

Northern Ireland Local Authority Collected Municipal Waste Management Statistics

Annual Report 2015/16



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Key Points for Northern Ireland

- Northern Ireland's councils collected 969,157 tonnes of LAC municipal waste. This was a 1.9% increase on the 951,423 tonnes collected in 2014/15. Household waste accounted for 88.8% of total LAC municipal waste. Belfast generated the smallest amount of household waste per person at 418 kg whilst Ards & North Down recorded the largest at 547 kg per person.
- In 2015/16, 42.2% of household waste was sent for preparing for reuse, dry recycling and composting, similar to the 2014/15 rate of 42.0%. At council level, rates vary from 33.3% in Derry City & Strabane to 49.6% in Mid Ulster.
- The LAC municipal waste energy recovery rate was 17.6% in 2015/16, an increase of 2.7 percentage points on the 14.9% recorded in 2014/15. Derry City & Strabane had the highest energy recovery rate in 2015/16 at 37.2% whilst the lowest was 1.2% in Fermanagh & Omagh.
- The landfill rate for household waste recorded a new low of 39.7% in 2015/16, a drop of 3 percentage points on the 2014/15 rate (42.7%) and a fall from 72.3% in 2006/07. There were 218,898 tonnes of BLACMW sent to landfill during 2015/16, 4.5% lower than the 229,099 tonnes sent in 2014/15. However, in both years a similar proportion of allowance was used (around 79%).

Reader Information

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

Purpose

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

Next Updates

- Provisional figures for July to September 2016 will be available on 26 January 2017.
- The scheduled dates for all upcoming publications are available from the GOV.UK statistics release calendar: <https://www.gov.uk/government/statistics>

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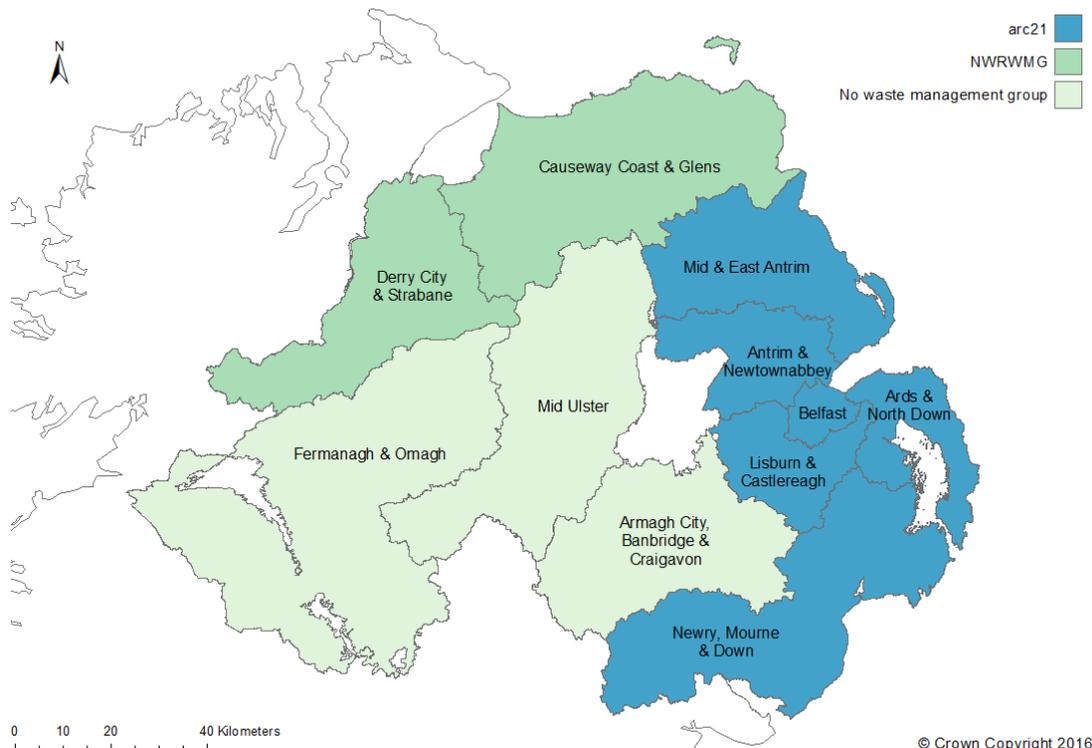
Introduction

This report presents finalised and validated information on the quantities of local authority collected (LAC) municipal waste collected and managed in Northern Ireland over the 2015/16 financial year, as well as trend data over previous years. It provides information on the quantities and rates of local authority collected municipal waste arising, sent for preparing for reuse, 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 first annual release on an 11 council basis. Five quarterly reports presenting provisional estimates for local authority collected municipal waste management statistics have already been published on an 11 council basis (four quarters for 2015/16 and quarter 1 of 2016/17). 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



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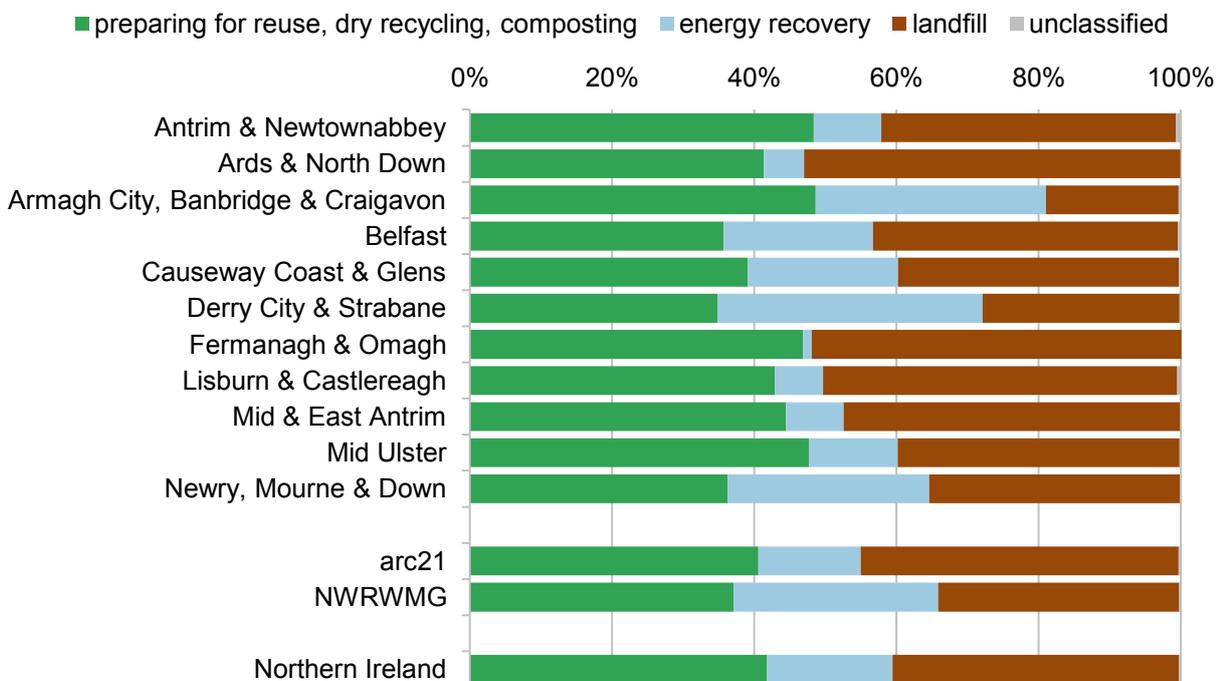
Overview

The 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.

