



Welsh local Government Association
Waste Improvement Programme

Waste Finance Data Report 2021-22

December 2023



Mae'r ddogfen hon hefyd ar gael yn Gymraeg

This document is also available in Welsh

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Welsh Local Government Association - The Voice of Welsh Councils

We are The Welsh Local Government Association (WLGA); a politically led cross party organisation that seeks to give local government a strong voice at a national level. We represent the interests of local government and promote local democracy in Wales.

The 22 councils in Wales are our members and the 3 fire and rescue authorities and 3 national park authorities are associate members.

We believe that the ideas that change people's lives, happen locally.

Communities are at their best when they feel connected to their council through local democracy. By championing, facilitating, and achieving these connections, we can build a vibrant local democracy that allows communities to thrive.

Our ultimate goal is to promote, protect, support and develop democratic local government and the interests of councils in Wales.

We'll achieve our vision by

- Promoting the role and prominence of councillors and council leaders
- Ensuring maximum local discretion in legislation or statutory guidance
- Championing and securing long-term and sustainable funding for councils
- Promoting sector-led improvement
- Encouraging a vibrant local democracy, promoting greater diversity
- Supporting councils to effectively manage their workforce

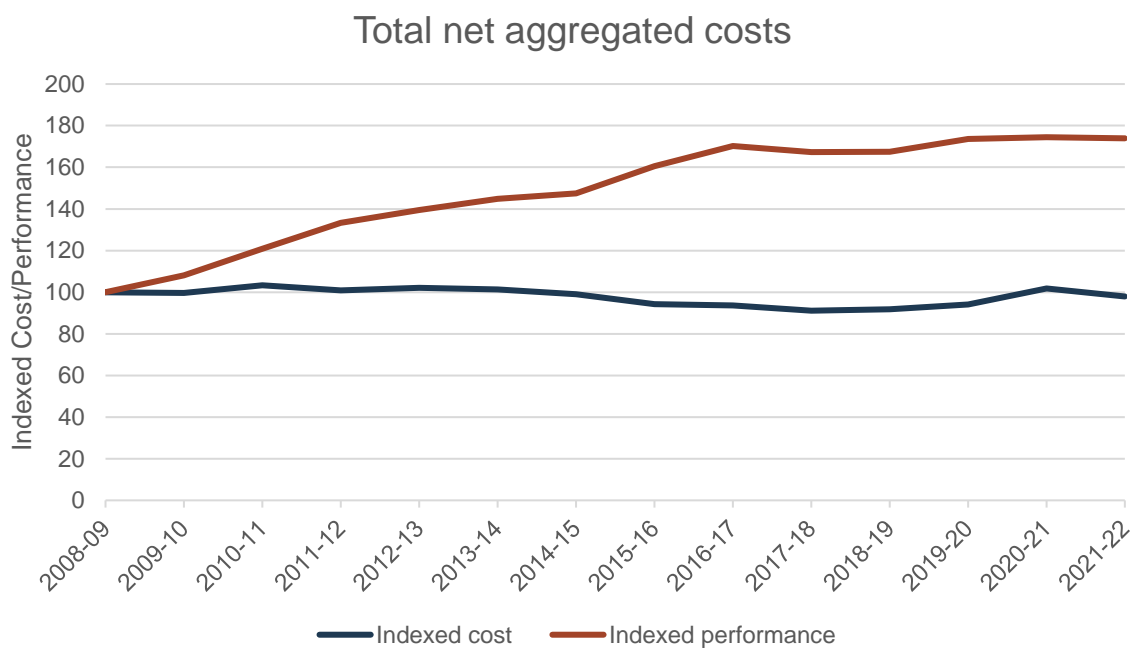
Contents

1. Executive Summary	6	
1.1 Key Findings		7
2. Introduction	12	
3. Detailed Findings	14	
3.1 Total Service Data		14
3.2 Use of Grants.....		16
3.3 Waste Collected by Councils.....		17
4. Household Waste Service Costs	19	
5. Dry Recycling	23	
5.1 Total dry recycling service cost		23
5.2 Collection.....		25
5.3 Transfer costs.....		28
5.4 Treatment costs.....		28
5.5 Income		30
6. Organic Waste Services	32	
6.1 Food Waste Services	33	
6.1.1 Food waste collection		35
6.1.2 Food waste treatment		36
6.2 Green Waste Services.....	37	
6.2.1 Charging and Non Charging.....		39
6.2.2 Green waste collection		40
6.2.3 Green waste treatment.....		42
7. Combined Kerbside Recycling & Composting Services	43	
8. Residual Waste	45	
8.1 Residual Waste Frequency		46
8.2 Residual waste receptacle		48
8.3 Residual waste – Longer-term trend.....		49
8.4 Residual Collection		50
8.4 Residual Transfer		51

8.5 Residual Treatment / Processing	52
8.6 Residual Landfill Disposal	54
9. Household Waste Recycling Centres.....	57
10. Bring Sites	61
11. Other Waste Collected	63
11.1 Trade Waste Service	63
11.2 Nappy and other Absorbent Hygiene Products Collections	64
11.3 Clinical Waste	65
12. The Next Stage	66
Appendix A: Service Collection Detail	

1. Executive Summary

1. Continuing the work begun in 2008/09, the WLGA Waste Improvement Programme has, with the support of all 22 Welsh councils, undertaken an analysis of the waste finance data for financial year 2021/22.
2. Due to the usual lag in data, this report analyses 2021/22 data and will therefore include some lasting impacts of the COVID-19 pandemic on council waste services across Wales.



3. The graph above plots the indexed net cost of MSW waste services from 2008/9 to 2021/22 with indexed performance over the same time period. The graph shows that when adjusting for inflation, net costs decreased between 2020/21 and 2021/22, the first decrease in real terms since 2017/18. Recycling rates have increased significantly since baseline data began, increasing from 35.6% to 65.2% in 2021/22.
4. Finance data shows that between 2020/21 and 2021/22:
 - The recycling rate for Wales decreased from 65.4% to 65.2%.
 - Sixteen of the twenty-two councils reached or exceeded the statutory minimum target of 64%
 - Ten councils saw an increase in performance on the previous year (see figure 2).
 - Gross costs increased by 5.1% (1.12% in real terms)
 - Net costs increased by 0.2% (3.8% decrease in real terms)

5. The data supplied by councils via WasteDataFlow has undergone a quality assurance process by the Waste Improvement Programme. Data was subsequently analysed using the WLGA's financial analysis tool. The results of the modelling work are included in the body of this report. Where possible, comparisons have been drawn with data from previous years.
6. Whilst a high-level analysis is provided in some places the report does not analyse national or local differences. Explaining *why* changes have occurred is a role for the benchmarking process. The 2021/22 Waste Improvement Programme benchmarking reports will primarily focus on food waste services, dry recycling services and household waste recycling centres (HWRCs)¹. These reports will be made available on the waste services financial benchmarking hub.

1.1 Key Findings

The table below shows the net expenditure on waste services in Wales between 2020/21 and 2021/22. The final column highlights the difference in real terms (adjusted for inflation). CPI for the 12 months from April 2021 to March 22 was 3.98%. During this period all household waste service expenditure decreased in real terms apart from Household Waste Recycling Centre's which increased by 4.6%.

Expenditure on waste services	2020/21 (£)	2021/22 (£)	Difference (£)	Diff (%)	Real terms % Diff Inflation = 3.98%
Total Gross exp	316,732,160	332,984,024	16,251,864	5.13%	1.15%
Total Net exp	283,348,945	283,826,107	477,162	0.17%	(-) 3.81%
Net exp on Household waste services ²	268,818,958	270,654,288	1,835,330	0.68%	(-) 3.3%
Dry recycling (net)	74,563,560	72,716,141	(-) 1,847,419	(-) 2.48%	(-) 6.46%
Organic waste (net)	55,866,396	56,189,247	322,851	0.58%	(-) 3.4%
Residual waste (net)	98,192,385	98,148,534	(-) 43,850	(-) 0.04%	(-) 4.02%
HWRC (net)	39,244,209	42,627,675	3,383,466	8.62%	4.64%
Bring (net)	952,408	972,691	20,283	2.13%	(-) 1.85%

It is important to note that waste services do not necessarily increase with inflation, they are primarily driven by staff costs, transport and fuel costs, and capital investment, all of which are driven at different rates.

Performance and overall expenditure

Recycling performance decreased by **0.2** percentage points. Net expenditure in real terms (adjusted for inflation) decreased over the same period. The decrease in expenditure can be somewhat attributed to a part return to 'normal' following the COVID-19 pandemic which resulted in additional costs for Councils.

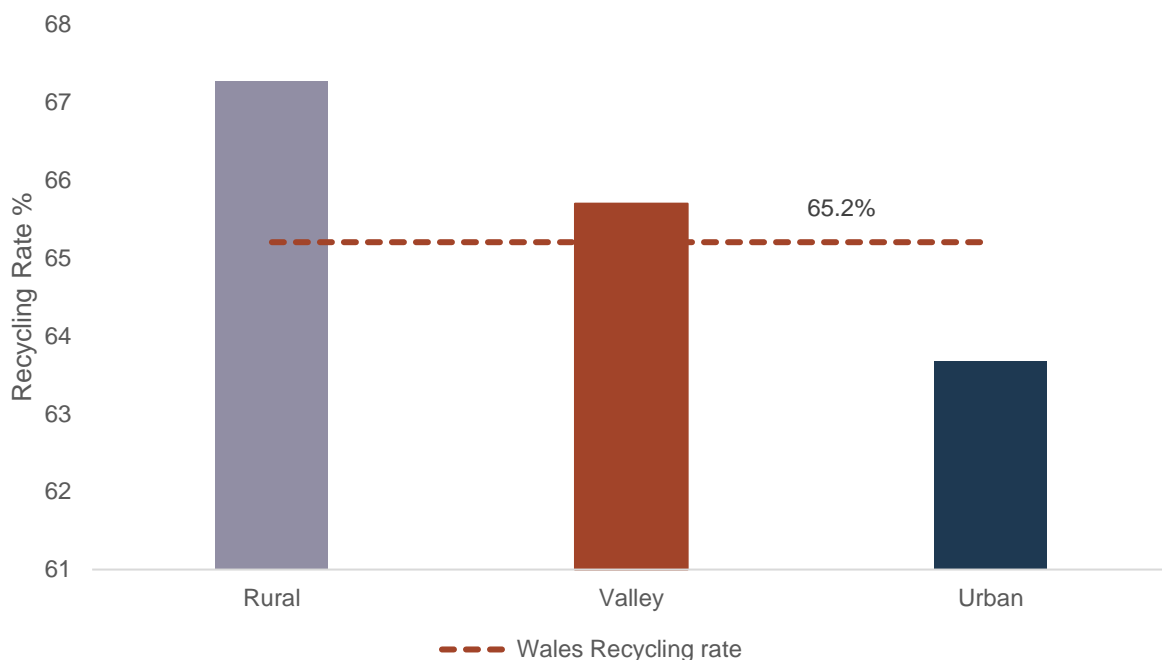
¹ More information on the waste benchmarking project can be found [here](#).

² Includes Dry recycling, Food waste, Green waste, Residual, Household Waste Recycling Centres (HWRC) and Bring site services

Re-use, recycling, and composting rates

Overall re-use, recycling, and composting rates decreased from 65.4% in 2020/21 to **65.2%** in 2021/22. **Ten** councils (out of twenty-two) saw an increase in their recycling rate, with **sixteen** councils achieving **64%** or higher. The graph below demonstrates the average recycling rates achieved in 2021/22 when grouped by rurality. Rural councils achieved an average recycling rate of **67.3%**; the highest average recycling rate when compared to Valley (65.7%), and Urban councils (63.7%). The graph shows the collective urban recycling rate being notably lower than the national average. This could be due to the presence of high-density housing and flats with lack of space and communal waste facilities, including houses of multiple occupation (HMOs) and a high student population, all of which are harder to reach and problematic target areas for councils. Both rurality and socio-demographics can be contributing factors in recycling rates, both of which are out of a council's control.

