyle choices of the public, specifically decisions about how to treat their waste. Waste statistics are used in the 'Rethink Waste' campaign which influences choices that ultimately impact upon the quantity and type of waste that is generated, reused and recycled. The Department of the Environment (DoE) Northern Ireland delivers the Northern Ireland Waste Management Strategy through the Rethink Waste Programme. <http://rethinkwasteni.org/about-waste/facts-and-figures/>

Waste data feed into Northern Ireland specific and UK wide research projects carried out by Waste and Resource Action Programme (WRAP). <http://www.wrap.org.uk/>
<http://laportal.wrap.org.uk/>

These projects are funded by each of the governments within the UK and the EU. The results of research by WRAP assist governments to devise strategies to deal with issues such as using resources sustainably, helping people to recycle more and to waste less both at home and at work, which offers economic as well as environmental benefits.

Additionally, waste management information is used to inform the media, special interest groups such as the Chartered Institute of Waste Management (CIWM) which is the professional body representing waste and resource professionals, academics, for example those who would have an interest and/or involvement in the WRAP research mentioned above, and by the DoE to respond to parliamentary / assembly questions and ad hoc queries from the public.

The Northern Ireland Neighbourhood Information Service (NINIS) provides access to waste information with the aim of making it available to as wide an audience as possible by providing interactive charts and mapping facilities that enable the statistics to be interpreted in a spatial context.

<http://www.ninis2.nisra.gov.uk/InteractiveMaps/Agriculture%20and%20Environment/Environment/Local%20Authority%20Collected%20Municipal%20Waste%20Recycling/atlas.html>

Local Government Reorganisation

The 26 councils covered by previous reports were reorganised into 11 new councils from 1 April 2015. This is the second release of quarterly waste data collected on an 11 council basis.

Several changes to this report were proposed and a user consultation exercise was carried out from 1 June to 31 July 2015. Some of the changes were a necessary consequence of the reorganisation of Local Government, but the opportunity was also taken to streamline the publication, increase its utility, and to make it more user-friendly. The proposed changes and summary of responses are available on the ASB website.

<https://www.doeni.gov.uk/publications/changes-quarterly-ni-local-authority-collected-municipal-waste-management-statistics>

Data Developments

Key Performance Indicators (a) and (e)
Prior to 2015/16, NI recycling KPIs did not include waste sent for preparing for reuse, unlike the other UK devolved administrations. Waste sent for preparing for reuse has been added to the calculations of these KPIs and they have been renamed KPI (a2) and KPI (e2).

The difference this makes to the quantity of waste recycled is small. Across the four quarters of 2014/15 this change added around 200 tonnes of waste sent

for preparing for reuse to the recycling total per quarter. This added 0.1 percentage points to the KPI (a) and KPI (e) rates each quarter.

These measures are now more consistent with the rest of the UK and more consistent with the definition of the targets in the Waste Management Strategy 2006-2010 and the Local Government (Performance Indicators and Standards) Order (NI) 2015, which include waste sent for preparing for reuse.

Waste from households recycling rate

In Northern Ireland, the household recycling rate is based on 'household waste' as defined in the Waste and Contaminated Land (NI) Order 1997 (the 1997 Order) and Schedule to the Controlled Waste and Duty of Care Regulations (NI) 2013. The new 'waste from households' recycling rate has been introduced for statistical purposes to provide a harmonised UK indicator with a comparable calculation in each of the four UK countries.

This new 'waste from households' measure has been added to the data tables appendix, see Table 16 for tonnages and Table 17 for rates. However the focus of this report is still the previous 'household waste' definition because it is the measure most directly related to current NI policy targets. There are targets in the Waste Management Strategy 2006-2010, the 2015-16 Programme for Government and the Local Government (Performance Indicators and Standards) Order (NI) 2015 that reference the prior 'household waste' definition. The 'waste from households' measure may feature in the body of this report in future if it becomes more prominent in recycling targets.