Figure 2: LAC municipal waste preparing for reuse, dry recycling, composting, energy recovery and landfill rates by council and waste management group Northern Ireland, 2015/16



At the Northern Ireland level, 41.8% of LAC municipal waste was sent for preparing for reuse, dry recycling and composting during 2015/16. Energy recovery accounted for 17.6% whilst 40.3% was sent to landfill. This left 0.3% 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.

This was similar to the 41.4% of LAC municipal waste sent for preparing for reuse, dry recycling and composting in 2014/15. The energy recovery rate has increased by 2.7 percentage points, from 14.9% in 2014/15 and the landfill rate has fallen by 3.1 percentage points.

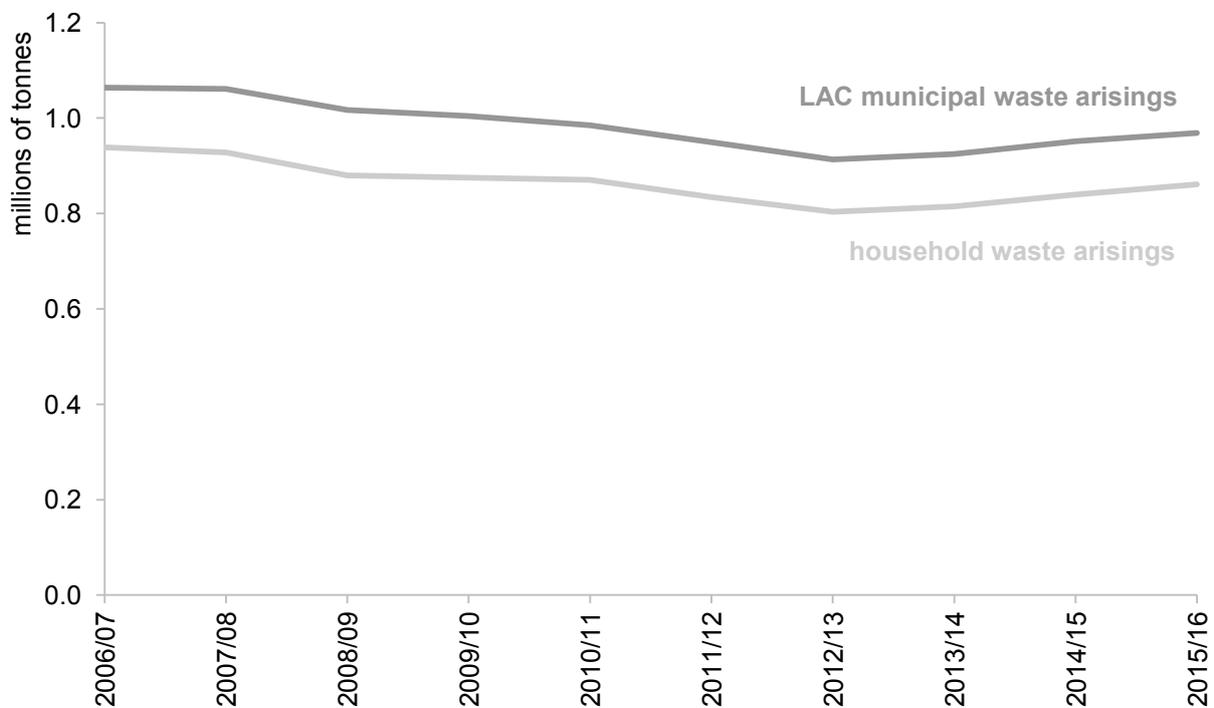
Waste Arisings

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. In 2015/16, Northern Ireland's councils collected 969,157 tonnes of LAC municipal waste. This was a 1.9% increase on the 951,423 tonnes collected in 2014/15.

Since 2006/07 household waste has accounted for 86-89% of total LAC municipal waste. In 2015/16 household waste accounted for 88.8%. 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 11.2% was non-household waste.

Figure 3: Waste arisings

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

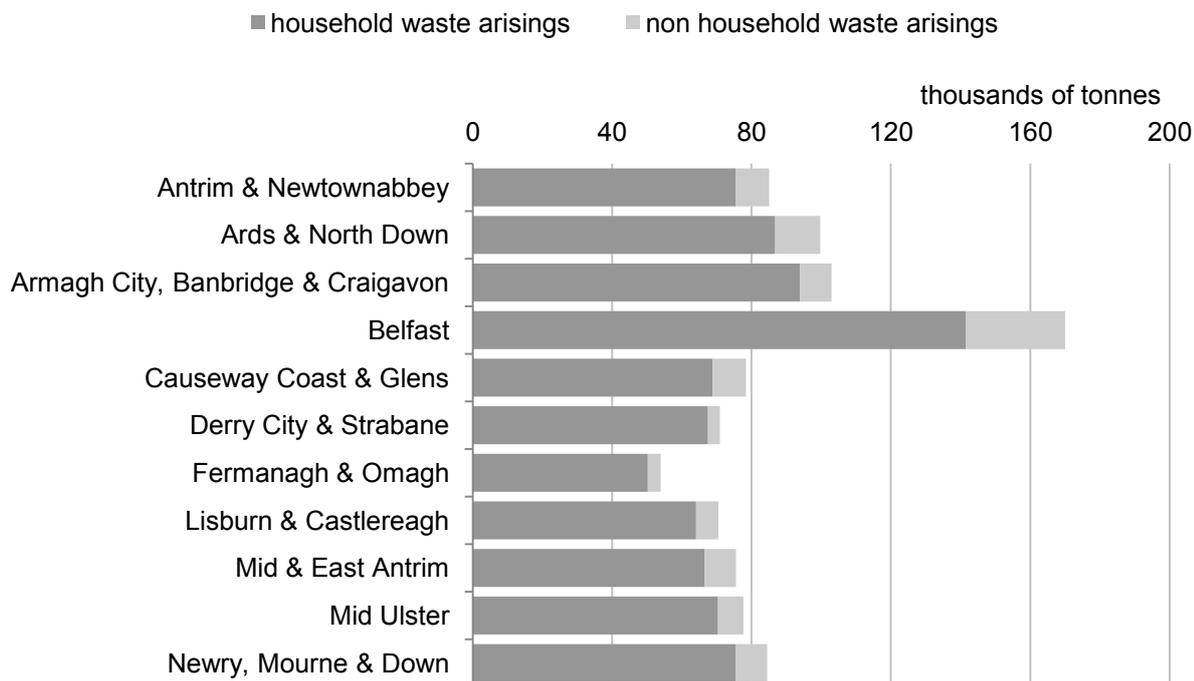


The longer term trend has been a reduction in LAC municipal waste arisings from 1,064,090 tonnes in 2006/07 to a low of 913,546 in 2012/13, a 14.1% decrease. Since then arisings have increased by 6.1% over the last three years.