Average Recycling rates 2021/22



Gross Expenditure

Gross expenditure increased from **£316,732,160** to **£332,984,024³**, an increase of **5.1%**. Gross expenditure in real terms saw a smaller increase, an increase of **1.2%**.

Net Expenditure

Net expenditure on waste services was **£283.8m**, a marginal increase of **£477k** when compared to 2020/21. Net expenditure in real terms decreased by **3.8%**. This was the first decrease in real terms since 2017/18.

³ These figures are likely to be slightly higher due to a small number of councils excluding covid related expenditure.

Income

The difference in gross and net expenditure was significantly larger during 2021/22 due to more income being received by councils. Income from the sale of dry recyclate increased by **£6.3m** due to the recycling market recovering following the Covid-19 pandemic which resulted in higher market rates. Income from trade waste services also increased due to services resuming following the pandemic.

Household Waste Services – Net Expenditure

Overall, net expenditure on household waste services⁴ (Dry Recycling, Organic, Residual, HWRC and Bring) increased by **0.68%**, increasing to **£270.7m**. This represents an increase in expenditure of **c£1.8m**. Expenditure in real terms saw an actual decrease of **3.3%**.

Kerbside Dry Recycling

Kerbside dry recycling costs decreased by **£1.8m (2.5%)**, decreasing to **£72.7m**. Net expenditure in real terms decreased further, decreasing by **6.5%**. During the same period, the mass of dry recyclate collected also decreased, decreasing by nearly **13,000 tonnes (4%)**.

Organic Waste Services

Organic (Food and Green) waste services saw a marginal increase in expenditure of just **0.6%**, increasing from £55.9m to **£56.2m** (net). When accounting for inflation, net expenditure decreased by **3.4%** in real terms.

Food waste net expenditure increased by **£1.7m** with 4,760 tonnes less food waste collected when compared to 2020/21.

Green waste net expenditure decreased by **£1.4m** with 5,318 tonnes less green waste collected when compared to 2020/21.

The overall reduction in organic tonnages is likely to be due to an increase the previous year due to the pandemic where people were required to stay at home. As people started to return to work, this resulted in less food and green waste being presented at the kerbside.

Residual Waste Services

Expenditure on residual waste services remained largely unchanged, decreasing by **£44k** to **£98.1m**. Net expenditure in real terms decreased by **4%**. During the same period, the mass of residual waste collected decreased by nearly **30,000 tonnes**.

2021/22 saw the lowest landfill disposal net expenditure on record highlighting a longer-term trend.

⁴ Figure excludes; trade waste, clinical waste, procurement of waste treatment, Consultants fees, awareness raising costs and costs associated with other MSW which are recorded elsewhere.

Household Waste Recycling Centre (HWRC)

HWRC expenditure increased from £39.2m to **£42.6m**, an increase of **8.6%**, however when taking inflation into account the increase reduces to **4.6%** in real terms. The increase is likely to be linked to a decrease the previous year due to the temporary closure of HWRCs during the height of the pandemic. The proportion of household waste received at HWRCs increased by **3%**, increasing to **24%**.

Bring Site

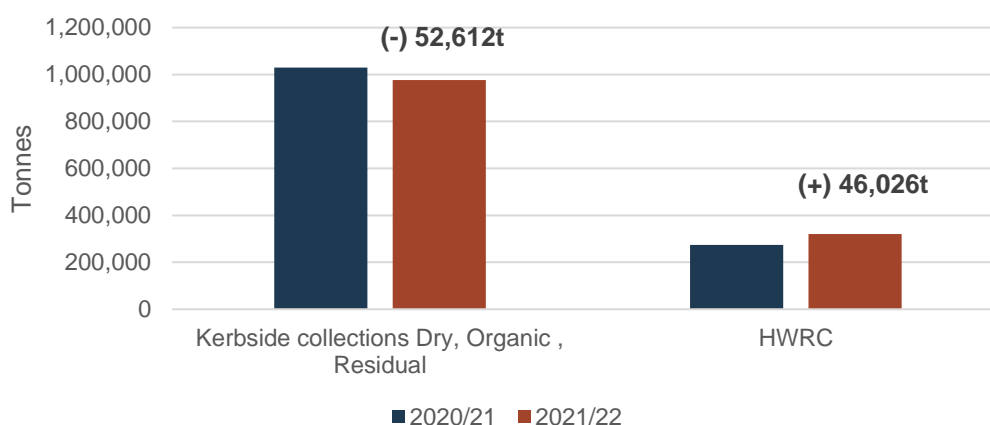
Bring site expenditure increased by **£20k**, an increase of **2.1%**. When accounting for inflation, net expenditure in real terms decreased by **1.85%**. Mass collected via the bring site network reduced by **481 tonnes (5%)**, continuing a longer-term trend.

Household waste arisings

Overall, household waste arisings decreased by **0.5%**, decreasing from **1,313,339 tonnes** to **1,306,273 tonnes**. 2021/22 household waste arisings are very similar to pre pandemic figures (2019/20), highlighting a return towards 'normal'. Data from WDF finance returns suggests that the pandemic has interrupted the Wales household waste reduction pathway target of **1,289,384 tonnes⁵** for 2021/22. With many people likely to continue working from home in the future, resulting in more waste presented at the kerbside, it may be more challenging to meet future household waste reduction targets.

The graph below demonstrates the difference in tonnage collected between 2020/21 and 2021/22 on the household service elements. Between 2020/21 and 2021/22 overall kerbside tonnage **decreased by 52,612 tonnes** whereas HWRC tonnage **increased by 46,026 tonnes** highlighting a shift in tonnages between kerbside and HWRC. The graph suggests that as HWRCs reopened following the pandemic, more waste was taken to HWRCs, and less waste was presented at the kerbside.

Household waste service performance change between 2020/21 and 2021/22



⁵ Source: [Towards Zero Waste, Welsh Government](#)

Municipal Solid Waste arisings

Municipal Solid Waste (MSW) arisings increased by **1.35%**, increasing from **1,488,253 tonnes** to **1,508,370 tonnes**. However, 2021/22 arisings are lower than the pre pandemic (2019/20) figure of **1,512,105 tonnes**, continuing a longer-term waste reduction trend.

Material recycled at the kerbside

The amount of material recycled at the kerbside (i.e. from household recycling collections) decreased. These changes are summarised in the table below.

	2020/21 Recycling % points contributed to MSW recycling performance	2021/22 Recycling % points contributed to MSW recycling performance	% point change
Dry Recycling	22.1%	21%	(-) 1.1%
Food waste	9.8%	9.4%	(-) 0.4%
Green waste	7.9%	7.5%	(-) 0.4%
Total	39.8%	37.9%	(-) 1.9%

2. Introduction

The Waste Improvement Programme is funded by the Welsh Government and has been in existence since 2007. Work is currently targeted at supporting councils in increasing efficiency of waste services and the benchmarking of cost variations to identify how services can be delivered at lower cost whilst improving performance.

Process

Council waste expenditure data has always been collected consistently in line with the Best Value Accounting Code of Practice. WasteDataFlow (a database for collecting tonnage data from waste activities) has been adapted in Wales to accept tonnage data and waste financial data creating a single point of data entry. Once tonnage and finance data has been entered into the system a series of reports can be generated.

The data entered into WasteDataFlow by councils is compared against the waste management Revenue Outturn (R/O) figures. As in previous years, data extracted from WasteDataFlow required a cleansing to remove anomalies. This process took place between November 2021 and March 2022. Work is undertaken by the Waste Improvement team in conjunction with individual councils.

In some cases, council figures in isolation may appear anomalous and may not present the whole picture; this can be due to apportionment. Apportionment may take place between shared services and between the collection, transfer, and treatment process.

All twenty-two councils are represented in this report; however, it is important to note that Wrexham Council figures for 2021/22 are estimated.

Inflation

Consumer Price Index (CPI) for the 12 months from April 2021 to March 2022 was 3.98%. This is the measure of inflation in consumer prices and the cost of living. Figures in this report that have inflation taken into account are referred to as expenditure in 'real terms'.

COVID-19 Pandemic and expenditure

Last year's waste finance report (2020/21) highlighted the impact the pandemic had on waste services in Wales where councils adapted working practices and systems in order to adhere to restrictions. These restrictions came at a financial cost to councils. When reading and comparing figures in this report it is important to remember the key impacts and changes to councils during 2020/21 and 2021/22. Key changes and impacts are listed below:

- Extra vehicles and staff required to adhere to social distancing regulations

- Convoy systems implemented
- Additional Personal Protective Equipment (PPE) required
- Temporary closure / reduced opening times of Household HWRCs
- HWRC booking systems introduced in many councils
- Prioritisation led to some service areas being reduced or suspended in some councils
- Increase of agency workers due to staff sickness, self-isolation and shielding
- Increase in kerbside participation/tonnages due to school closures and residents required to stay at home.
- Decrease in sale of dry recyclate income due to reduction in the price per tonne for materials
- Income from trade waste reduced
- Ability to enforce and raise awareness reduced
- More councils disposed of waste via Energy from Waste

Due to the impacts of the pandemic, in some instances it is useful to compare data between 2019/20 and 2021/22 (pre and post pandemic).

2021/22 data shows Welsh councils experiencing a journey back towards ‘normal’ following the height of the pandemic in 2020/21. However, it is clear that some impacts of the pandemic have continued into 2021/22, with some adaptations to services carrying through to 2021/22, in particular Household Waste Recycling Centre booking systems. With many people likely to continue working from home in the future, it is possible that standard service, expenditure, and performance may not return to pre pandemic norm.

Similar to last year, councils were eligible to apply to Welsh Government for funding to partly offset some of these additional costs. Figures in this report include additional expenditure in relation to councils’ response to the COVID -19 pandemic. A small number of councils were unable to include covid related expenditure in their WDF finance return and for some councils no covid costs were incurred.

The table below lists the councils where covid expenditure has been excluded from figures in this report.

Councils	Overall Covid expenditure Total
Blaenau Gwent	c.£521k
Ceredigion	c.£250k
Torfaen	Unavailable
Wrexham	Unavailable

3. Detailed Findings

3.1 Total Service Data

1. Overall gross expenditure on waste services during 2021/22 was £332,984,024. This represents an increase of £16m when compared to the 2020/21 figure of £316,732,160, a rise of 5.1%. Gross expenditure in real terms saw a smaller increase of 1.2%.
2. Total net expenditure increased for the fourth consecutive year, increasing to £283,826,107. However, when accounting for inflation, total net expenditure decreased by 3.8% in real terms.
3. Between 2020/21 and 2021/22 the income councils received from selling dry recyclables more than doubled, increasing from £5.9m in 2020/21 to £12.2m in 2021/22. This was due to the increase and recovery of market rates following the pandemic.
4. Figure 1 shows how net expenditure on waste services in Wales have changed since the finance project began in 2008/09. Costs have been adjusted for inflation and are indexed using the 2008/09 data as a baseline. Expenditure in real terms has remained fairly stable over the past fourteen years. More recently, between 2018/19 and 2020/21, expenditure increased year on year with 2020/21 seeing the largest indexed net expenditure recorded since 2012/13. This highlights the financial impact the pandemic had on waste services during 2020/21. 2021/22 saw a decrease in real terms which reflects a move towards returning to 'normal' following the height of the pandemic. Recycling rates have increased significantly, increasing from 35.6% in 2008/09 to 65.2% in 2021/22. Figure 1 however does highlight a plateauing of the recycling rate over the last 3 years. The plateauing could be due to councils' response to the pandemic when restrictions were put in place, including some suspended services.

