Report on the Landfill Allowances Scheme (LAS) Wales 2019-20

Report No: 15

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- Securing our data and information;
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Report series: Landfill Allowances Scheme

Report number: 15

Publication date: 26th November 2020

Contract number: N/A

Contractor: N/A

Contract Manager: N/A

Title: **Report on the Landfill Allowances Scheme (LAS) Wales 2019-20**

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Peer Reviewer(s) Richard Cardwell

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Restrictions: Restricted until published (Official Statistics Release)

Distribution List (core)

NRW Library, Bangor 2

National Library of Wales 1

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Natural England Library (Electronic Only) 1

Distribution List (others)

Welsh Government Waste Policy, Cathays Park, Cardiff

StatsWales, Cathays Park, Cardiff

Recommended citation for this volume:

J.Fry.2019-20.Report on the Landfill Allowances Scheme (LAS) Wales 2019-20. Report No: 15 [16]pp, Natural Resources Wales

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Executive summary

This report covers the fifteenth full year, 1st April 2019 to 31st March 2020, of the Landfill Allowances Scheme (LAS) in Wales. The results presented in this report are final. The purpose of the scheme is to ensure diversion of Welsh local authority collected biodegradable municipal waste (BMW) from landfill. Welsh Government sets limits on the amount of BMW waste that local authorities in Wales can landfill. Natural Resources Wales is responsible for reconciling the allowances available to each local authority with the amount of BMW that they have sent to landfill.

A data quality issue has been identified with the formula for estimating the proportion of biodegradable waste in tonnages landfilled. Annex 1 provides important summary information that requires consideration alongside the annual results.

Welsh local authorities sent 73,294[1] tonnes of BMW to landfill in 2019/20 compared to an overall Wales allowance of 330,000 tonnes. This was 78 per cent less (256,706 tonnes) than the allowance. All twenty-two local authorities achieved their individual allocated allowance.

Looking at individual local authority performance for 2019/20, Blaenau Gwent, Cardiff, Denbighshire, Flintshire, Isle of Anglesey, Merthyr Tydfil, Monmouthshire, Newport, Torfaen, Vale of Glamorgan and Wrexham used less than 10 per cent of their allowances, while Swansea used over 80 per cent of its allowance.

2019-20 is the last scheme year in which Local Authorities in Wales have been allocated landfill allowances. Local Authorities in Wales have reduced the amount of BMW sent to landfill by 91 per cent (778,195 tonnes[2]) since the first full year of the scheme in 2005/06.

Disposal, which includes landfill, is at the bottom of the waste hierarchy and is the least sustainable management of our waste. Reducing the amount of BMW waste going to landfill also helps to cut greenhouse gas emissions, preventing the production and release of methane into the air from landfill sites. This is important for reducing the impact of climate change because methane is twenty five times more powerful than carbon dioxide as a greenhouse gas.

[1] Out of a total of 1,512,101 tonnes of municipal solid waste collected by Welsh local authorities
[2] 851,489 tonnes of BMW was sent to landfill in 2005/06

Background

The Landfill Allowances Scheme (LAS) Wales was established through the Landfill Allowances Scheme (Wales) Regulations 2004. The purpose of the scheme is to ensure diversion of Welsh local authority collected biodegradable municipal waste (BMW) from landfill.

Welsh Government sets limits on the amount of BMW waste that local authorities in Wales can landfill. Natural Resources Wales is the Monitoring Authority for the scheme and has the duty to report performance against individual local authorities' annual allowance allocations and the collective total for Wales. Natural Resources Wales is responsible for reconciling the allowances available to each local authority with the amount of BMW that they have sent to landfill. Natural Resources Wales calculate the amount of BMW sent to landfill using a mass balance approach .

The LAS Regulations also state that the amount of biodegradable waste local authorities collect should be 61% of the total collected municipal waste. The Welsh Government has since reviewed the biodegradability of municipal waste and concluded that this figure is still appropriate.

Within five months of the end of the scheme year, Natural Resources Wales must determine the amount of BMW sent to landfill by each local authority and provide Welsh Government with the annual reconciled data. The Welsh Local Government Association (WLGA) and local authorities are consulted on the data and the final report is published on the Natural Resources Wales website, which acts as the Landfill Allowances register.