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, 2015/16, KPI (j)

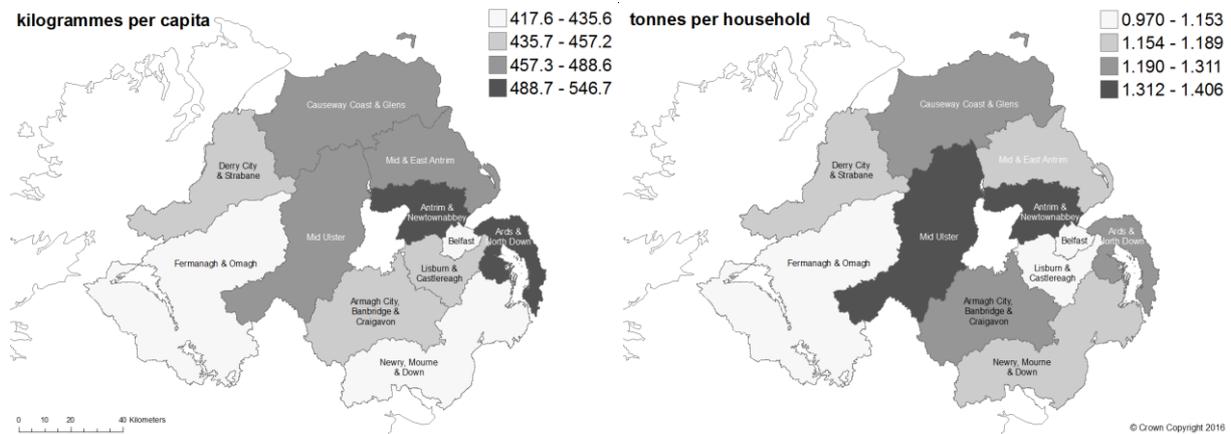


Note: The NI and waste management group figures are not shown on this chart as their larger waste arisings distort the scale and make it difficult to distinguish the differences between councils. All figures are available from the data tables appendix.

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 in 2015/16 with 169,964 tonnes. This was 18% of total NI LAC waste arisings, the same as 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 26%, likely reflecting the concentration of businesses in this area. Fermanagh & Omagh District Council had the lowest arisings in 2015/16 with 53,963 tonnes collected. This represented 6% of total NI arisings during the period and again was the same as 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 465 kilogrammes (kg) of household waste collected per capita (per head of population) and 1.179 tonnes per household during 2015/16. These were increases on the 456 kg collected per person and 1.158 tonnes per household in 2014/15.

Figure 5: Household waste arisings per capita and per household by council Northern Ireland, 2015/16, KPIs (p) and (h)



Belfast generated the smallest amount of household waste per person at 418 kg in 2015/16. The largest quantity was recorded in Ards & North Down at 547kg 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 0.970 tonnes per household. The largest quantity per household was recorded in Mid Ulster at 1.406 tonnes per household.

The 26 councils covered by previous reports were reorganised into 11 new councils from 1 April 2015. This is the first annual release of waste data collected on an 11 council basis so there are no 11 council data from last year to compare this year's figures against. It will be possible to begin to make comparisons over time for councils from the 2016/17 report, scheduled for publication in November 2017. Comparisons between the 11 councils can be made in the quarterly provisional reports from April to June 2016 onwards. The April to June 2016 quarterly report was published on 20 October 2016.

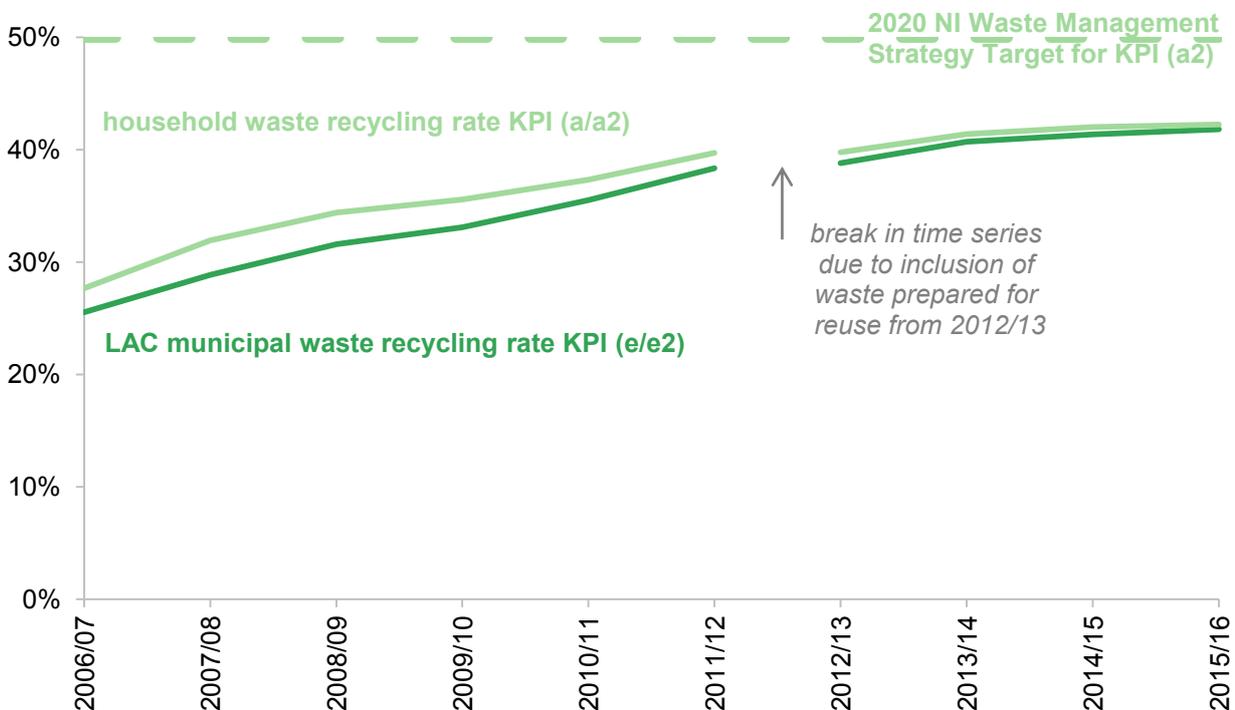
The arisings figures can be found in Tables 1 and 2 of the data tables appendix. The per capita and per household figures can be found in Table 17. All figures are also available from the time series dataset.

<https://www.daera-ni.gov.uk/publications/northern-ireland-local-authority-collected-municipal-waste-management-statistics-2015>

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.