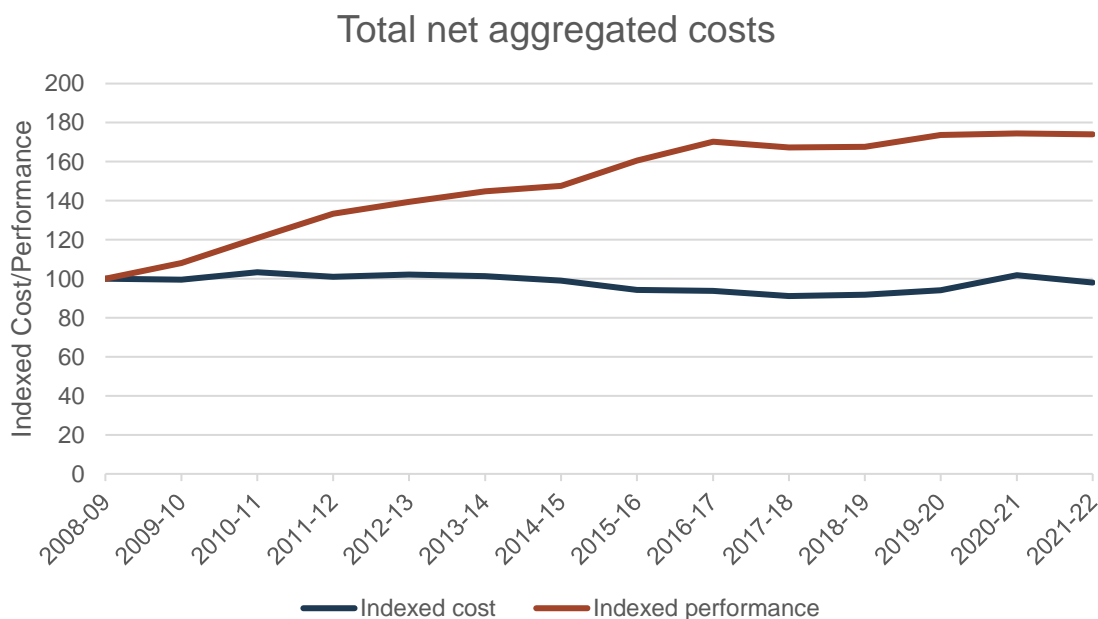


Figure 1 – Total net costs

5. The recycling rate decreased by 0.2% between 2020/21 and 2021/22. The percentage points of waste recycled and composted from the kerbside decreased by 2%. This reflects a shift in arisings between services following the COVID-19 pandemic.
6. The majority (95%) of total net expenditure results from the provision of services directly to the householder: Dry Recycling, Organic Waste, Residual Waste, HWRC and Bring sites.
7. The total amount of SWMG allocated against waste services in 2021/22 reduced to £16.4m, a reduction of £1m.
8. Figure 2 below shows the difference in total household waste net expenditure for all councils between 2020/21 and 2021/22. Ten councils demonstrated a decrease in net expenditure whilst twelve councils demonstrated an increase. The data collection exercise does not determine “why” these changes have taken place, but it is intended, via the CSS facilitated benchmarking process to further investigate the factors affecting service costs.

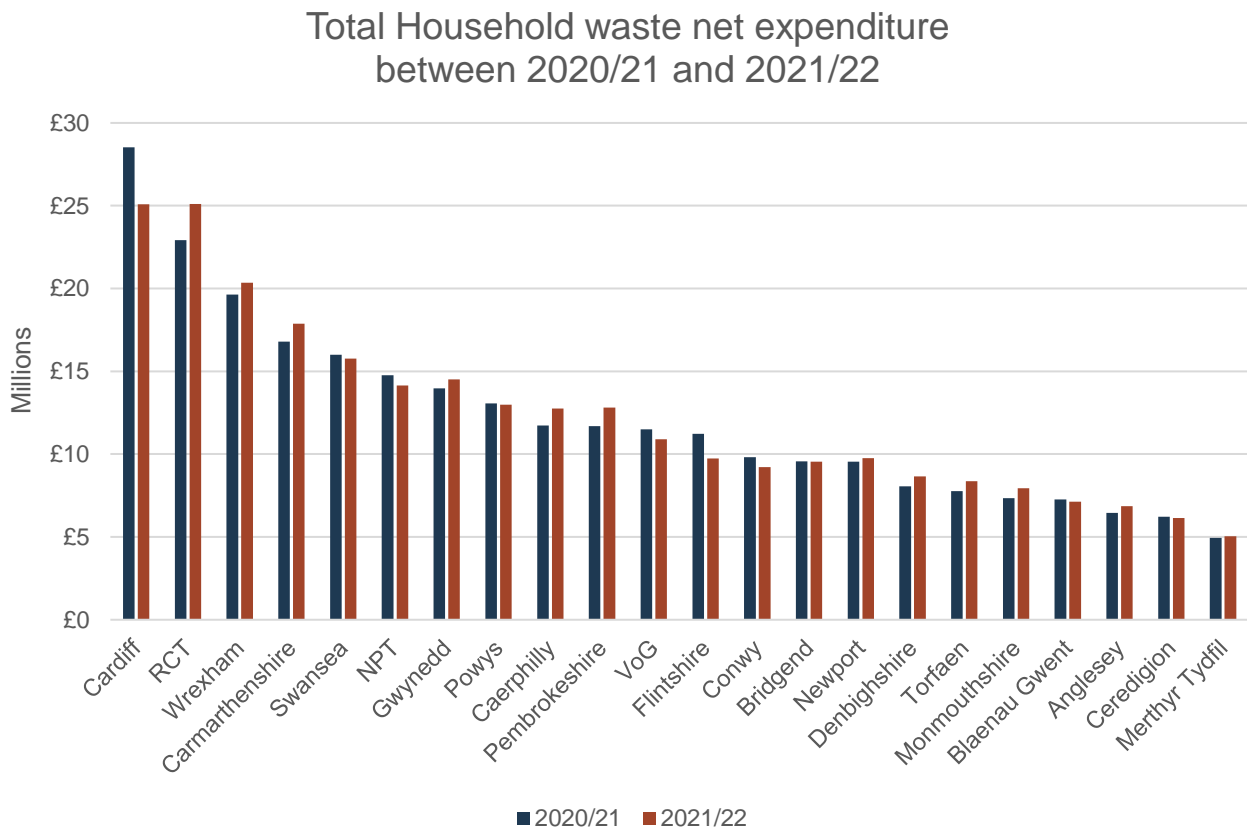


Figure 2 Total household waste expenditure between 2020/21 and 2021/22

3.2 Use of Grants

9. The graph in Figure 3 below shows total net expenditure on waste services for each council during financial year 2021/22. Contribution made by grant allocation is represented as 'hatched' area. Expenditure is shown on a cost per household basis.

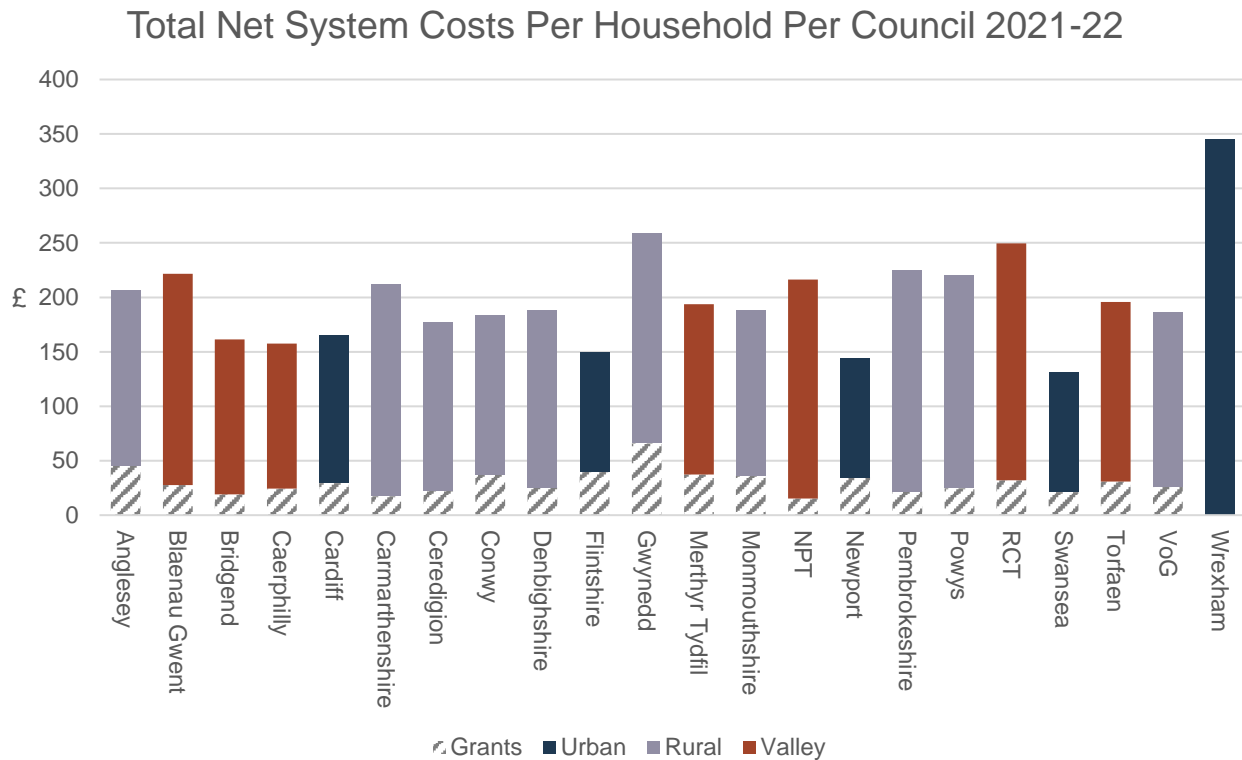


Figure 3 – Total System Costs per household 2021/22

10. This graph demonstrates that on a per household basis, grants are distributed fairly evenly across the group. As the graph shows only revenue grants, (capital grants are not shown) councils that attribute a greater proportion of Sustainable Waste Management Grant (SWMG) to capital projects will exhibit a lower value for revenue grant per household relative to the group as a whole, whilst councils in receipt of additional grants other than SWMG, may exhibit higher relative levels of grant. It is important to note that some council grant totals may include covid hardship grants, loss of income grants, and circular economy grants from Welsh Government.

11. The balance of the net expenditure comes from the Revenue Support Grant allocated to each council by Welsh Government. The graph in figure 4 shows the level of funding through SWMG decreasing over the last 4 years, whilst overall expenditure increases year on year. This accompanied with the impact of inflation, rising energy costs and increased service demand etc, local councils have put more resources into the service themselves, creating further service budget pressures. It will be essential that councils continue to

⁶ Grants = Sustainable Waste Management plus other grants received e.g. procurement support, SCIF, RCAF, Covid hardship fund, Covid - loss of income.

make efficiency savings as the gap between grant funding and expenditure increases. In the future EPR (Extended Producer Responsibility) should contribute to the running of services extending the polluter pays principle, meaning that public money could be focussed on other services.