Any local authority that exceeds its allowance allocation is reported to the Welsh Government and is liable to financial penalties. The Welsh Government must establish and maintain a penalties register containing details of any such liabilities.

More information relating to the allocation of allowances can be found in the Welsh Government document entitled 'The Landfill Allowance Scheme: Allocation of Allowances 2009-2020'.

Validation – Monitoring Authority

The LAS scheme year runs from April 1st to March 31st. Natural Resources Wales use a two stage quarterly process to audit the data after submission into WasteDataFlow[3] (WDF). Stage one is a desktop audit of all the data submitted by local authorities. Stage two is a validation of WDF using landfill site returns. In 2012 Natural Resources Wales also began quarterly validation of end destination data for the statutory local authority recovery targets. This consists of a desktop audit based on the quantity of material reported as recovered each scheme year.

Table 1 shows the figures for the amount of landfilled municipal waste validated by Natural Resources Wales in 2019/20. The results show the original and final discrepancy percentages between the two datasets before and after the validation. In 2019/20 there

[3] Data entry and submission is reported via an online reporting tool (WasteDataFlow) and is split into a series of levels, from 0 (data entry) to 40 (Welsh Government). A local authority submits data to Natural Resources Wales for validation at Level 30.

was a 6.3 per cent (or 7,101 tonnes) discrepancy between the figures after validation. This is more than the discrepancy of 1.5 per cent in 2018/19. The overall final discrepancy is well within the 10 per cent discrepancy target set by the Welsh Government. This is also a big improvement compared to the original discrepancies in each quarter of the year before validation.

Of the 112,243 tonnes validated by Natural Resources Wales, 92,451 tonnes were sent to landfills in Wales and 13,225 tonnes were sent to landfills in England. The remainder has been landfilled after energy from waste treatment outside of the UK. This waste has zero per cent biodegradability.

After undertaking 88 checks for the local authorities throughout the scheme year, there are eight that remain over a 10 per cent or 100 tonne discrepancy. The causes of discrepancies between the two datasets include:

- landfills report site returns using The List of Waste (or European Waste Catalogues), whilst local authorities report by material type in WDF. These different reporting systems cause issues when comparing and also when distinguishing municipal waste as defined under the LAS Regulations;
- private contractors may take non-local authority collected municipal waste and non-municipal waste to landfill in the same vehicles they use to collect local authority collected municipal waste. It is therefore difficult to accurately calculate the amount of local authority collected municipal waste received at the landfill site; or
- issues with stockpiling and/or apportioning municipal waste from a landfill site that is used by several local authorities.

Table 1. Comparison of WDF and landfill site returns data showing amount of municipal waste sent to landfill in Wales in 2019/20 and discrepancies between the two data sets before and after validation

Quarter	Operator Returns Original (tonnes)	WDF Returns Original (tonnes)	Discrepancy between operator and WDF returns Original (%)	Operator Returns Final (tonnes)	WDF Returns Final (tonnes)	Discrepancy between operator and WDF returns Final (%)
1	33,673	31,841	5.8%	31,646	35,164	10.0%
2	29,658	24,553	20.8%	27,988	29,374	4.7%
3	17,028	16,981	0.3%	16,755	17,258	2.9%
4	25,754	28,872	10.8%	32,142	30,448	5.6%
Total	106,113	102,248	9.9%	108,531	112,243	6.3%

This is the total amount of Municipal Solid Waste (MSW) reported in WDF as sent to landfill that is checked against site returns. This figure will be slightly less than the total landfill figure, as some landfill waste is not validated due to apportioned rejects and rejects after several treatment processes where landfills cannot be identified or local authority portions are not clear.

Local Authority Compliance

Annex 1 provides important summary information about the identified limitation of the current formula for estimating the proportion of biodegradable waste in landfilled tonnages. It is advised that the information detailed in Annex 1 is considered alongside the annual results below.

The overall results from the 2019/20 monitoring year are shown in Annex 2.