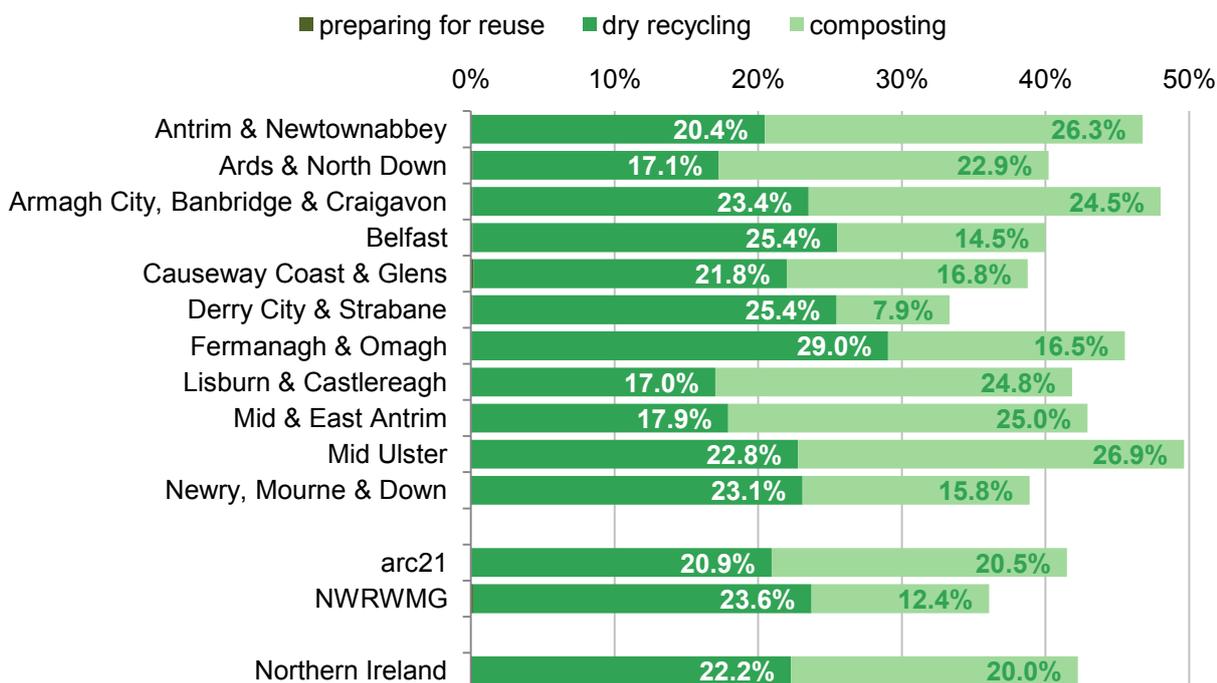
Figure 6: Waste sent for preparing for reuse, dry recycling and composting
Northern Ireland, 2006/07 to 2015/16, KPIs (a), (a2), (e), (e2)



In 2015/16, the tonnage of LAC municipal waste sent for preparing for reuse, dry recycling and composting (referred to as 'recycling' for the rest of this section) reached a record high at 405,414 tonnes. The LAC municipal waste recycling rate was 41.8%. This was similar to the 41.4% recycling rate recorded in 2014/15 although the tonnage sent for recycling increased by 3.0%, from 393,740 tonnes.

The household waste recycling rate was 42.2% in 2015/16. Again, this was similar to the 2014/15 recycling rate of 42.0% despite the tonnage sent for recycling recording a new high of 363,647 tonnes. The proportion of household waste sent for preparing for reuse was 0.1%, dry recycling made up 22.2% and composting was 20.0%. During 2014/15, the equivalent rates for preparing for reuse, dry recycling and composting were similar at 0.1%, 21.8% and 20.1%.

Figure 7: Household waste preparing for reuse, dry recycling and composting rate by council and waste management group
Northern Ireland, 2015/16, KPI (a2)



The lowest recycling rate was recorded in Derry City & Strabane at 33.3%. Just over one quarter (25.4%) of their waste was sent for dry recycling whilst 7.9% was sent for composting and 0.1% was sent for preparing for reuse. Mid Ulster had the highest recycling rate at 49.6% with 22.8% sent for dry recycling and 26.9% sent for composting.

There was considerable variation between dry recycling and composting rates with 6 councils reporting a higher composting rate than dry recycling and the remaining 5 having higher dry recycling rates. Fermanagh & Omagh recorded the highest dry recycling rate at 29.0%. The lowest dry recycling rate was 17.0% in Lisburn & Castlereagh. This was close to the 17.1% and 17.9% dry recycling rates recorded in Ards & North Down and Mid & East Antrim. 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 first time in April to June 2015. 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 15 and 15a of the data tables appendix and in the time series dataset. The waste from households figures are available in Table 22 and in the time series dataset.

<https://www.daera-ni.gov.uk/publications/northern-ireland-local-authority-collected-municipal-waste-management-statistics-2015>

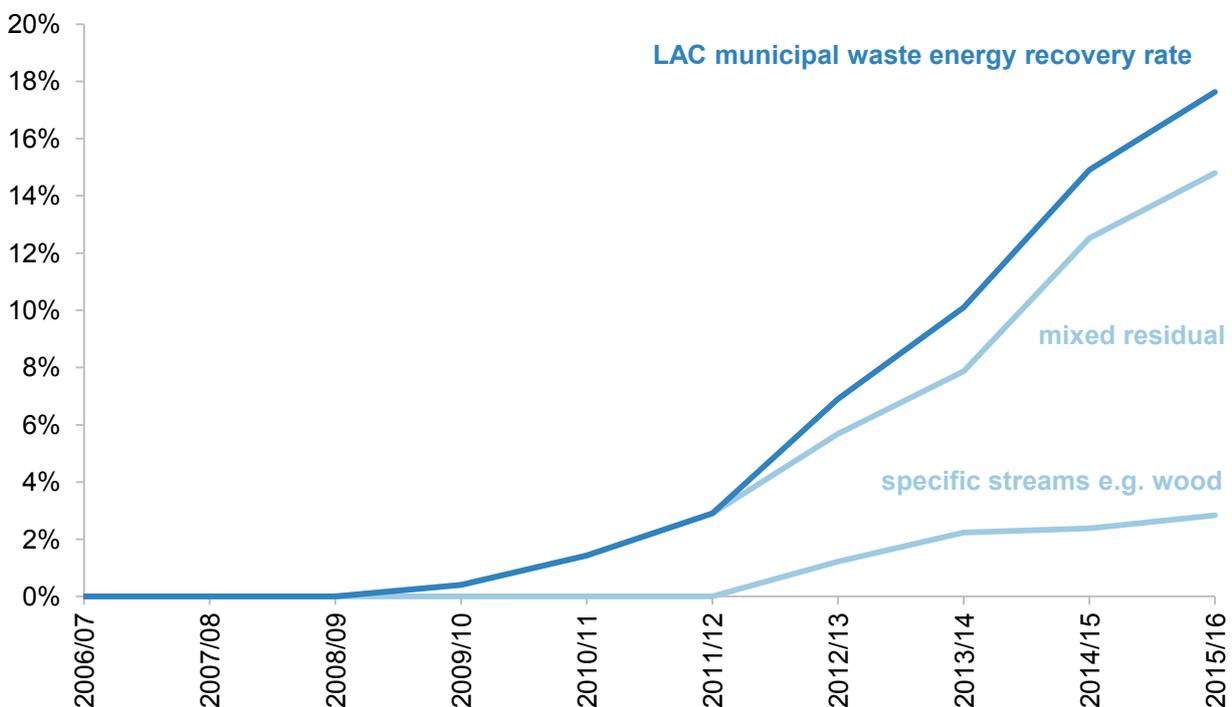
Energy recovery

This annual 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.