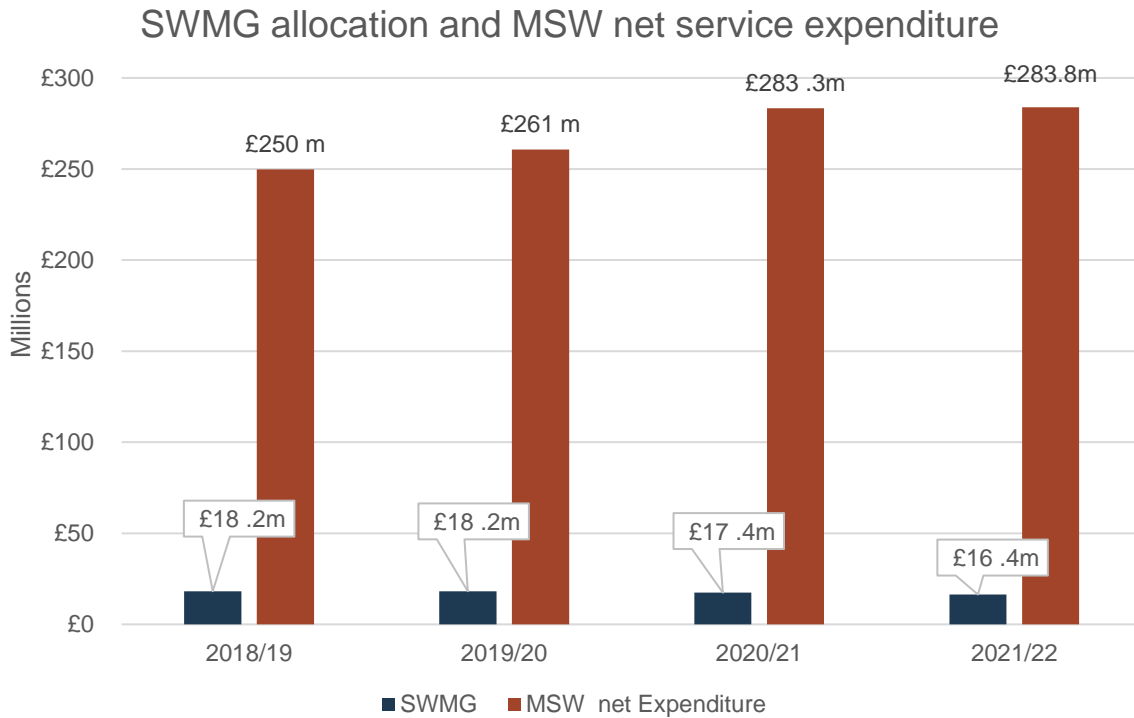


Figure 4 – Sustainable Waste Management Grant and MSW net service expenditure

3.3 Waste Collected by Councils

12. The following graphs show the proportion of waste/recycling streams managed for each of the services provided by mass. This provides context against which the costs can be assessed.

13. Kerbside residual waste, dry recycling and HWRC's are the largest sources of household waste collected during 2021/22. Residual accounting for 31% of mass, a 2% decrease from 2020/21; dry recycling accounting for 24%, a 1% decrease from 2020/21 and HWRC accounting for 24%, a 3% increase from 2020/21. The increase in HWRC arisings is likely to be due to the re-opening of HWRC sites following the temporary closure in 2020/21 due to COVID-19 restrictions. Figure 5 below shows the proportion of total waste collected per household of each of the household waste service areas.

Total Waste Collected per Household Waste Stream 2021-22

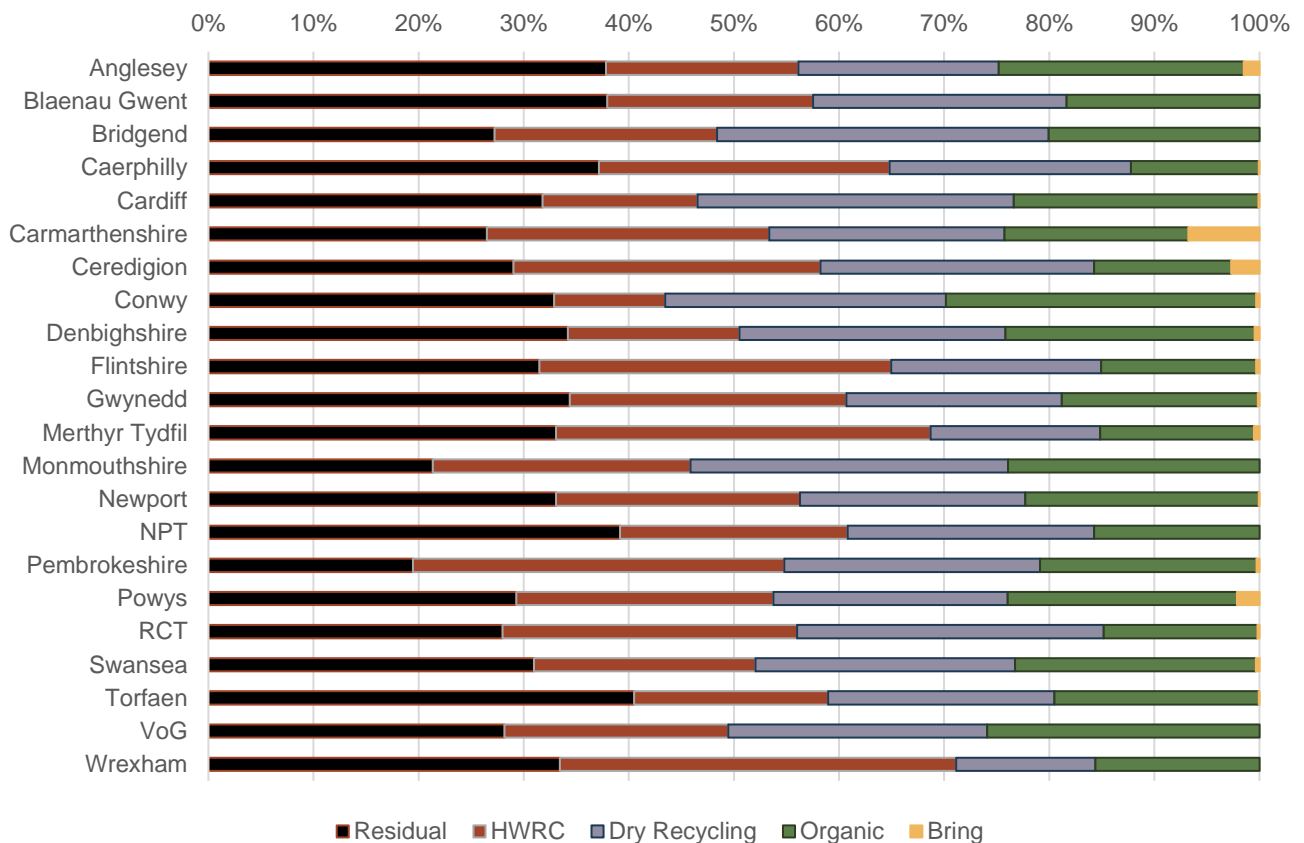


Figure 5 - Source of waste collected⁷

14. Figure 6 below shows the proportion of overall expenditure taken up by each of the household waste service areas. Residual waste remains the biggest area of expenditure accounting for between 22% and 54%. This wide variation is influenced by the tonnage of residual waste collected and the availability of treatment options post collection. During 2021/22 HWRC accounted for c16% of total expenditure whilst handling a significant proportion (24%) of all household waste collected, suggesting that HWRC is proportionally a cost-effective way of collecting material. However, this does not take account of overall carbon impacts across the economy, nor potential social demographic impacts (e.g. people without access to cars may be unable to access HWRCs).

⁷ Does not include trade, clinical, AHP, bulky or other MSW.

% Expenditure Household Waste Services 2021-22

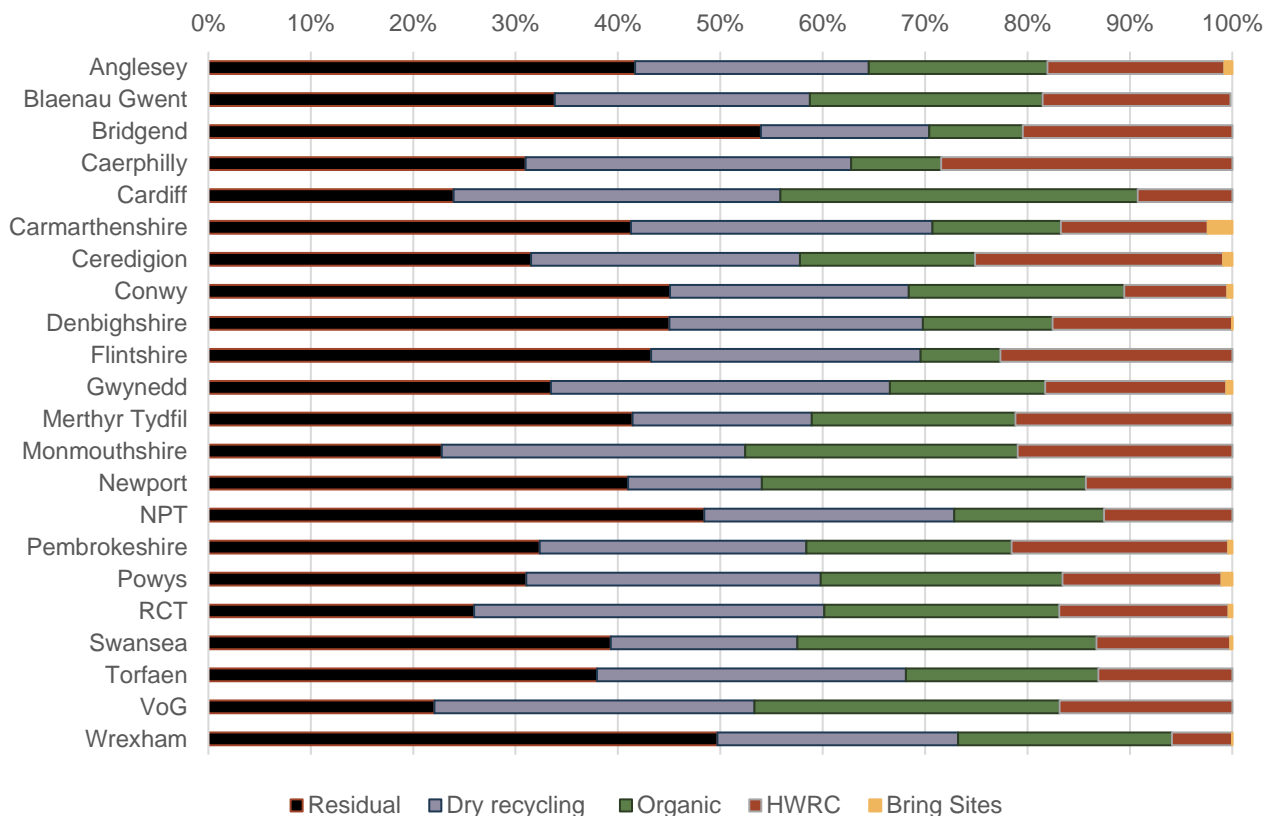


Figure 6 - Expenditure by waste service

4. Household Waste Service Costs

15. The following data compares expenditure on household waste services across Welsh councils. The Household Waste Service cost is defined as the aggregated total of cost associated with Kerbside dry recycling, Kerbside food waste, kerbside green waste, residual waste, HWRCs and bring sites. Each element includes costs of collection, transfer, treatment, and disposal of waste. Costs associated with trade waste, trade recycling, clinical waste, bulky waste, procurement of waste treatment, other MSW and awareness raising costs are not included.