The annual results show that all twenty-two local authorities achieved their LAS allowance obligations during 2019/20. A total of 73,294 tonnes of BMW from Wales was sent to landfill compared to the total Wales allowance of 330,000 tonnes. This means that local authorities in Wales collectively landfilled 78 per cent (256,706 tonnes) less BMW than the 2019/20 allowance.

The results show that Blaenau Gwent, Cardiff, Denbighshire, Flintshire, Isle of Anglesey, Merthyr Tydfil, Monmouthshire, Newport, Torfaen, Vale of Glamorgan and Wrexham used less than 10 per cent of their allocated allowances. Caerphilly, Ceredigion, Conwy, Gwynedd, Pembrokeshire and Rhondda Cynon Taf used less than 25 per cent of their allowance. Bridgend, Carmarthenshire and Powys used less than 50 per cent of their allowance. Neath Port Talbot and Swansea used over 50 per cent of their allowance.

Reasons for changes in the utilisation of allowances vary between years and by local authorities. Generally, changes can be attributed to:

- changes in waste collection service provision;
- changes in waste management practices and new/alternative technologies – diversion of residual waste to incineration with energy recovery has had a significant affect on local authority performance for LAS in recent years;
- public participation levels in recycling schemes;
- unforseen circumstances (e.g. extreme weather, contingency planning).
- the Landfill Disposals Tax regime has changed the economics of landfilling waste. It is no longer a cheaper alternative to other waste management methods.

2019-20 is currently the last year in which Local Authorities in Wales are allocated landfill allowances. Local Authorities in Wales have reduced the amount of BMW sent to landfill by 91 per cent (778,195 tonnes[4]) since the first full year of the scheme in 2005/06.

Disposal, which includes landfill, is at the bottom of the waste hierarchy and is the least sustainable management of our waste. Reducing the amount of BMW waste going to landfill also helps to cut greenhouse gas emissions, preventing the production and release of methane into the air from landfill sites. This is important for reducing the impact of climate change because methane is twenty five times more powerful than carbon dioxide as a greenhouse gas.

[4] 851,489 tonnes of BMW was sent to landfill in 2005/06

Appendices

Annex 1 – Limitations of Data

Limitation

It has been identified that the formula for calculating the biodegradable content of residual municipal waste is not adjusting for all wood tonnages that are separately collected from mixed residual waste sources. This is because the formula is only adjusting for those wood tonnages reported as sent to recycling destinations but not those sent to incineration destinations.

Although the wood tonnages sent for incineration are not being diverted for recycling, they are being diverted from mixed residual waste sources that are subsequently landfilled.

Wood is a 100 per cent biodegradable material so the formula is overestimating the proportion of biodegradable waste remaining in the final tonnages sent to landfill through not factoring in this diversion fully.

Impact

The formula has been consistently applied throughout the years of the LAS Scheme so the amount of biodegradable municipal waste landfilled for a few local authorities is likely to have been overestimated where separately collected wood waste was reported as incinerated in some historic scheme years. However, the impact to statistics is likely to be minor for these years.

The impact has been more significant since the 2017/18 scheme year following improvements in the accuracy of local authority reported end destinations for wood waste.

Improvements

The mass balance formula was not reviewed during the 2019/20 scheme year. Welsh Government and Natural Resources Wales agreed that it would not be beneficial to utilise resource in adjusting the mass balance to address the identified limitations for the following reasons:

- the majority of Welsh local authorities reported a proportion of wood recycled, which was still being factored into the calculation;
- the majority of Welsh local authorities were utilising significantly below their allocated allowances despite the limitation and;
- the Landfill Allowances Scheme was scheduled to conclude in the 2019/20 scheme year[5].