In 2015/16, 170,913 tonnes of LAC municipal waste arisings was sent for energy recovery. This gave a LAC municipal waste energy recovery rate of 17.6%, 2.7 percentage points higher than the 14.9% recorded in 2014/15. 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, 2006/07 to 2015/16

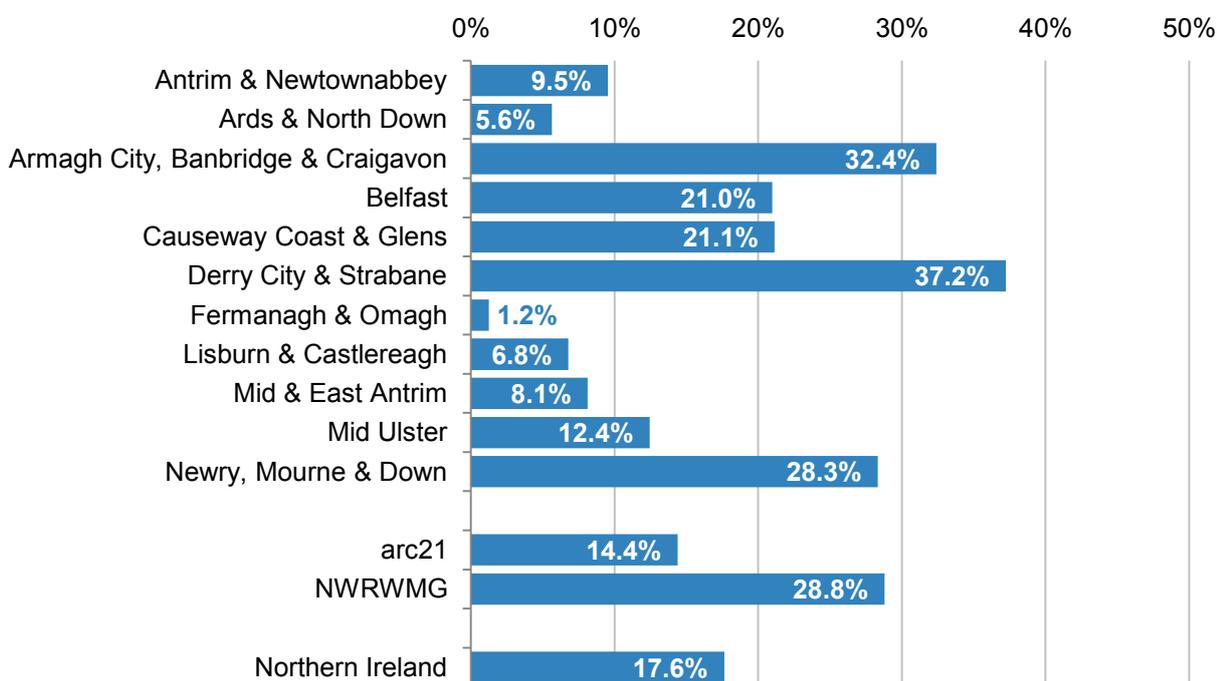


There was zero, or very small quantities, of LAC municipal waste sent for energy recovery before 2009/10. Strong growth followed from 2010/11 to 2015/16 with the energy recovery rate increasing from 0.4% in 2009/10 to 17.6% in 2015/16. Most of the growth has been driven by mixed residual LAC municipal 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 by council and waste management group

Northern Ireland, 2015/16



The NWRWMG had an energy recovery rate of 28.8%, double that of arc21 at 14.4% and significantly higher than the overall Northern Ireland rate of 17.6%.

Derry City & Strabane had the highest energy recovery rate in 2015/16 at 37.2%. The lowest energy recovery rate was 1.2% for Fermanagh & Omagh. For all councils except Antrim & Newtownabbey, Ards & North Down and Fermanagh & Omagh, energy recovery for mixed residual waste accounted for a greater proportion of their total energy recovery than specific streams such as wood. Antrim & Newtownabbey had the highest energy recovery rate for specific streams at 6.0% whilst Derry City & Strabane had the highest energy recovery rate for mixed residual waste at 33.1%.

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 3a of the data tables appendix and in the time series dataset.

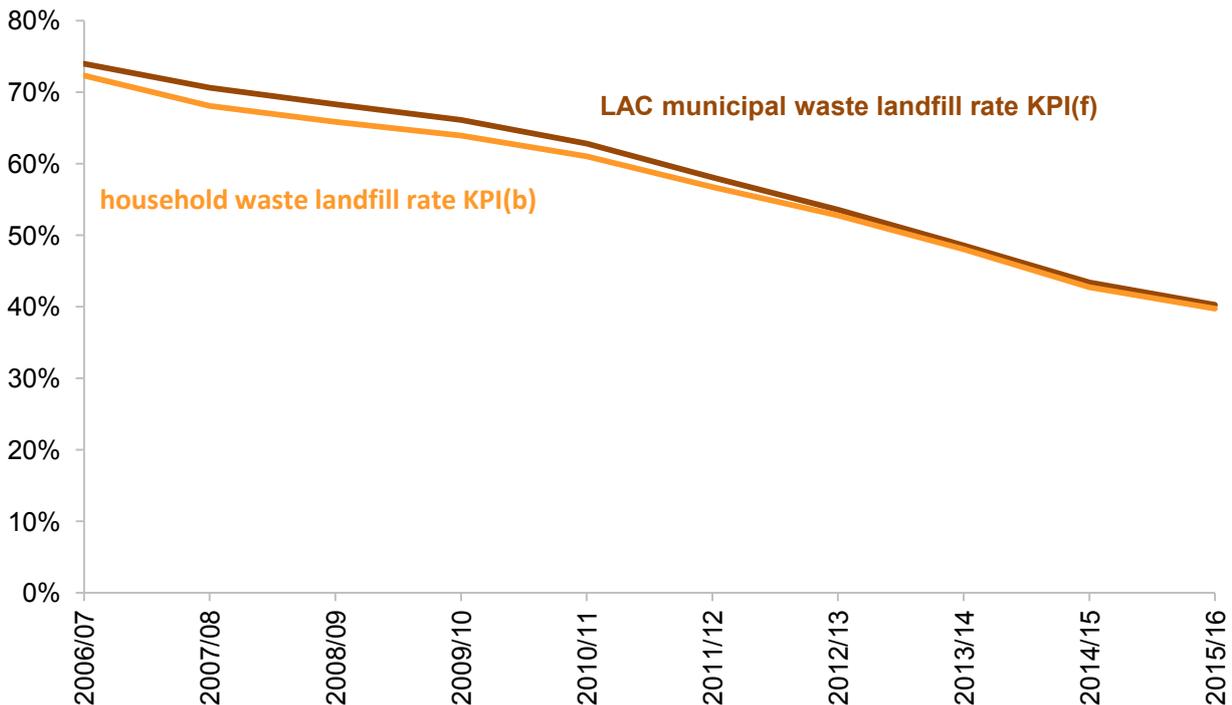
<https://www.daera-ni.gov.uk/publications/northern-ireland-local-authority-collected-municipal-waste-management-statistics-2015>

Landfill

The quantity of LAC municipal waste sent to landfill decreased by 5.5% from 412,755 to 390,256 tonnes between 2014/15 and 2015/16. This gave a landfill rate of 40.3% for 2015/16, 3.1 percentage points lower than the 43.4% recorded in 2014/15 and the lowest ever recorded. Similarly, the landfill rate for household waste has recorded a new low of 39.7% in 2015/16, a drop of 3 percentage points on the 2014/15 rate of 42.7% and a fall from a high of 72.3% in 2006/07.