16. Graphs show costs on both a per household and per tonne basis. In addition, colour coding of graphs indicates whether authority is classified as Urban, Rural or Valleys, further colour coding for dry recycling services indicates the collection service profile of the authority. Level of grant allocated to each service area by councils is shown as the 'hatched' area of the chart. As incomes generated by services will tend to differ according to type of services in place, expenditure net of income received is shown in the graphs. In addition to cost data, performance, in terms of % MSW re-used, recycled, and composted is shown, denoted by the orange dashes on the chart. For all household waste services except residual waste, ideally, we want to see a high value recorded against

performance (orange line) and a low value recorded for service cost (solid bars) – it's likely that the bigger gap shows high recycling performance being achieved efficiently.

17. It is not possible to differentiate between SWMG grant, and other smaller grants when allocated against service areas in WasteDataFlow. Therefore, grant contribution shown in the following graphs may include other grants in addition to SWMG.

18. Figure 7 & 8 show the total net expenditure on household waste services in Wales. Costs are shown both as a cost per household served and a cost per tonne.

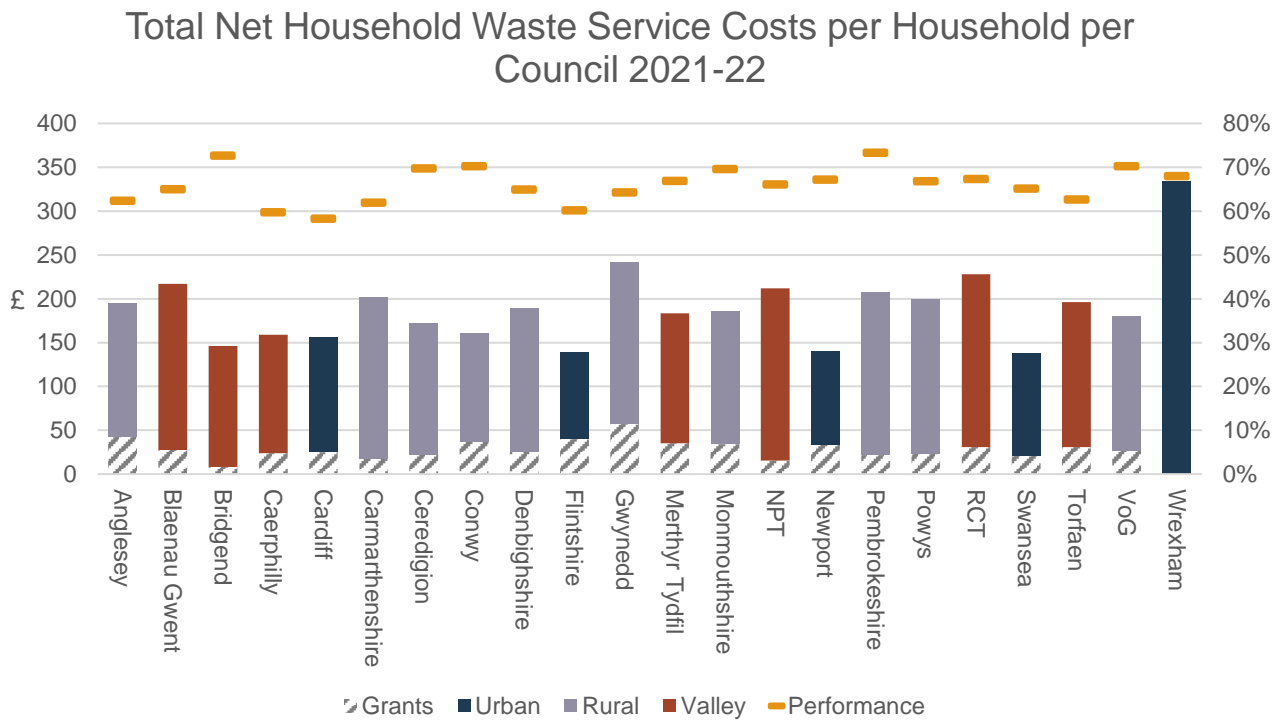


Figure 7 - Total household waste service cost per household

Total Net Household Waste Service Costs per Tonne per Council 2021-22

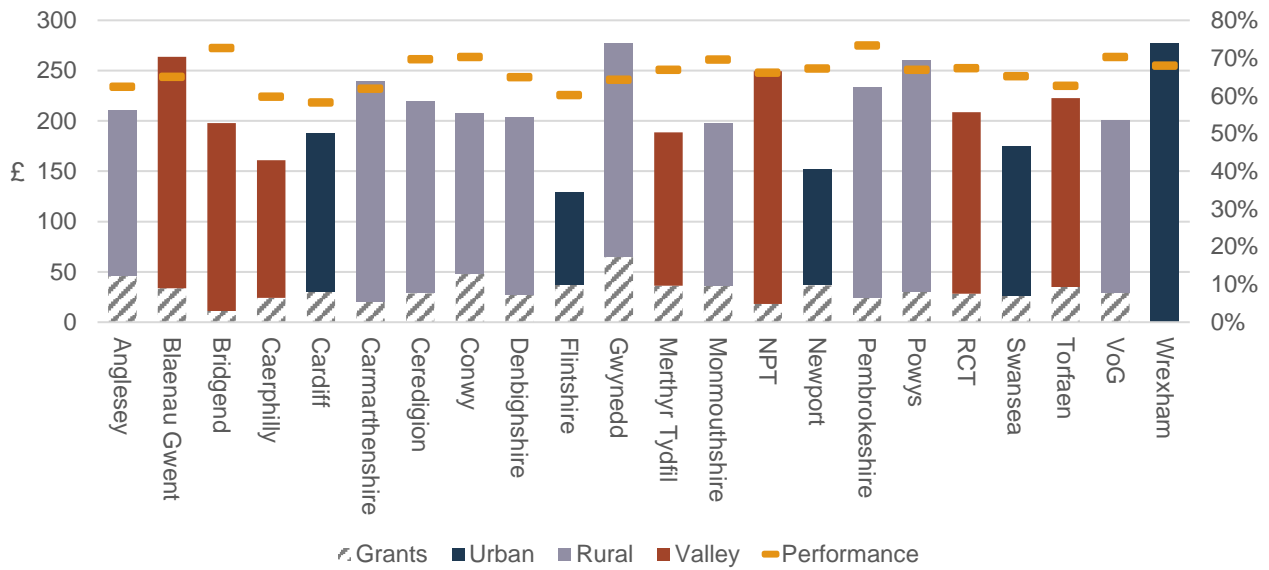


Figure 8 – Total household waste service cost per tonne

19. Overall net expenditure on household waste services during 2021/22 was £270,654,288. This represents an increase in expenditure of £1,835,330; 0.7% when compared to 2020/21. CPI for the 12 months to April 2022 was 3.98% so this represents an actual decrease of 3.3% in real terms. During the same period, the overall recycling rate for Wales decreased from 65.4% to 65.2%.

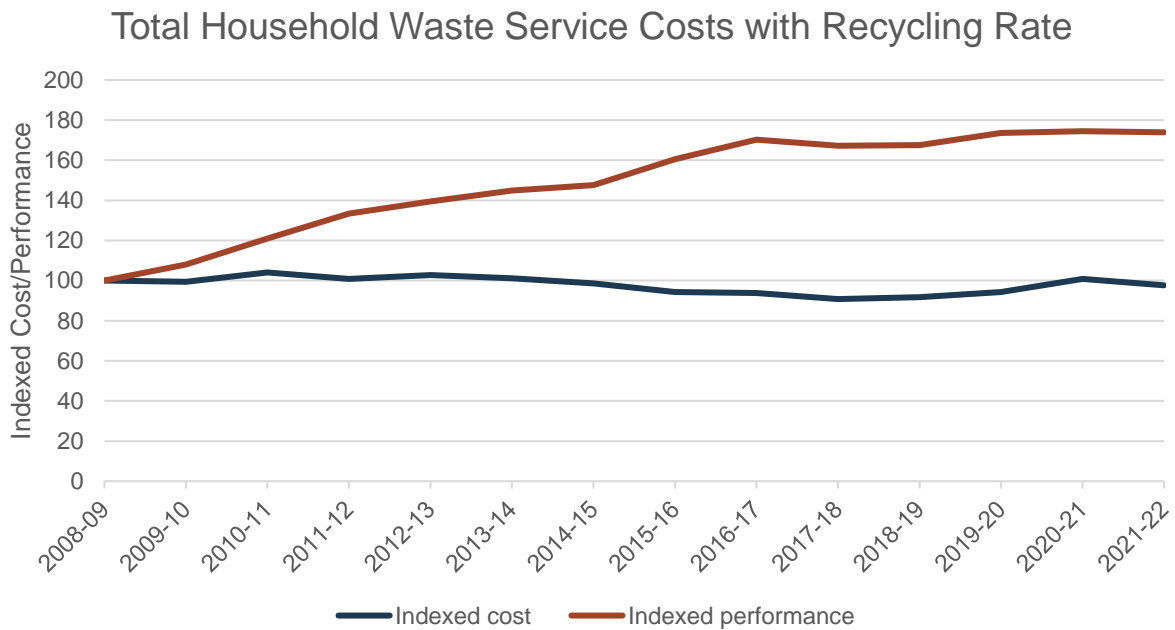


Figure 9 – Household waste service cost since 2008/09

20. The longer-term trend in household waste service costs and performance is shown in Figure 9 and is similar to that of figure 1 (total waste service costs over time). Expenditure on household waste service costs have remained fairly stable over the past fourteen years. Following a period where costs decreased year on year (2013/14 – 2017/18), costs began to increase between 2018/19 and 2020/21, with 2020/21 seeing the largest indexed increase since 2008/09. This again highlights the financial impact of the pandemic, with the decrease of expenditure in real terms during 2021/22 reflecting a move towards returning to 'normal'. As mentioned earlier recycling rates have increased significantly since baseline data began.

5. Dry Recycling

21. The following graphs show costs associated with dry recycling services provided by councils on both a cost per household and cost per tonne basis. Service performance, in terms of mass of dry recyclate collected as a proportion of total MSW, is also shown as orange lines on the chart, plotted using the axis on right hand side of graph.

5.1 Total dry recycling service cost

22. Figure 10 & Figure 11 show the total cost of providing a kerbside recycling service. Costs shown are net of any income received. Data includes costs of collection, transfer, treatment, and disposal of recyclate. It is important to note that some costs may include additional covid expenditure. Colour coding denoting type of collection system in place by council and contribution made by grant is retained, the contribution is higher compared to overall expenditure due to grant expenditure being targeted towards recycling services and prohibited from residual waste services.