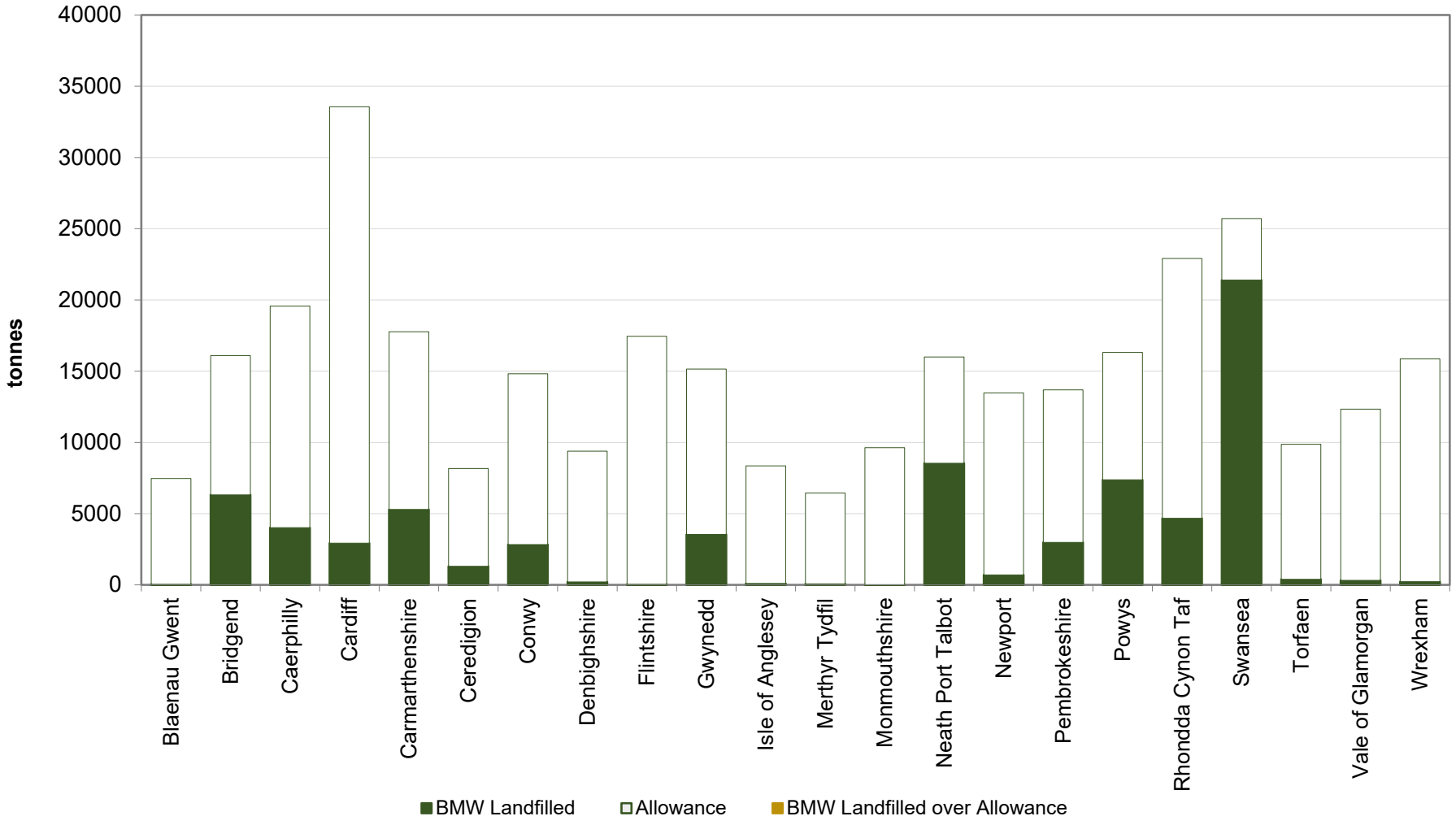
[5] 2019-20 will be the last year in which Local Authorities are allocated landfill allowances. The Landfill Allowances Scheme (Wales) Regulations 2004 will remain on the statute book and their reporting provisions will still need to be met by Local Authorities.