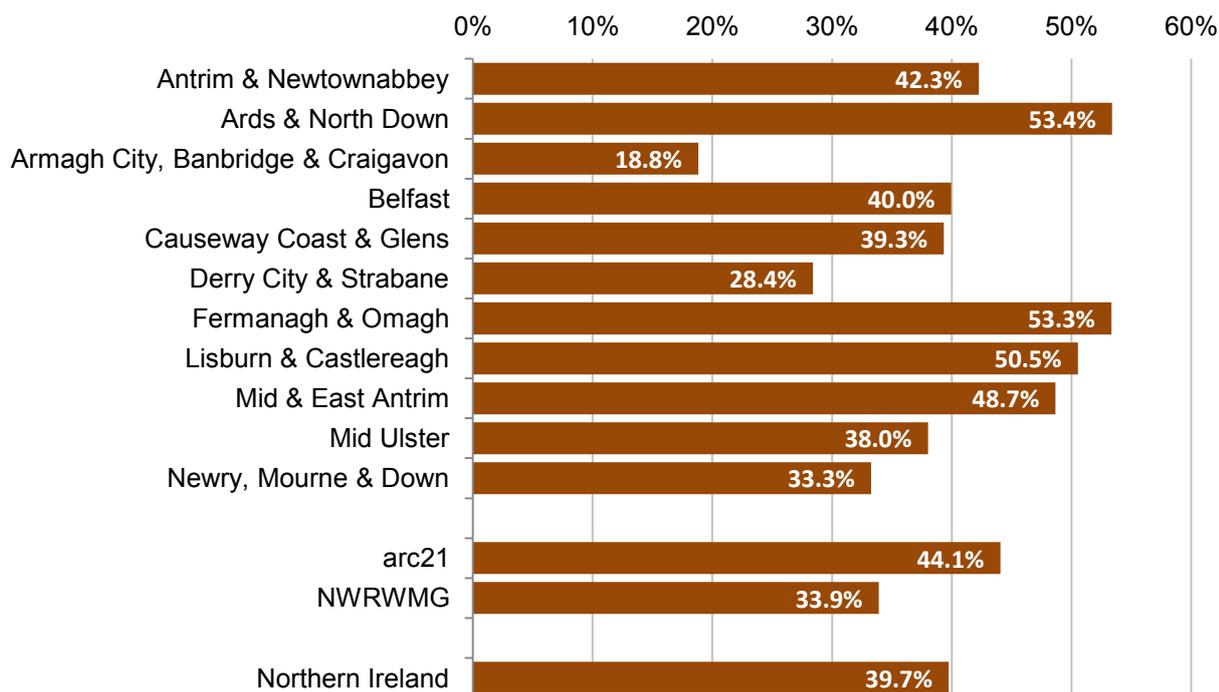
Figure 10: Waste sent to landfill

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



Ards & North Down and Fermanagh & Omagh had the highest household waste landfill rates at 53.4% and 53.3%. The lowest landfill rate was recorded in Armagh City, Banbridge & Craigavon at 18.8%, less than half of the overall Northern Ireland rate. The NWRWMMG had a landfill rate of 33.9%, 5.8 percentage lower than the NI rate. Arc21's landfill rate was higher than the NI rate at 44.1%.

Figure 11: Household waste landfilled by council and waste management group
Northern Ireland, 2015/16, 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 3a of the data tables appendix and in the time series dataset.

<https://www.daera-ni.gov.uk/publications/northern-ireland-local-authority-collected-municipal-waste-management-statistics-2015>

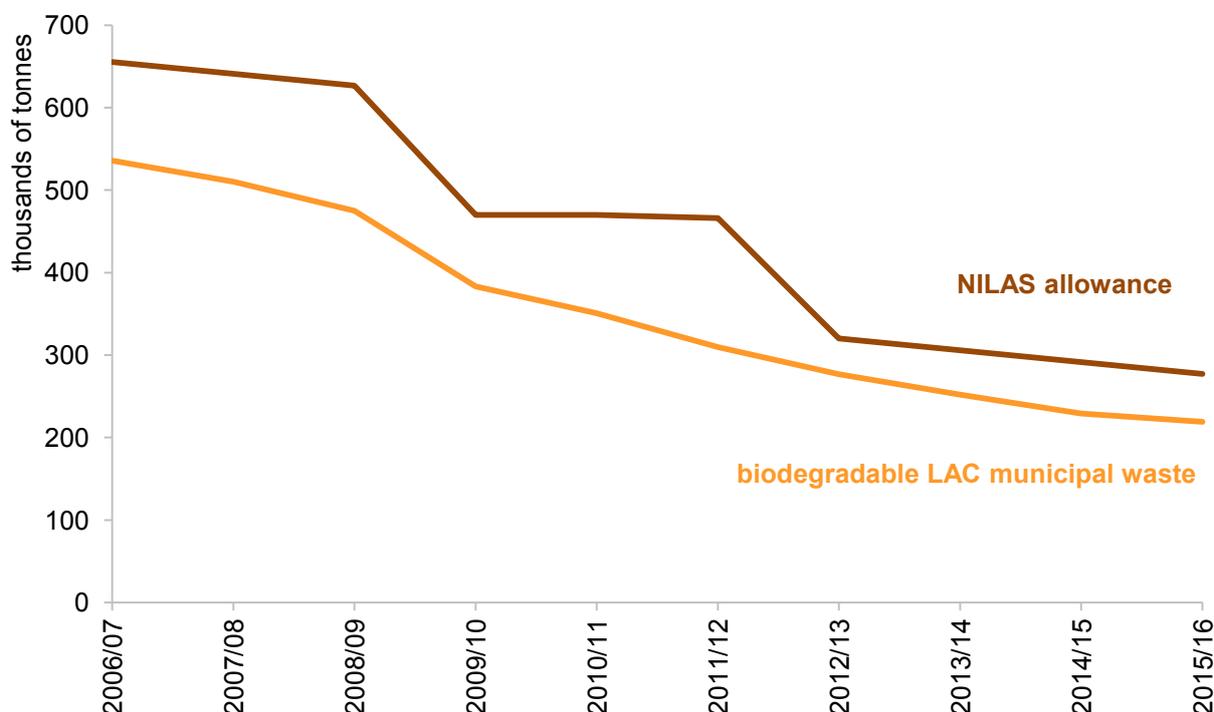
Biodegradable local authority collected municipal waste to landfill

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 these finalised annual figures. More information on the NILAS regulations can be found on the DAERA website:

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

Figure 12: Biodegradable LAC municipal waste sent to landfill
Northern Ireland, 2006/07 to 2015/16, KPI (g)



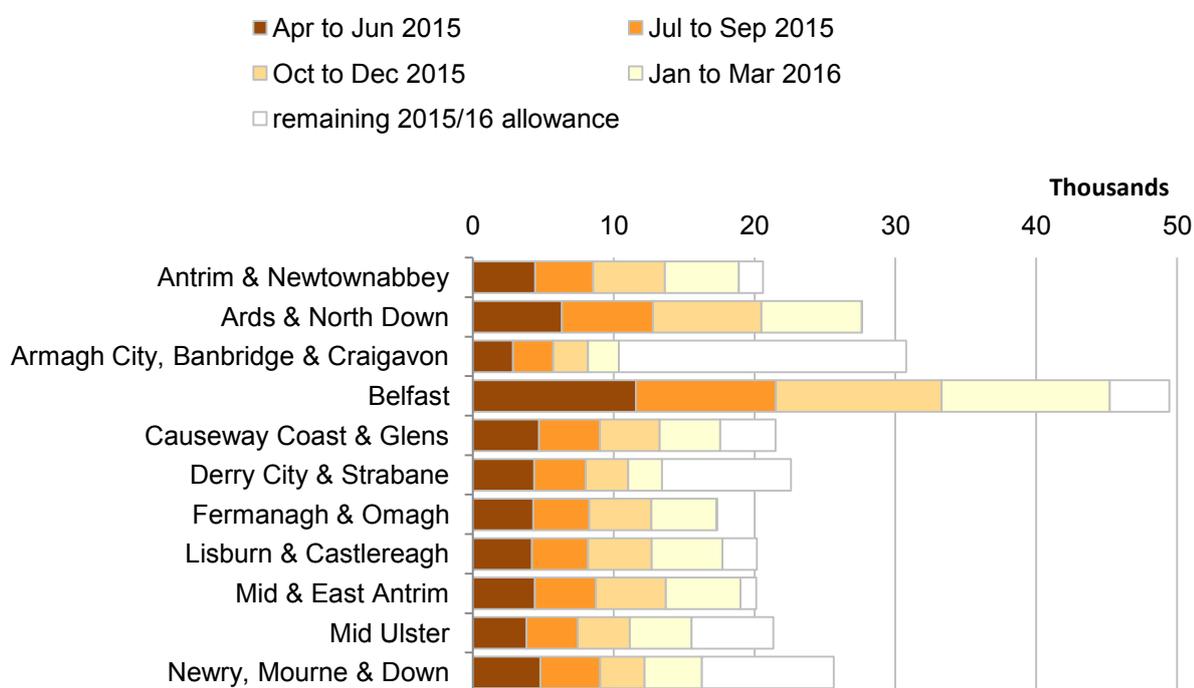
There were 218,898 tonnes of BLACMW sent to landfill during 2015/16. This was 4.5% lower than the 229,099 tonnes sent in 2014/15, although in both years a similar proportion of allowance was used at around 79%. The 2015/16 NILAS allowance (277,142 tonnes) was 4.9% lower than the 2014/15 allowance (291,428 tonnes).

The amount of BLACMW sent to landfill in 2015/16 has fallen by 59.1% compared with the amount sent in 2006/07. Whilst the tonnage of biodegradable LAC municipal waste being sent to landfill is decreasing in line with the allocation, the proportion of the allocation used has remained similar at around 75-82%, with the exception of 2011/12 and 2012/13 when 66% and 86% of the allocation was used.

Councils within arc21 used 88.5% of their total allocation whilst councils within NWRWMG used 70.3% of their allocation. 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 13: Biodegradable LAC municipal waste landfilled by council and waste management group

Northern Ireland, 2015/16, 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 allowance used after transfers. Armagh, Banbridge & Craigavon used the lowest share of its annual allocation at 33.7%. Ards & North Down used 99.9% of their 2015/16 allowance after transfers followed closely by Fermanagh & Omagh with 99.6%.

This data can be found in Table 20 of the data tables appendix and in the time series dataset.

<https://www.daera-ni.gov.uk/publications/northern-ireland-local-authority-collected-municipal-waste-management-statistics-2015>

Northern Ireland Key Performance Indicators 2015/16

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 table below has been included to help users find a specific KPI value or location in the report or appendix. Previously used key performance indicators KPIs (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).

KPI	Performance during 2015/16	Section in report and Appendix Table
a2	42.2% of household waste sent for recycling (including composting and preparing for reuse)	Recycling (pages 8-9) Appendix table 15a
b	39.7% of household waste landfilled	Landfill (pages 12-13) Appendix table 15a
e2	41.8% of LAC municipal waste sent for recycling (including composting and preparing for reuse)	Recycling (pages 8-9) Appendix table 3a
f	40.3% of LAC municipal waste landfilled	Landfill (pages 12-13) Appendix table 3a
g	218,898 tonnes of biodegradable LAC municipal waste landfilled	Biodegradable landfill (pages 14-15) Appendix table 20
h	1.179 tonnes of household waste generated per household	Waste arisings (pages 5-7) Appendix table 17
j	969,157 tonnes of LAC municipal waste generated	Waste arisings (pages 5-7) Appendix table 1
m	See Tables 21i and 21ii for capture rates by primary waste category	Appendix tables 21i and 21ii
n	1.9% increase in LAC municipal waste generated	Waste arisings (pages 5-7) Appendix table 2
p	465 kilogrammes of household waste generated per capita	Waste arisings (pages 5-7) Appendix table 17

The fully validated figures that are published in the annual report have undergone audit by the Northern Ireland Environment Agency (NIEA) and further validation by Statistics and Analytical Services Branch (SASB) in the Department of Agriculture, Environment and Rural Affairs (DAERA). 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 table below outlines the differences between finalised data in this annual report and the provisional 2015/16 figures presented in the data tables appendix for the January to March 2016 quarterly report.

<https://www.daera-ni.gov.uk/sites/default/files/publications/daera/lac-municipal-waste-q4-2015-16-appendix.xlsx> (Table 18)

Comparison of provisional and final figures for 2015/16 key performance indicators

KPI	Definition	2015/16 provisional	2015/16 finalised	difference
a2	Percentage of household waste sent for recycling (including composting and preparing for reuse)	42.4%	42.2%	-0.12 percentage points
b	Percentage of household waste sent to landfill	39.6%	39.7%	0.17 percentage points
e2	Percentage of LAC municipal waste sent for recycling (including composting and preparing for reuse)	42.0%	41.8%	-0.18 percentage points
f	Percentage of LAC municipal waste landfilled	40.0%	40.3%	0.22 percentage points
g	Reported biodegradable LAC municipal waste sent to landfill	218,542	218,898	356 tonnes (0.16%)
h	Annual household waste collected per household	1.178	1.179	0.001 tonnes (0.06%)
j	LAC municipal waste arisings	966,192	969,157	2,965 tonnes (0.31%)
m	Capture rates	See Tables 21i and 21ii for capture rates by primary waste category		
n	LAC municipal waste arisings growth rate	1.6%	1.9%	0.31 percentage points
p	Annual household waste collected per capita	467	465	2.5 kg per person (0.54%)

The differences between provisional and final figures are small but arise due to the additional validations carried out before the finalisation of this annual publication.