There is a difference between 'household waste' and 'waste from households'. The latter has a generally narrower definition than the former. There are a number of

sources of waste that were considered under 'household waste' that are not considered by 'waste from households', for example waste from street recycling bins and street cleaning. More information is available from the 'waste from households' calculation guidance on the WDF website.

<http://www.wastedataflow.org/Documents/GuidanceNotes/WastefromHouseholds/Guidance%20-%20waste%20from%20households.pdf>

Analysis using 2014/15 data has shown that the 'waste from households' rate is, on average, 1.5 percentage points higher than the 'household waste' recycling rate at the Northern Ireland level. Most of this difference was caused by the exclusion of street cleaning from the denominator.

Energy Recovery Data

In response to a user need raised during consultation in summer 2015, energy recovery figures have been added to the quarterly reports. Material, mainly from residual waste treatment, can also be sent for energy recovery in the form of refuse derived fuel (RDF) which also diverts it from landfill.

Data Sources

Waste Management Data

The information presented in this report is taken from WasteDataFlow (WDF), a web based system for local authority collected municipal waste reporting by UK local authorities to central government. The data are based on returns made to WDF (relating to approximately 40 questions on local authority collected municipal waste management) by councils, within two months of the end of each quarter.

It is increasingly rare that residual waste may still be disposed of directly to landfill. Waste is collected by the councils directly from the kerbside and some civic amenity sites; third parties under contract to the council also collect from the remaining civic amenity sites and almost all of the bring banks. Some

larger councils use intermediate bulking up stations where the waste is weighed both coming into and leaving the transfer station. In all cases the waste is weighed on arrival at treatment sites for recovery e.g. Material Recovery Facilities (MRFs) and/or disposal e.g. landfill sites.

MRFs, which sort the co-mingled waste into different resource streams, almost always have more than one input source and so the weighed tonnages of each stream coming out of the plant are assigned pro-rata to each source i.e. based on their input tonnages as a percentage of all input tonnages for that period. Weighbridge dockets are generated which form the basis for statutory Waste Transfer Notes (WTNs) as the waste moves further down the treatment chain/onto reprocessors. These WTNs and/or internal reports (which also form the basis for invoices) are then sent to the council on a monthly basis. These are summarised on a quarterly basis and organised into the relevant WDF questions/categories and finally input by hand into the WDF web portal.

Data providers (councils in Northern Ireland) are supplied with technical guidance documents outlining the methodologies that should be used in the collection, reporting and validation of the data returns. These documents can be accessed on the WDF website.

www.wastedataflow.org/html/datasets.aspx#NorthernIrelandGuidance

Population Data

Population data used to calculate KPI (p), household waste arisings per capita, are taken from the 2014 mid-year estimates, produced by NISRA, and were the most up to date available at the time of publication.

Household Data

Household data used to calculate KPI (h), household waste arisings per household, are based on the Land and

Property Services (LPS) housing stock plus the number of quarterly new dwelling completions up to and including the quarter to which this report relates. An adjustment is made to account for the estimated number of vacant properties. A council-specific occupancy rate was calculated from 2011 Census data and is applied to the LPS data. The datasets can be accessed from the LPS website. http://www.dfpni.gov.uk/lps/index/about-lps/publications_and_statistics/housing-stock-statistics.htm

http://www.dfpni.gov.uk/lps/index/about-lps/publications_and_statistics/new-dwelling-statistics.htm

The advantages include a more timely dataset, eliminating the one quarter lag that previously existed between the waste figures and housing figures, and the use of completions rather than new dwelling starts should be more representative of the number of households that could potentially be producing waste. The impact of the change is small with the new household figures being 0.3% greater at the NI level based on 2014/15 figures. This has the knock-on effect of decreasing the arisings, recycling and landfill per household rates by 0.3% at the NI level. The impacts are greater at the council level but most councils see changes of less than $\pm 1\%$. The greatest change occurred in Fermanagh with a 3.8% increase in the number of households over the previously used figures which may suggest the previously used estimate of vacant properties was too high.