Annex 2 – Local authority compliance against targets

Table 2. LAS performance for 2019/20

Authority	LAS Allowance (tonnes) 2019/20	BMW landfilled (tonnes)	% of LAS 2019/20 allowance used
Blaenau Gwent	7,464	46	0.6%
Bridgend	16,098	6,318	39.2%
Caerphilly	19,563	4,012	20.5%
Cardiff	33,557	2,931	8.7%
Carmarthenshire	17,767	5,295	29.8%
Ceredigion	8,170	1,304	15.96%
Conwy	14,819	2,826	19.1%
Denbighshire	9,387	206	2.2%
Flintshire	17,448	45	0.3%
Gwynedd	15,143	3,537	23.4%
Isle of Anglesey	8,349	98	1.2%
Merthyr Tydfil	6,448	71	1.1%
Monmouthshire	9,628	16	0.2%
Neath Port Talbot	16,001	8,535	53.3%
Newport	13,475	696	5.2%
Pembrokeshire	13,689	2,985	21.8%
Powys	16,316	7,377	45.2%
Rhondda Cynon Taf	22,906	4,672	20.4%
Swansea	25,715	21,396	83.2%
Torfaen	9,865	385	3.9%
Vale of Glamorgan	12,336	314	2.5%
Wrexham	15,856	226	1.4%
Wales	**330,000**	**73,294**	**22.2%**

Figure 1. Amount of BMW landfilled compared to allowance for local authorities in Wales 2019/20



Annex 3 – Reporting of local authorities

Reporting deadlines for local authorities and landfill operators are set out in the LAS Regulations. Both local authorities and landfill operators have to submit municipal waste returns to Natural Resources Wales[6] within one month of the end of that period.

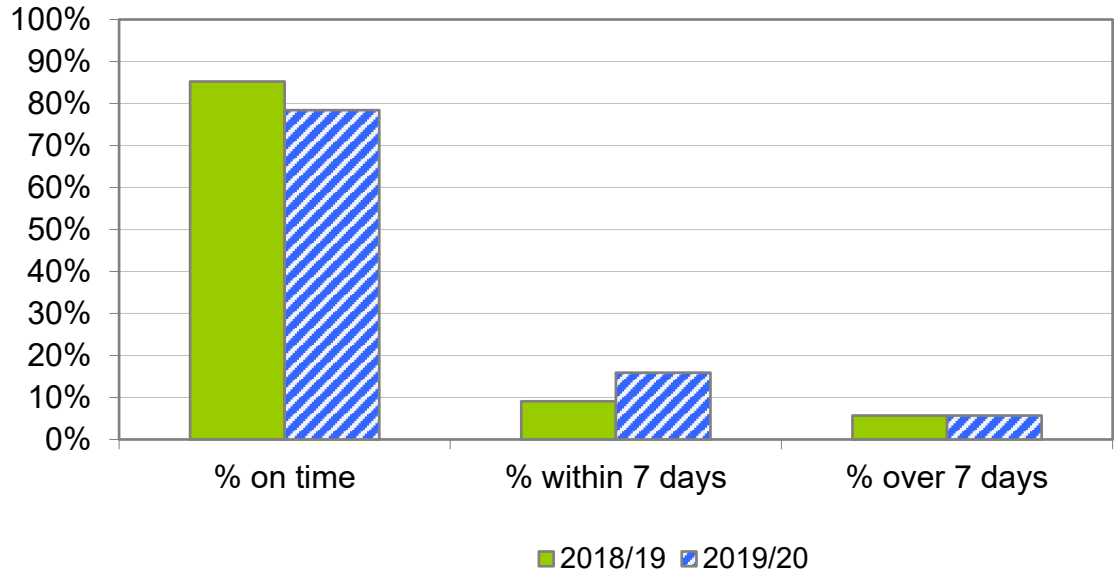
The Natural Resources Wales document 'LAS Guidance on reporting and notices' sets out the more detailed timetable for local authorities and landfill operators to meet their obligation to provide timely and accurate data under the LAS Regulations.

Local Authorities

The LAS regulations require local authorities to submit their municipal waste data to Natural Resources Wales for validation within one month of the quarter end. Figure 2 shows the level of compliant data reporting by local authorities in Wales during 2019/20.

The level of prompt reporting in Wales in 2019/20 decreased compared to the previous year. Twelve local authorities consistently reported on time throughout the year.