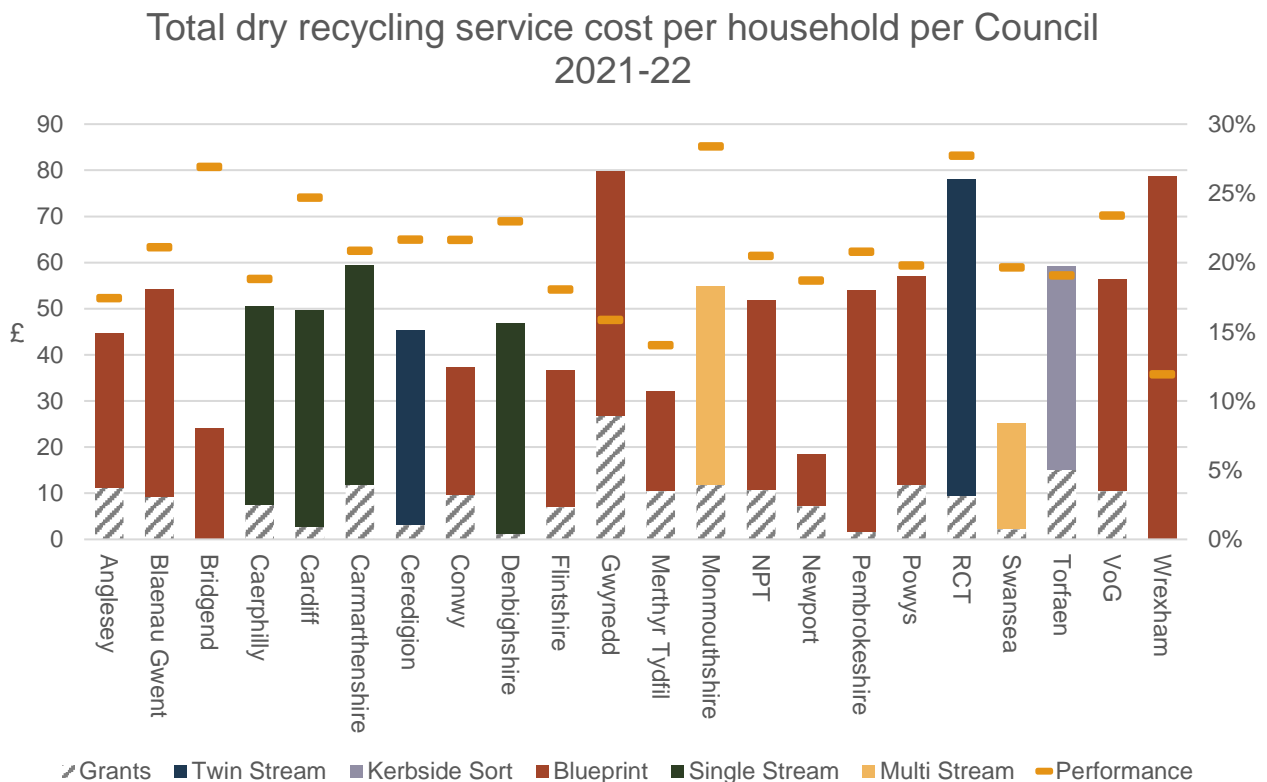


Figure 10 – Dry recycling service cost per household

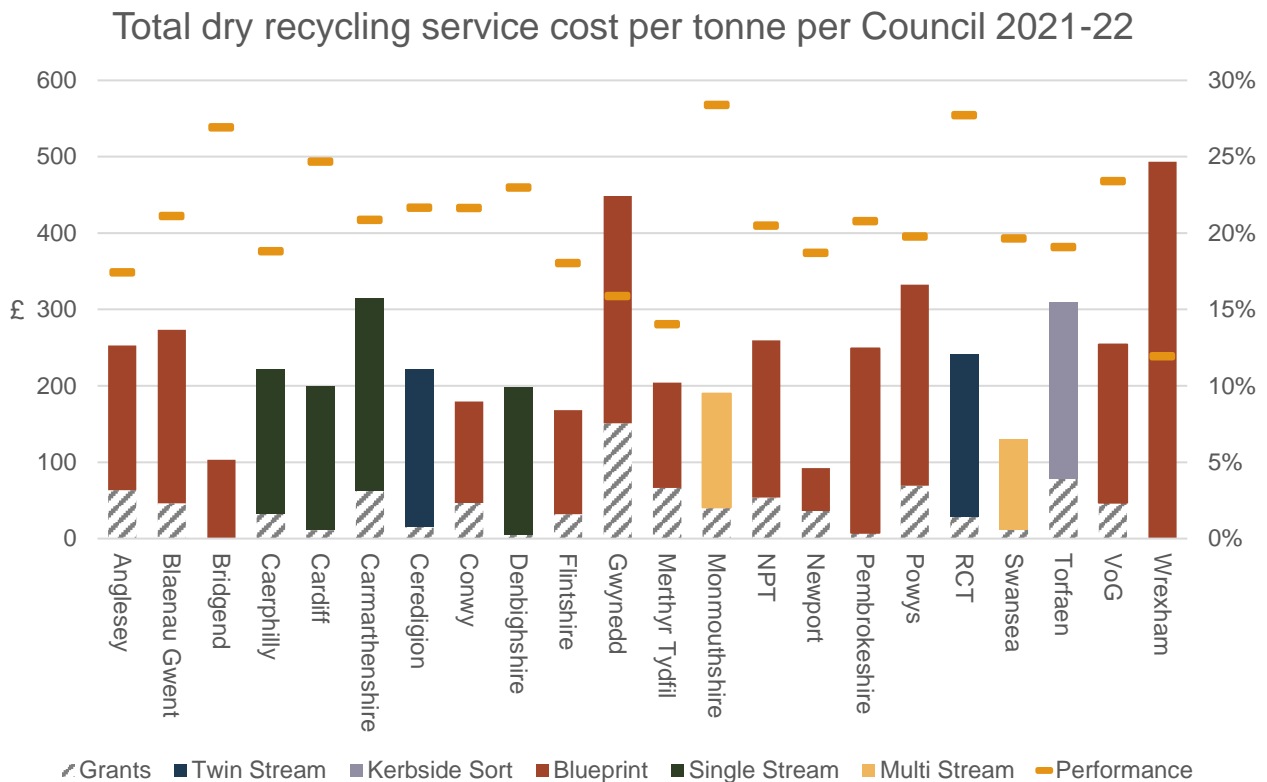


Figure 11 – Dry recycling service cost per tonne

23. It is clear from the graphs that both cost and performance vary significantly. Ideally, services should deliver high performance, in terms of mass recycled, whilst exhibiting the lowest cost possible. For example, Bridgend’s dry recycling service makes a significant contribution to their overall recycling rate, with 27% of total MSW being collected via their kerbside collection scheme, whilst service cost is one of the lowest seen across the group at £24 per household. It is worth noting that councils with private contractors are not always able to break costs down and therefore costs presented may not be full costs.

24. The range of values seen in the data is slightly larger than in 2020/21. The median cost per household has increased from £50.16 to £51.16 per household. The median cost per unit mass has also increased, increasing from £221 to £232 per tonne.

25. From the core data it is also possible to compare 2021/22 overall dry recycling service expenditure with that of 2020/21:

	20/21	21/22	% Change	21/22 cost per hh
Dry recycling	£74,563,560	£72,716,141	-2.48%	£50

26. Expenditure on dry recyclate services decreased by 2.48% during 2021/22. Whilst expenditure decreased, the mass of material collected also decreased over the same period. Mass collected decreased by nearly 13,000 tonnes, a decrease of 4%. The decrease in mass collected is likely to be due to a significant increase the year before; the

height of the pandemic where lockdown restrictions required millions of people to stay at home resulting in an increase in kerbside tonnage. 2021/22 saw restrictions lifted and a part return to 'normal' which is highlighted by the drop in dry recyclate collected from the kerbside.

27. The longer-term trend in kerbside dry recycling costs is shown in Figure 12. The graph highlights a significant decrease in expenditure during 2021/22 following a sharp increase the year before (2020/21) due to the pandemic. The longer-term trend shows that recycling performance appears to be linked to expenditure on the service, however, this is not the case over the last couple of years, most likely due to councils responding to pandemic restrictions.

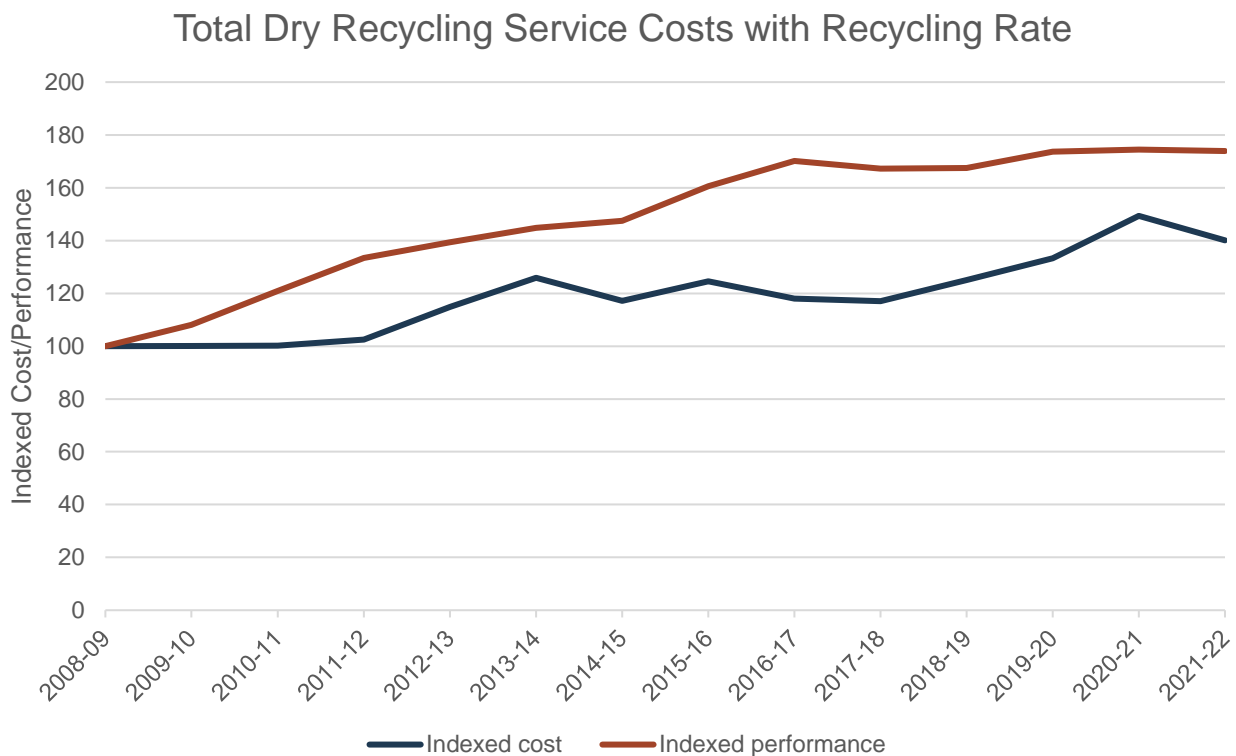


Figure 12 – Kerbside dry recycling cost since 2008/09

5.2 Collection

28. From the data it is possible to plot the individual component costs of the service. Graphs in 13 & 14 show the dry recycling collection cost on both a per household and per tonne basis net of any income. Collection systems vary across the group, colour coding shows what type of collection system was in place during 2020/21. Refer to [Appendix A](#) for more information on service detail during 2020/21.

29. Costs arising from the collection of the dry recyclate itself makes up the majority of overall service cost; accounting for 83% of the service cost in 2021/22, an increase of 8

percentage points from 2020/21. This increase is likely to be linked to the increase in sale of dry recycle during 2021/22.