Data Quality

The data are provisional and may change when all returns have undergone validation at the end of the year. The data were downloaded from WDF on 8 January 2016. At that time, all the councils had made a return, giving a 100% response rate.

Information contained in this report has been sourced from WasteDataFlow (WDF) which is the web based system for local authority collected municipal waste data reporting by UK local authorities to central government. The data in this report are based on returns made to WDF by councils in Northern Ireland at the end of the quarter. Although these quarterly data have been validated by the Department prior to release, the data should be treated as provisional since they will undergo further validation.

The fully validated figures that are published in the *annual* report have undergone audit by NIEA and further validation by ASB. The annual validation acts as a check that all issues raised at the quarterly validation stage have been addressed. Additional validation checks incorporated later in the working year are then also applied backwards to all quarters in the reporting year via the annual validation.

The fully validated figures for 2015/16 are scheduled to be published in the annual report on 1 December 2016.

Strengths of Data

Data are derived from WDF with full coverage for all councils to support statutory NILAS diversion targets. As the data are derived from an administrative system, they provide a complete picture of council controlled waste activity in NI.

Validation and audits

Various validation checks are carried out by both Northern Ireland Environment Agency (NIEA) and Analytical Services Branch (ASB). Validations are conducted for each individual question, with additional global validations carried out to ensure that total tonnage of waste types is equal to the sum of the component parts. Any discrepancies are queried with the data provider. Variance checks are employed as an integral part of the production process.

In addition, NIEA carry out a year round programme of audits of WDF returns by individual councils. These audits are conducted under Regulation 10 (6)(a) of the NILAS Regulations. Councils are selected from each waste management group and contacted by telephone, letter and e-mail informing them of NIEA's intention to audit. The audit involves checking and confirming relevant data submitted as a NILAS return to the Monitoring Authority via WDF. One quarter of each council's municipal waste returns are selected, generally being the most recent submission. The areas being inspected relate to:

- i. landfilling of municipal waste,
- ii. collection, recycling, reuse and recovery of municipal waste,
- iii. the standard of reporting/evidence for end destinations of recycled materials.

Councils are asked to provide original documentation to support reported figures in the WDF system for the quarter in question. Any anomalies or discrepancies are subsequently queried with the relevant council. As WDF data can usually only be amended at council level, it is then necessary to 'reject' or release the data back to the waste management group and subsequently back to the council so that it might be corrected as appropriate.

Limitations of Data

Waste Management Data

Despite the intensive validation carried out on the data prior to publication, any administrative system involving manual data compilation will always be open to a degree of clerical error.

Provisional Status

In addition, data are not finalised until the production of the annual report. For these reasons, very small increases or decreases in figures (<0.5%) are not highlighted in the commentary and should be interpreted with care. Due to the significant impact of in-year revisions at low geographical levels, the

provisional Council level figures should only be viewed as indicative and any comparisons made with care and with due regard to seasonal factors. Department of the Environment policy is to publish revised figures with subsequent statistical releases unless it is decided that the magnitude of the change merits earlier notification. Provisional results for each quarter are published within four months of the end of that quarter. Each quarter will not be revised in subsequent quarterly publications to minimise revisions and confusion for the user. Instead, a final set of results will be published in the annual dataset in November and this will include revised quarterly figures.

Unclassified waste

Unclassified waste is calculated as a residual amount of municipal waste after municipal waste sent to landfill, sent for recycling (including composting), sent for energy recovery and preparing for reuse have been accounted for, instead of being extracted directly from the WasteDataFlow system. The majority of the total unclassified tonnage can be attributed to moisture and/or gaseous losses. Small negative tonnages can arise in the unclassified column if more waste is sent for treatment in the quarter than was actually collected as is more likely at councils operating transfer stations. Transfer stations move waste quickly but if a particular transfer occurs the day after arriving, which also happens to be the start of the next quarter, then a small inconsistency can arise.