Figure 2. Proportion of local authorities reporting promptly in 2019/20 compared to 2018/19



The main reasons for local authorities reporting after the deadline included:

- technical issues;
- staffing and resource issues at local authorities;
- delay in local authorities receiving data from contractors;
- extra time taken sourcing data for other reporting requirements.

[6] Under the LAS Regulation, the 'Environment Agency' is listed as the Monitoring Authority, however, in Wales it was administered by Environment Agency Wales. The Natural Resources Body for Wales (Functions) Order 2013 transferred the Welsh devolved functions of the Environment Agency to the Natural Resources Body for Wales.

The Covid-19 National lockdown contributed to the reasons outlined above during the January-March 2020 reporting period.

Natural Resources Wales reports local authority compliance with the reporting deadlines to the Welsh Government. Table 3 provides more information on local authority reporting in 2019/20.

Table 3. Compliance with WDF data reporting deadlines by local authorities

Local Authority	Apr-Jun 2019	Jul-Sep 2019	Oct-Dec 2019	Jan-Mar 2020
Blaenau Gwent	On time	On time	On time	On time
Bridgend	On time	On time	On time	On time
Caerphilly	On time	On time	Within 7 days	On time
Cardiff	On time	On time	On time	On time
Carmarthenshire	On time	On time	On time	On time
Ceredigion	On time	Within 7 days	On time	On time
Conwy	On time	On time	On time	On time
Denbighshire	On time	On time	On time	On time
Flintshire	On time	Over 7 days	On time	On time
Gwynedd	On time	On time	On time	On time
Isle of Anglesey	On time	Over 7 days	Within 7 days	Within 7 days
Merthyr Tydfil	On time	On time	On time	On time
Monmouthshire	On time	On time	On time	Within 7 days
Neath Port Talbot	On time	Over 7 days	On time	Within 7 days
Newport	Within 7 days	On time	On time	Within 7 days
Pembrokeshire	Within 7 days	Over 7 days	On time	Within 7 days
Powys	On time	Within 7 days	Within 7 days	Over 7 days
Rhonda Cynon Taf	On time	On time	On time	On time
Swansea	On time	On time	On time	On time
Torfaen	On time	On time	On time	On time
Vale of Glamorgan	On time	On time	On time	On time
Wrexham	On time	Within 7 days	On time	Within 7 days

N.B. Deadlines may be extended due to weekends/bank holidays, technical issues or if agreed with an authority for extenuating circumstances. An extension of 1 week was also provided to all authorities for quarter 3 (Oct-Dec) returns to allow for the service question data to be updated.

Landfill Operators

Landfill operators are required to report the amount of municipal waste received by their sites within one month of the quarter end. Following reporting in WDF, 38 landfill sites in England and Wales were identified as receiving local authority municipal waste originating in Wales in 2019/20 – 11 in Wales and 27 in England. Waste landfilled abroad after incineration was also reported in WDF. The total number of reported landfills has increased from 33 to 38 in England and Wales compared to 2018-19.

Key Quality Information

Welsh Government. 'The Landfill Allowance Scheme: Allocation of Allowances 2009-2020'. Available from https://gov.wales/landfill-allowance-scheme-allocation-allowances [Accessed 20th October 2020].

Natural Resources Wales has six weeks to validate the data. Validation involves a procedure of checking that all relevant WasteDataFlow questions have been completed by the local authorities and any discrepancies in calculations between entered inputs and outputs are identified. Any anomalies are then communicated to the individual local authorities and remedial action is taken to resolve them. Post validation, Natural Resources Wales also request local authorities to provide evidence in relation to their waste data, which is an ongoing process throughout the scheme year.

There may be some inconsistencies in the measurement of total waste since the waste is weighed when collected and again when it is sent for treatment. In addition, there may also be loss in weight through various treatment processes. Natural Resources Wales validate all local authority returns and require that the difference between the amount collected and the amount sent for treatment must not differ by more than 10 per cent or 100 tonnes in any quarter (whichever is the greatest figure), unless a valid explanation can be given. Natural Resources Wales has also placed more emphasis on authorities providing more evidence in relation to their waste statistics since 2012/13.