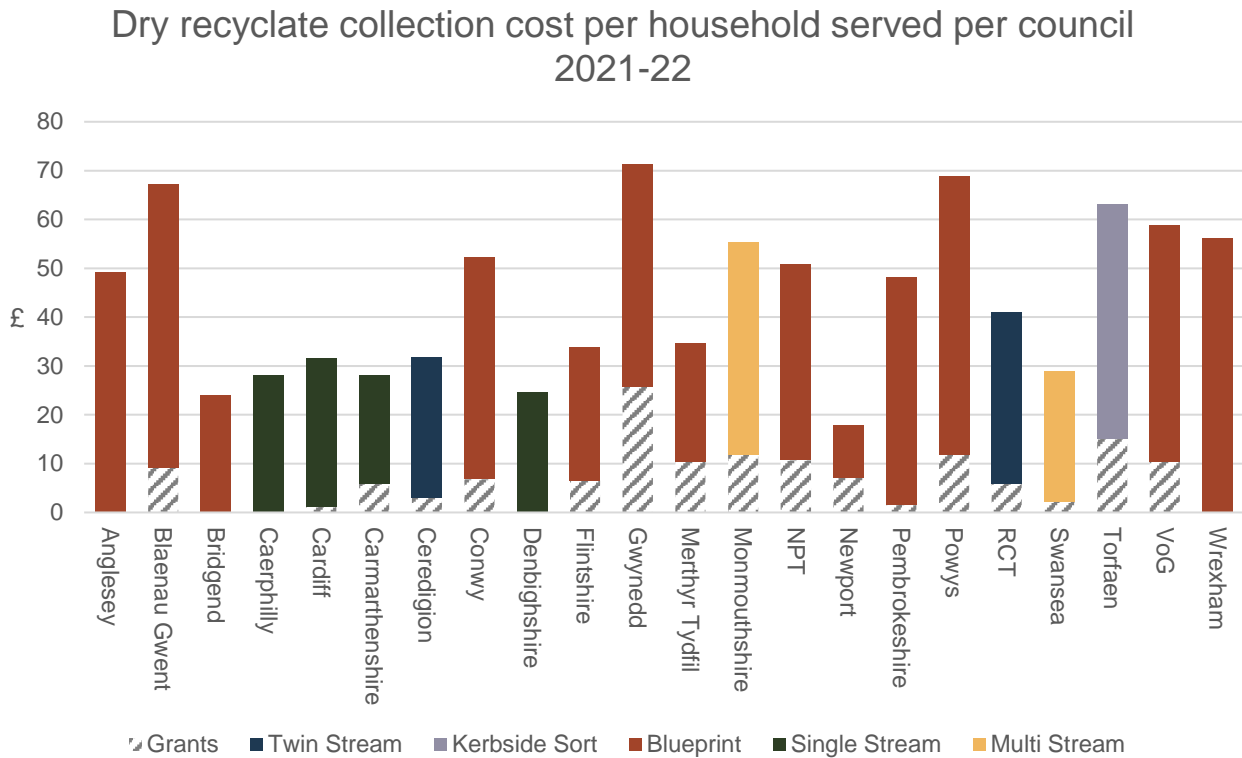


Figure 13 – Dry recycle collection cost per household served.

30. Between 2020/21 and 2021/22 dry collection service costs increased, increasing from £56.2m to £60.2m. The graph shows that the cost per hh differs significantly across councils, ranging from £18 to £71 per hh. There are many factors which contribute to cost variations, these factors may include collection methods, rurality, frequency, vehicles, outsourced / in house services etc. It is worth noting that some councils outsource their collection service and a full breakdown of costs is not always available.

Dry recycle collection cost per tonne per council 2021-22

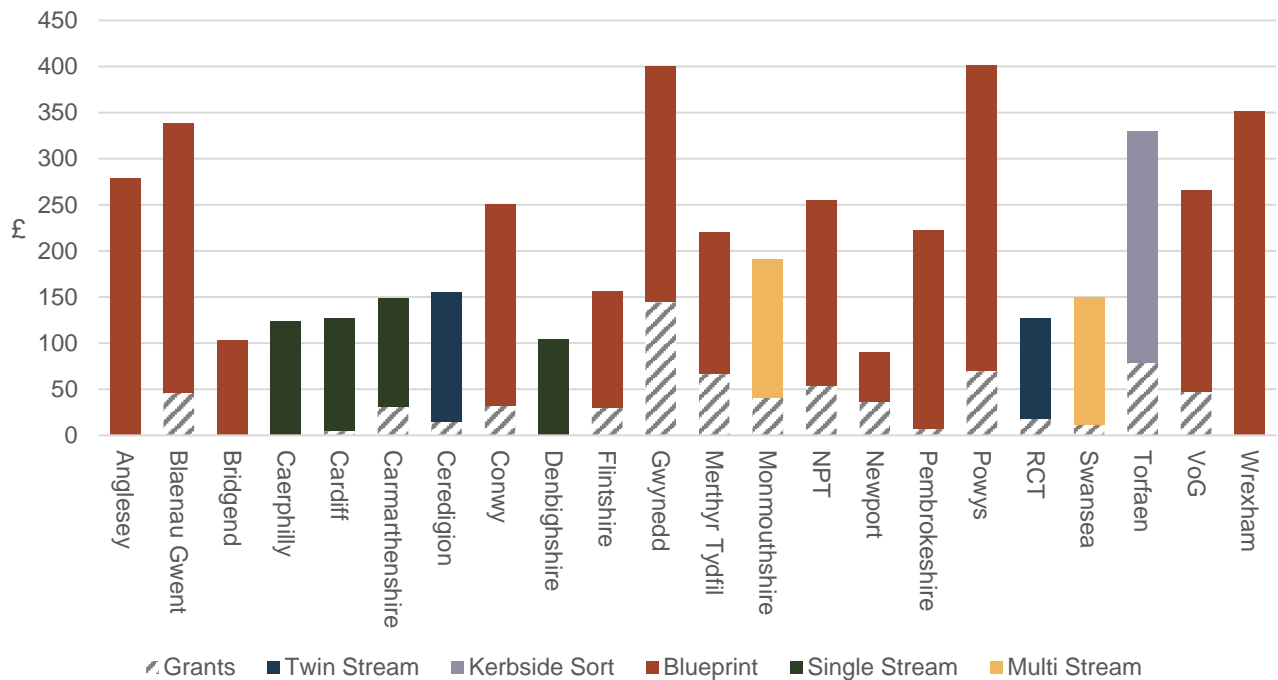


Figure 14 – Dry recycle collection cost per tonne collected.

31. Figure 15 below shows that urban councils demonstrated the lowest median net cost per hh on dry recycle collection costs in 2021/22 at £32 per hh. For valley and rural councils the figures were higher at £41 per hh and £51 per hh respectively. The Wales median was £45 per hh. Rural councils were £10per hh more expensive than the Wales median suggesting that rurality, a factor which is out of a council’s control can be a significant factor in higher collection costs. This is likely to be due to population density, mileage, transport costs etc. It is worth noting that six out of the ten rural councils were blueprint compliant during this period.

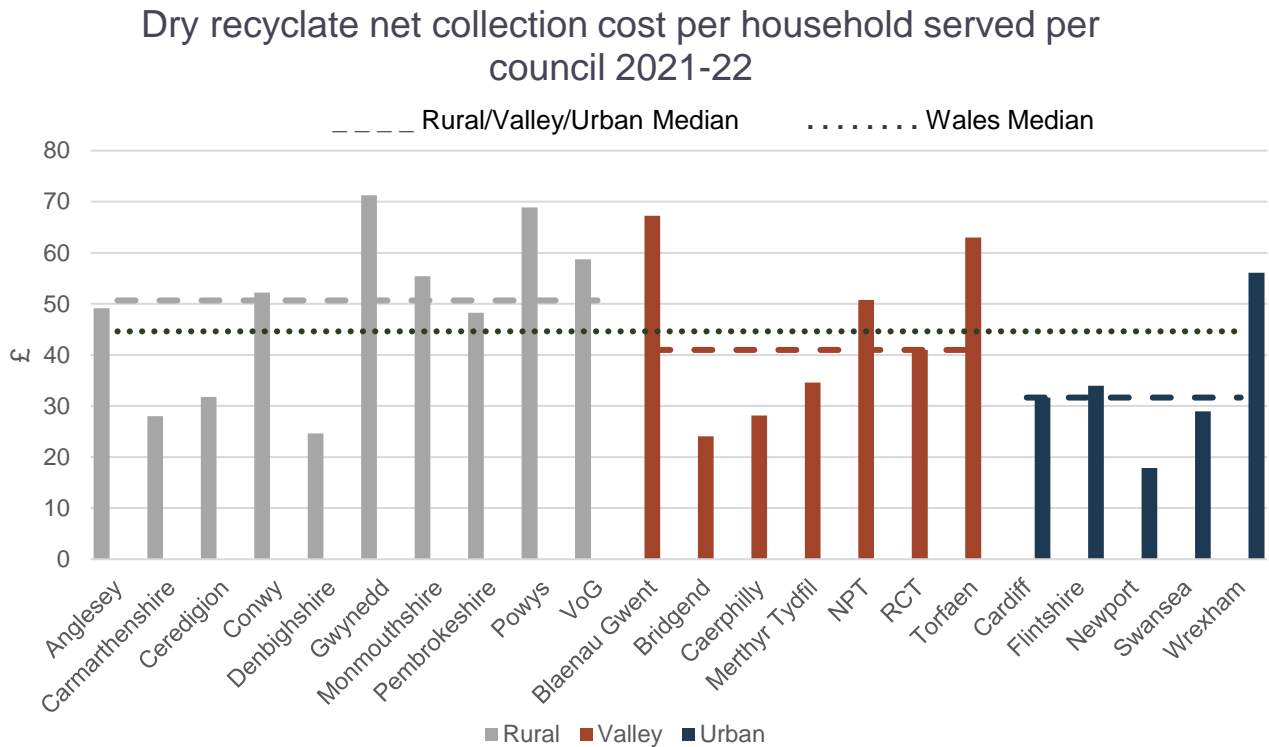


Figure 15 – Dry recycle collection cost per hh

5.3 Transfer costs

32. According to data provided, few councils incur costs from transfer of recycle following its collection. In some cases, contractual arrangements mean that these costs are included with treatment costs. Transfer costs that are incurred are low relative to overall service cost. For brevity, charts detailing transfer costs are not contained within the body of the report but are available on request.

5.4 Treatment costs

33. Figure 16 & 17 show the costs incurred from treatment of collected dry recycle. Costs are shown both as a cost per household served and a cost per tonne. Treatment costs can be defined as the cost of handling and/or segregating materials collected, such as treatment of materials at an MRF.