Types of waste

There are many different forms of waste, including municipal solid waste, commercial and industrial waste, construction, demolition and excavation waste, hazardous waste, agricultural waste, and waste water and sludges.

The latest report on construction, demolition and excavation waste arisings is for 2009/10:

<https://www.doeni.gov.uk/publications/construction-demolition-and-excavation-waste-arisings-use-and-disposal-northern-ireland>

Following on from the UK's agreement to revise its interpretation of 'municipal waste' to include much more commercial and industrial waste than previously; it should be noted that this report, as with all previous ones, reflects local authority collected municipal waste only.

Material Recovery Facilities

MRFs usually have more than one input source and the pro-rata assignment to each source based on their input tonnages can lead to a small over or under estimation of the actual tonnage being recovered from each individual source.

Capture Rates

Capture rates are no longer included in the body of the report but are still available in the data tables appendix. The calculations for capture rates are based on a Compositional Study undertaken in 2007-08 and may not accurately reflect the current situation. However, it is the best available estimation of the proportions of the primary waste categories contained within kerbside residual waste. Levels of uncertainty around the results of the Compositional Study are discussed in the full report.

The accuracy of these estimates is expected to decrease over time as household recycling habits continue to change.

Waste Crime

Waste crime is the unauthorised management of waste, including illegal dumping. It can be difficult to quantify the impact of such activity upon these official figures as it is not always possible to

determine the source, date and tonnage of illegally deposited waste. Where possible the extent and any implications of such activity will be communicated to users.

Rounding and Summing

It should be noted that in some instances totals may not add up due to rounding. If tonnages work out to be less than 0.5 tonnes, they will be rounded to zero.

On occasion percentages work out to be less than 0.1% or more than 99.9%. Users should be aware that in such cases, the percentage is rounded to zero or 100% respectively.

Whilst tonnages may be summed over councils and/or Waste Management Groups to give totals for higher level geographies, such totals may suffer from rounding errors when compared with any given totals.

However where fractions or proportions, such as recycling rates, waste arisings per capita etc are stated for councils or waste management groups, these indicators cannot be simply added or averaged to produce a rate for a higher level geography. Such information is often available in the data tables appendix, or otherwise may be available upon request.

Notation and Terminology

Please see the glossary (appendix 2) for clarification of key terms.

Guidance on using data

The data contained in the publication are presented on a quarterly basis. Many of the figures show seasonal variation, particularly composting, to a lesser extent recycling, and consequently overall waste arisings. It is therefore advisable that data for the current quarter be compared with both the previous quarter (to gauge the most recent direction of activity and, more importantly, the same quarter in the

previous year (to consider seasonal impact).

Care needs to be taken in interpreting the long-term trends of an annual dataset with that of a quarterly release of provisional data. The revisions that can happen to quarterly data and the balancing of tonnages across quarters could mean that different trends are observed in the provisional year to date and the finalised annual figures. The provisional quarterly figures are the best available at the time of publication, however they are subject to change following further validation activities such as audits.

If finalised figures are required by the user then the latest annual local authority collected municipal waste management report should be used, bearing in mind these figures may not necessarily reflect the situation this year. The latest annual report (2014/15) is available via the DOE website:

<https://www.doeni.gov.uk/publications/northern-ireland-local-authority-collected-municipal-waste-management-statistics-2014>

Waste Management information elsewhere in the United Kingdom and Europe

While it is our intention to direct users to waste management information elsewhere in the UK and Europe, users should be aware that local authority collected municipal waste statistics in other administrations are not always measured in a comparable manner to those in Northern Ireland. Details of waste management data published elsewhere in the UK and Europe can be found at the following links.

England

<https://www.gov.uk/government/statistics/local-authority-collected-waste-for-england-quarterly-estimates>

Scotland

<http://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/>

Wales

<http://gov.wales/statistics-and-research/local-authority-municipal-waste-management/?lang=en>

Ireland

<http://www.epa.ie/waste/municipal/>

European Union Member States

http://ec.europa.eu/eurostat/statistics-explained/index.php/Municipal_waste_statistics

The basis of the data collection across the UK using WDF is broadly consistent, however there are some minor definitional differences such as NI recycling KPIs do include material used as 'backfill' (using suitable waste material to refill an excavation instead of non-waste material) which is not directly comparable with the revised Waste Framework Directive recycling measurements.