WasteDataFlow is subject to continual improvement and development that can impact on the way that data is entered and introduce new data reports based on new data requirements. Some changes can be complex in nature producing impacts in reporting that may not be fully realised initially. All changes to the system are carefully monitored for any discrepancies between data entry and reporting. In the event that discrepancies arise, the WasteDataFlow system is adjusted and any previously published data is revised or caveated accordingly.

The accuracy of the data reported in WasteDataFlow is entirely dependant on the measurement, data management and reporting by local authorities and waste operators. While Natural Resources Wales carry out validation in accordance with the Regulations, the validation of WasteDataFlow and the cross checks with other available waste data is limited to the accuracy of those reporting.

Official Statistics

The information within this report is categorised as Official Statistics, and has been produced and published according to arrangements approved by the UK Statistics

Authority. For more information about Official Statistics and the UK Statistics Authority visit www.statisticsauthority.gov.uk.

For statistical matters relating to this publication please contact John Fry: john.fry@cyfoethnaturiolcymru.gov.uk

Glossary

Biodegradable

Capable of being degraded by plants and animals.

Biodegradable Municipal Waste (BMW)

The component of Municipal Solid Waste capable of being degraded by plants and animals. Biodegradable Municipal Waste includes paper and card, food and garden waste, and a proportion of other wastes, such as textiles.

Diversion (from landfill)

A term referring to avoiding sending waste to landfill where it can be sent to an alternative waste management option that is better for the environment. The waste hierarchy is set out at Article 4 of the revised Waste Framework (Directive 2008/98/EC). This gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill).

Green house Gas

A term given to those gas compounds in the atmosphere that reflect heat back toward earth rather than letting it escape freely into space. Several gases are involved, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone (O_3), water vapour (H_2O) and some of the chlorofluorocarbons (CFCs).

Incineration

The controlled thermal treatment of waste by burning, either to reduce its volume or toxicity. Energy recovery from incineration can be made by utilising the calorific value of the waste to produce heat and/or power.

Landfill Allowances Scheme (LAS)

The purpose of the Landfill Allowances Scheme is to ensure diversion of biodegradable municipal waste (BMW) from landfill. Welsh Government allocate statutory limits on the amount of BMW waste that local authorities in Wales can landfill. Welsh Government can apply financial penalties to Welsh local authorities for exceeding allowances and failure to comply with reporting requirements.

As monitoring authority for the scheme, Natural Resources Wales validates waste data submitted by Welsh local authorities and determines the amount of BMW sent to landfill by each local authority.

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.

List of Waste (European Waste Catalogues)

Serves as a common encoding of waste characteristics in a broad variety of purposes like classification of hazardous wastes. Assignment of waste codes has a major impact on the transport of waste, installation permits (which are usually granted for the processing of specific waste codes), decisions about recyclability of the waste or as a basis for waste statistics.

Local authority municipal waste

Includes household and non-household waste that is collected and disposed of by local authorities. It includes regular household collections, specific recycling collections, special collections of bulky items, waste received at civic amenity sites and waste collected from non-household sources.

Local Authority Recovery Targets (LART)

The Local Authority Recovery Targets were set under the Waste (Wales) Measure 2010 by Welsh Government and are intended to promote higher levels of recycling and to realise associated wider sustainability benefits.

Mass Balance Approach

The mass balance formula is applied quarterly to calculate the biodegradable content of landfilled local authority municipal waste for each local authority. Welsh Government have deemed Welsh local authority municipal waste to be 61% biodegradable. The formula uses the data reported in WasteDataFlow to adjust this percentage based on the biodegradability of waste diverted for recycling, reuse and composting. This adjusted percentage is used to calculate the biodegradable content of landfilled waste.

WasteDataFlow (WDF)

Since 2004-05, waste data for the amount and type of local authority waste collected and how it is disposed of are collected through an online reporting system called WasteDataFlow (www.wastedataflow.org). In Wales this is managed by Natural Resources Wales.

Data Archive Appendix

Data outputs associated with this project are archived on server–based storage at Natural Resources Wales.

The data archive contains:

[A] The final report in Microsoft Word and Adobe PDF formats.