Progress against targets

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.

Overview of progress against targets

Indicator	Source	Progress/Outcome
To achieve a recycling rate of 45% (including preparing for re-use) of household waste by 2015	Targets 1, 2 & 3 on p39 of the revised Northern Ireland Waste Management Strategy https://www.daera-ni.gov.uk/publications/delivering-resource-efficiency-northern-ireland-waste-management-strategy	KPI (a2) Target not met in 2014/15 - 42.0% Target not met in 2015/16 - 42.2%
To achieve a recycling rate of 50% (including preparing for re-use) of household waste by 2020		KPI (a2) Progress in 2015/16 - 42.2%
To achieve a recycling rate of 60% (including preparing for re-use) of LACMW by 2020		KPI (e2) Progress in 2015/16 - 41.8%
To landfill no more than 277,142 tonnes of biodegradable LACMW by the end of March 2016.	Article 3 of The Landfill (Scheme Year and Maximum Landfill Amount) Regulations 2004 http://www.legislation.gov.uk/uksi/2004/1936/regulation/3/made	KPI (g) Target met in 2015/16 - 218,898 tonnes (79% of allowance used)
To landfill no more than 220,000 tonnes of biodegradable LACMW by the end of March 2020.		Progress in 2015/16 - 218,898 tonnes (79% of allowance used)

Appendix 1: User Guidance

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

There were a number of major changes to these reports during the 2015/16 reporting year. 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 annual report for the first time. This report has also been updated using feedback from the user consultation in summer 2016 and from NISRA's peer review group.

Description of data

Local authority collected (LAC) municipal waste data for Northern Ireland. This is municipal waste which is collected under arrangements made by a district 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 performance against targets is considered in the *Progress against targets* section.

The revised Northern Ireland 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.daera-ni.gov.uk/articles/waste-management-strategy>

The draft Programme for Government Framework 2016-2021 contains 'percentage of household waste that is recycled or composted' as a measure for indicator 36: increase household waste recycling. The second consultation on this framework opened on 28 October 2016 and will close on 23 December 2016.

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.

The 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/ciwm/knowledge/landfill-directive.aspx>

This 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 Agriculture, Environment and Rural Affairs (DAERA) 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, offering 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 DAERA 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 readily 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.

Several changes to this report were proposed and a user consultation exercise was carried out from 30 June to 16 September 2016. Some of the changes were a necessary consequence of the re-organisation 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 SASB website <https://www.daera-ni.gov.uk/consultations/proposed-changes-northern-ireland-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). This change has been backdated to include data from 2012/13 onwards and

allows comparisons across time to be made for these KPIs.

The difference this makes to the quantity of waste recycled is small. Across the four quarters of 2015/16 this change added on average 170 tonnes of waste sent for preparing for reuse to the recycling total per quarter. This added around 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 22. 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 revised Waste Management Strategy, 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.

Analysis using 2015/16 data has shown that the 'waste from households' rate is, on average, 0.4 percentage points lower than the 'household waste' recycling rate at the Northern Ireland level. However, the difference between these rates varies across councils and quarters. The range of this difference goes from the 'waste from households' rate being 2.1 percentage points higher than the 'household waste' rate to being 3.6 percentage points lower. The time series file allows the difference in these rates to be compared over quarters and across councils.

Energy Recovery Data

In response to a user need raised during consultations in summer 2015 and 2016, energy recovery figures have been added to the 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 2015 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 from April 2016. Note these household figures do not include caravans. 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 dataset can be accessed from the LPS website.

<https://www.finance-ni.gov.uk/topics/statistics-and-research/housing-stock-statistics>

Data Quality

The data are final and are based on, but supersede, previously published data from the four quarterly returns for the financial year. The data download from WDF were completed on 11 November 2016. At that time, all the district 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 district councils in Northern Ireland at the end of the 2015/16 financial year.

The fully validated figures that are published in this annual report have undergone audit by Northern Ireland Environment Agency (NIEA) and further validation by Statistics and Analytical Services Branch (SASB) beyond that which is done on a quarterly basis. The annual validation acts as a check that all issues raised at the quarterly validation stages 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.

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 Statistics and Analytical Services Branch (SASB). 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 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.

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 year 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.daera-ni.gov.uk/publications/construction->

[demolition-and-excavation-waste-arising-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.

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.

NILAS allowances

Under the NILAS regulations district 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 district council may transfer allowances to other district councils in order to ensure that each district council does not exceed the amount of BLACMW it is permitted to send to landfill. Thus the councils with lower percentage utilisations after transfers are not necessarily better performers in terms of BLACMW sent to landfill as any council which has transferred allowances to other councils will show a higher percentage utilisation than would be expected. It should be noted that a number of transfers occurred in the 2015/16 scheme year. The following councils transferred allowances to another council: Lisburn & Castlereagh, Belfast, Mid & East Antrim, Newry, Mourne & Down and Antrim & Newtownabbey. For more information on the NILAS regulations please see the following link

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

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 to any given totals.

However where fractions or proportions, such as recycling rates, waste arisings

per capita etc. are stated for councils and / or Waste Management Groups, these indicators cannot be simply added or averaged to produce a rate for a higher level geography. Such information may be available on request.

Notation and Terminology

Please refer to the glossary (appendix 2) for further clarification of key terms.

Guidance on using data

All figures in the report and the accompanying Excel tables are annual figures and refer to the stated period. These annual figures are the final, validated figures for the year and supersede those figures published in the quarterly reports for the period.

Please note that any comparisons with prior year use the final validated figures as published in the annual report for that period. Very small increases or decreases in figures (<0.5% or <0.5 percentage points) are not highlighted in the commentary and should be interpreted with care.

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 in the UK and Europe can be found at the following links.

England

<https://www.gov.uk/government/collections/waste-and-recycling-statistics>

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.daera-ni.gov.uk/publications/waste-data-flow-northern-ireland-user-group-meeting-2012>

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 further 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 the statistics charter on the DAERA statistics website <https://www.daera-ni.gov.uk/publications/daeras-statistics-charter>

For further information

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

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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.
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.
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.
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.

Term	Explanation
Local authority collected municipal waste	Waste which is collected under arrangements made by a district council.
Mixed Dry Recyclables	Waste streams intended for recycling found together with each other but separately from other waste.
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 collected for which the primary intention is disposal i.e. not preparation for reuse nor recycling nor composting nor energy recovery
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
BLACMW	Biodegradable Local Authority Collected Municipal Waste
CIWM	Chartered Institution of Wastes Management
DAERA	Department of Agriculture, Environment and Rural Affairs
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
MDR	Mixed Dry Recyclables
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
NWRWGM	North West Regional Waste Management Group
RDF	Refuse Derived Fuel
SASB	Statistics and Analytical Services Branch, DAERA
UK	United Kingdom
WDF	WasteDataFlow
WEEE	Waste Electrical and Electronic Equipment
WRAP	Waste and Resource Action Programme