The meetings of the WasteDataFlow Operational Group ensure a conscious effort to share waste management developments on a UK-wide basis with Northern Ireland representation on this group.

<https://www.doeni.gov.uk/search/type/publication?query=user+group+meeting>

A National Statistics Publication

National Statistics are produced to a high professional standard. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.

The UK Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics. Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods; and
- are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

The Department demonstrates its commitment to the Code of Practice by publishing a series of supporting statements related to its use of administrative data, publication strategy, confidentiality arrangements, revisions policy, customer service and complaints procedure. For details see supporting statements on the DOE statistics website <https://www.doeni.gov.uk/publications/code-practice-official-statistics-doe-supporting-statements>

For further information

For more information relating to this publication, including additional analysis, breakdowns of the data or alternative formats please contact Analytical Services Branch.

As we want to engage with users of our statistics, we invite you to feedback your comments on this publication at any time of the year. Contact details are available on the front cover of this report and in the data tables appendix.

Appendix 2: Glossary

Term	Explanation
Biodegradable waste	Any waste that is capable of undergoing anaerobic decomposition, such as food and garden waste, and paper and paperboard.
Bring site	An unmanned site with a container or a collection of containers for depositing recyclable waste.
Capture rate for household kerbside collected waste	The amount of 'available' material that is actually being collected for recycling through household kerbside collection schemes.
Civic amenity site	A manned site for depositing waste.
Clean Material Recovery Facility (MRF)	A specialised plant that receives source segregated recyclable materials (such as co-mingled or mixed dry recyclables) in order to separate and prepare them for marketing to end-user manufacturers.
Composting	An aerobic, biological process in which organic wastes, such as garden and kitchen waste, are converted into a stable granular material which can be applied to land to improve soil structure and enrich the nutrient content of the soil.
Composting rate	The percentage of waste sent for composting. It excludes waste collected for composting that was rejected at collection or at the gate of the reprocessor.
Dirty Material Recovery Facility (MRF)	A specialised plant that receives mixed municipal and/or residual wastes from other processes (such as Clean MRFs) in order to separate and prepare them for marketing to end-user manufacturers.
Dry recycling	The recycling of dry materials such as paper, card, cans, plastic bottles, mixed plastic, glass.
Dry recycling rate	The percentage of waste sent for recycling. It excludes waste collected for recycling that was rejected at collection, during sorting or at the gate of the recycling reprocessor. It includes residual waste which was diverted for recycling but excludes waste sent for preparation for reuse.
Energy recovery rate	The percentage of waste sent for energy recovery. It includes mixed residual and specific sources components.
Household waste	Includes materials (except soil, rubble and plasterboard) collected directly from households (e.g. kerbside collections) or indirectly (e.g. bring sites, civic amenity sites, collected by private and voluntary organisations not included elsewhere or street sweepings).
Kerbside	A regular collection of waste from premises.
Key Performance Indicators (KPIs)	A set of measures used to gauge performance in terms of meeting waste strategy targets.
LAC	Local Authority Collected, as in LAC municipal waste.

Term	Explanation
Landfill sites	Any areas of land in which waste is deposited. Landfill sites are often located in disused mines or quarries. In areas where they are limited or no ready-made voids exist, the practice of landraising is sometimes carried out, where waste is deposited above ground and the landscape is contoured.
Local authority collected municipal waste	Waste under the control or possession of a council.
Mixed residual waste sent for energy recovery	Combustible residual waste collected from the kerbside and civic amenity sites and processed into refuse derived fuel at material recovery facilities.
NILAS	Northern Ireland Landfill Allowance Scheme
Non household waste	Asbestos, beach cleansing, civic amenity sites waste, fly-tipped materials, gully emptyings, commercial and industrial, construction and demolition, grounds waste, highways waste, other collected waste and other.
Other household waste	Healthcare waste, bulky waste, street cleaning and other household.
Recycling	Any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It does not include energy recovery and the reprocessing into materials that are used as fuels.
Refuse Derived Fuel (RDF)	Consists largely of organic components of municipal waste (such as plastics and biodegradable waste). This can then be used in a variety of ways to generate electricity, most commonly as an additional fuel used with coal in power stations or in cement kilns.
Regular residual household waste	Household regular kerbside collection.
Residual waste	Waste that is not sent for preparing for reuse, sent for recycling or composting.
Specific streams e.g. wood	Used in the context of LAC municipal waste sent for energy recovery. It is mostly wood but also contains furniture, carpets and mattresses, mostly collected from civic amenity sites.
Waste arisings	The amount of waste collected in a given locality over a period of time.
Waste collected for disposal to landfill	Collected for disposal is residual waste that has not been sorted to separate out recyclable material from other waste before being presented to the Council for collection at various locations.

Term	Explanation
Waste from households	Not the same as 'household waste'. This is a narrower definition and includes material (except soil, rubble and plasterboard) collected only from households (e.g. kerbside collection, bring sites, civic amenity sites or community skips managed by councils).
Waste sent to landfill	The amount of waste sent to landfill. Excludes residual waste which was diverted for energy recovery, recycling or composting. Includes household waste collected for energy recovery, recycling or composting which was diverted to landfill.
Waste Transfer Note (WTN)	A note which must be created for any transfer of controlled waste. The exception to this is householders, who are not required to produce transfer notes.
WasteDataFlow	The web based system for local authority collected municipal waste data reporting by UK local authorities to government (www.wastedataflow.org).
Recycled material types	
Compostable (excluding wood)	Green waste only, green garden waste only, mixed garden and food waste, waste food only, other compostable waste (excluding wood).
Construction, Demolition and Excavation	Plasterboard, rubble and soil.
Electrical Goods	Large and small domestic appliances, cathode ray tubes, fluorescent tubes and other light bulbs, fridges and freezers, auto batteries and post consumer batteries.
Glass	Brown, clear, green and mixed glass.
Metal	Aluminium, mixed and steel cans, aluminium foil, bicycles, aerosols, gas bottles, fire extinguishers and other scrap metal.
Paper and Card	Books, card, mixed paper and card, paper, yellow pages and cardboard beverage packaging.
Plastics	PET(1), HDPE(2), PVC(3), LDPE(4), PP(5), PS(6), other plastics(7), mixed plastic bottles, and plastics.
Textiles	Textiles and footwear, footwear only, textiles only and carpets.
Unclassified	Derived category including all other recycled material collected not included in the main categories.
WEEE (Waste Electrical and Electronic Equipment)	As electrical goods above but excluding auto batteries and post consumer batteries.
Wood	Wood, chipboard and MDF, composite wood materials and wood for composting.

Appendix 3: List of Acronyms

This is a list of commonly used acronyms in this report.

arc21	Regional waste management group in Northern Ireland
ASB	Analytical Services Branch, DOE
BLACMW	Biodegradable Local Authority Collected Municipal Waste
CIWM	Chartered Institution of Wastes Management
DOE	Department of the Environment
EC	European Commission
EU	European Union
KPI	Key Performance Indicator
LAC	Local Authority Collected
LACMW	Local Authority Collected Municipal Waste
LPS	Land and Property Services
MRF	Materials Recovery Facility
NI	Northern Ireland
NIEA	Northern Ireland Environment Agency
NILAS	Northern Ireland Landfill Allowance Scheme
NISRA	Northern Ireland Statistics and Research Agency
NWRWVG	North West Regional Waste Management Group
RDF	Refuse Derived Fuel
UK	United Kingdom
WDF	WasteDataFlow
WEEE	Waste Electrical and Electronic Equipment
WRAP	Waste and Resource Action Programme