Dry recycling treatment cost per household served per council 2021-22

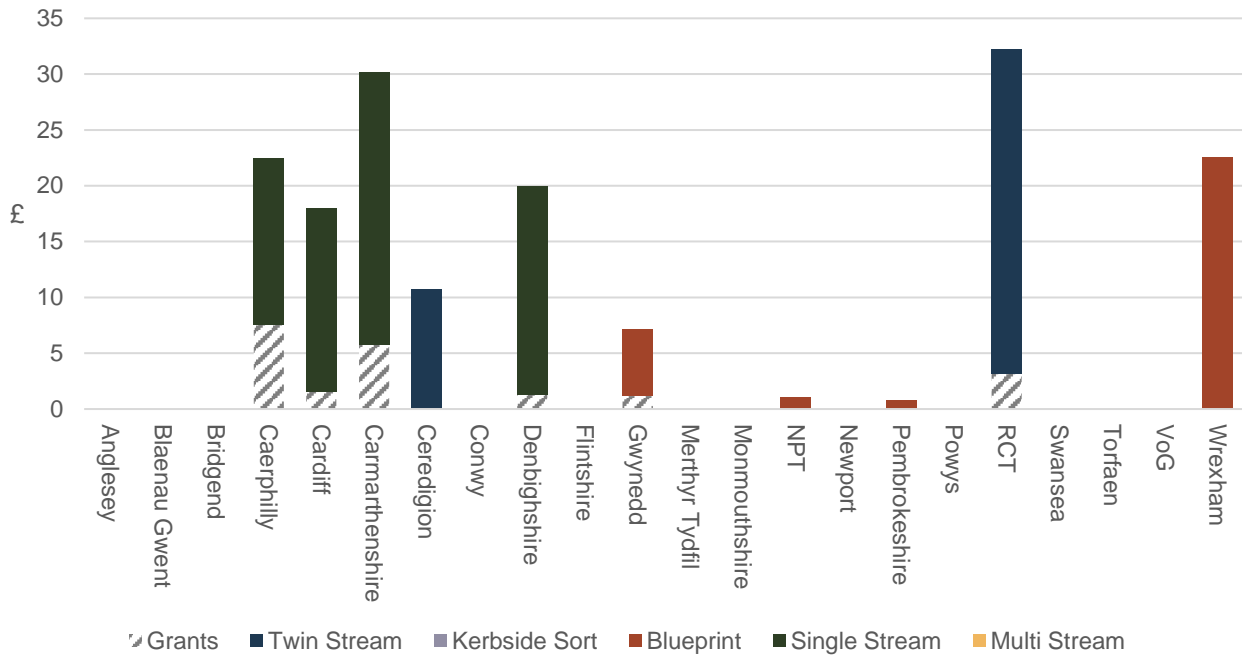


Figure 16 – Dry recycling treatment cost per household served

Dry recycling treatment cost per tonne per council 2021-22

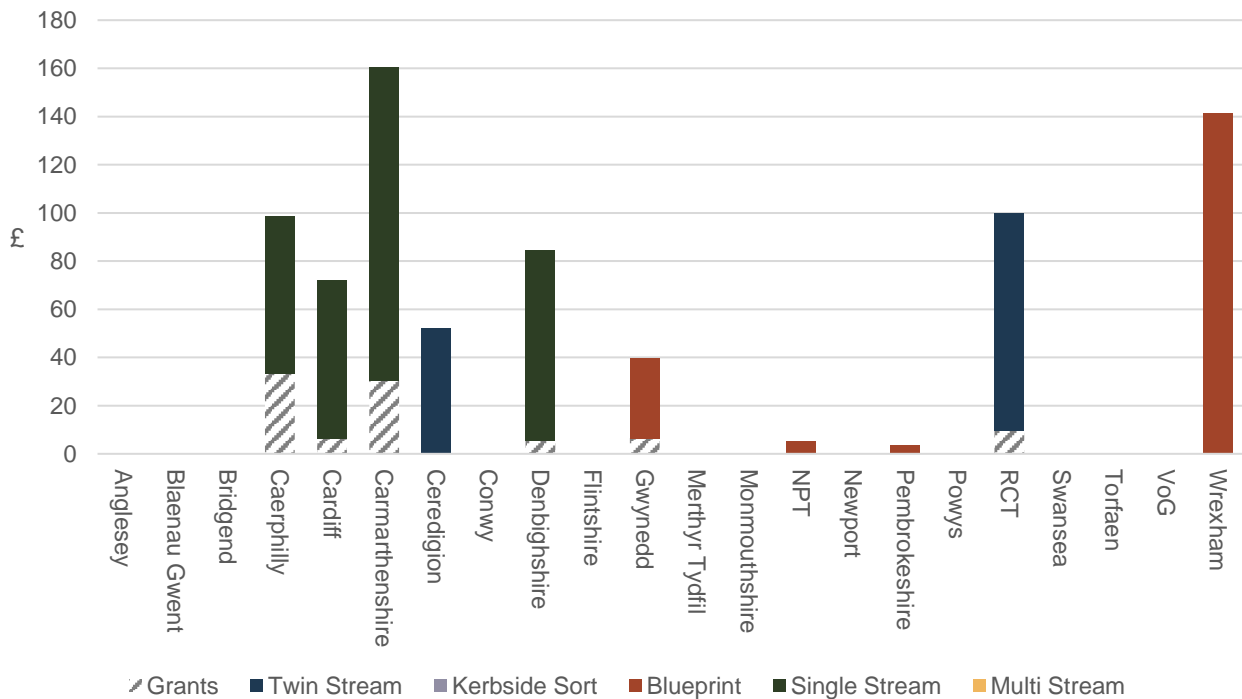


Figure 17 – Dry recycling treatment cost per tonne

34. Between 2020/21 and 2021/22 dry recyclate net treatment costs decreased significantly, decreasing by £6.6m, from £15.4m to £8.8m. This decrease can be attributed to the increase in sale of dry recyclate between 2020/21 and 2021/22. Figure 16 and 17 shows a wide variation in treatment costs across the group. This likely reflects the differing recycling systems and contractual arrangements in place across Wales, with councils employing differing treatment, methodologies depending on the collection system used. (e.g. MRF, Sorting/Baling only etc).
35. Nearly half of Wales's councils exhibit a negative cost for treatment activities and therefore no bar is present (these include Anglesey, Blaenau Gwent, Conwy, Flintshire, Merthyr Tydfil, Monmouthshire, Powys, Swansea, Torfaen, and Vale of Glamorgan). This occurs when the income received from the sale of the recyclate treated is greater than the cost of treatment activities themselves. Dry recycling treatment costs are unavailable for Bridgend and Newport and therefore not included.

5.5 Income

36. Charts in Figure 18 & 19 show the amount of income received from the sale of collected materials on a per household served and per tonne basis. Income varies significantly across the group and reflects the differing service configurations and contractual arrangements in place for the treatment of the material collected. For contractual reasons, it is possible that some councils' recyclate income has been netted off when recording the figures and therefore showing as no income in figures 18 and 19. These variables mean that this data must be viewed as a starting point to interrogate differences and should not be relied on solely to explain each council's actual position.
37. Overall income from the sale of dry recyclate more than doubled between 2020/21 and 2021/22, increasing to £12.2m, the highest recorded since baseline data began in 2008/09. The significant increase in sale of dry recyclate can be attributed to an increase and recovery of market rates following the pandemic, resulting in greater prices per tonne being received by councils following the pandemic. Improved kerbside services would likely improve contamination rates and therefore increase the income from the sale of dry recyclate for some councils. This increase follows a decrease in 2020/21 due to a reduction in the price per tonne for materials as a result of the pandemic.
38. According to the data and noting the caveats above, blueprint councils on the whole received the highest median income from sale of dry recyclate on a per tonne basis when compared to other methods, this could suggest higher material quality and less contamination/non target materials from blueprint councils. Blueprint councils demonstrated a median cost per tonne of £81.85, £12 more than other collection methods when grouped together.

Income from sale of dry recycleate per household served per council 2021-22

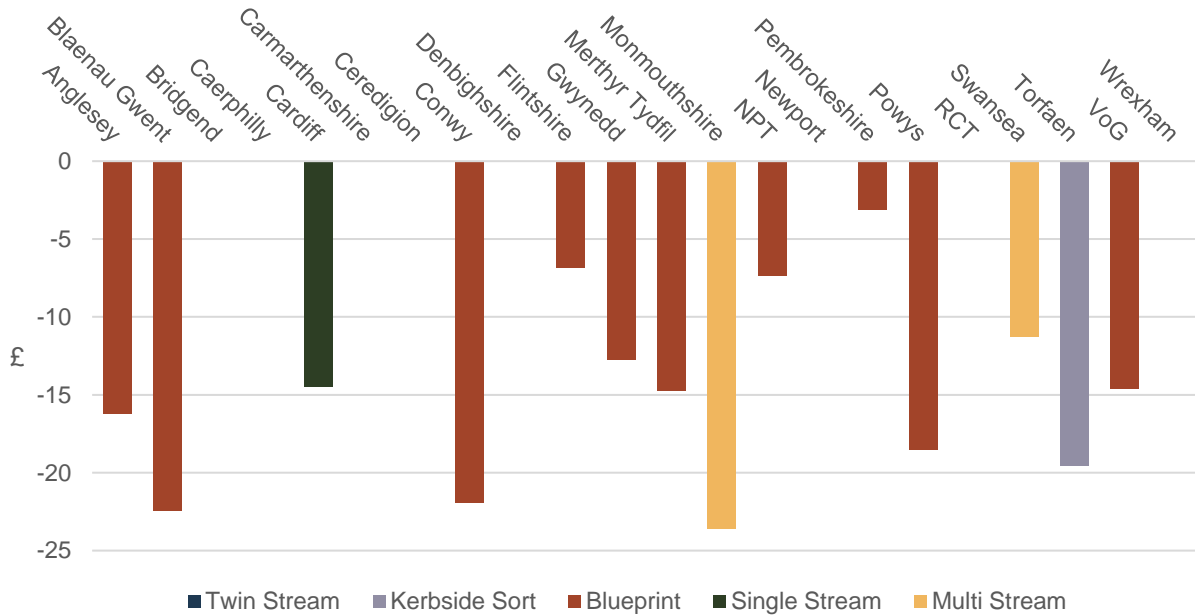


Figure 18 – Income from sale of dry recycleate per household served

Income from sale of dry recycleate per tonne per council 2021-22

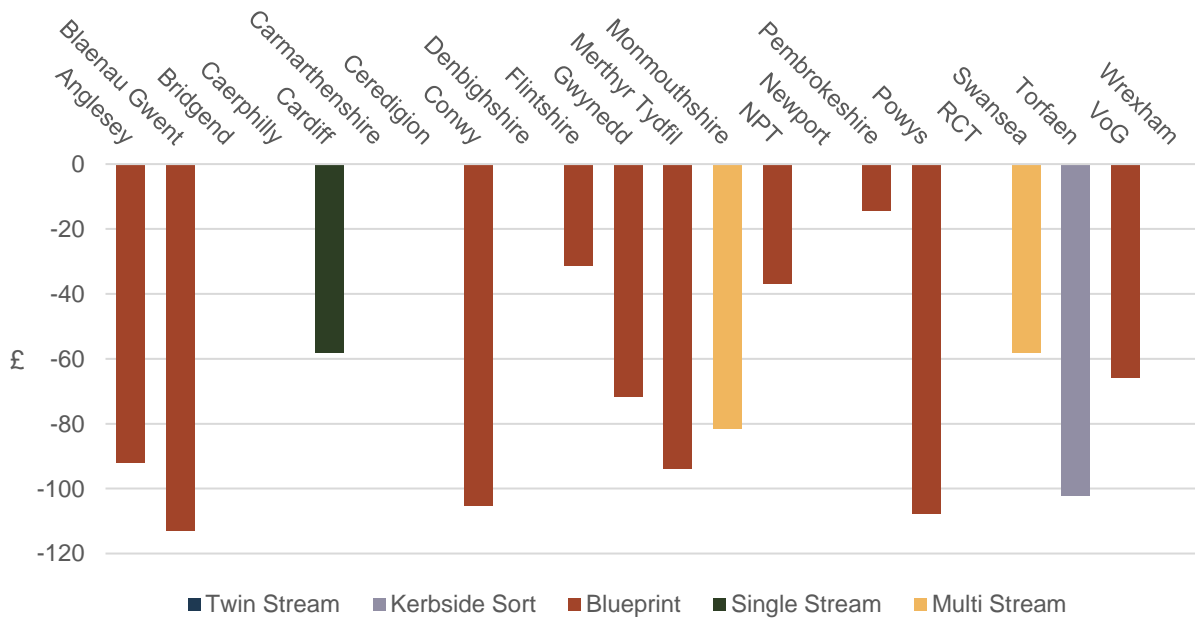


Figure 19 – Income per tonne from sale of dry recycleate

6. Organic Waste Services

39. All twenty-two councils collect food and green waste separately (Caerphilly and Cardiff co-collect food and green waste for a very small number of properties), therefore, organic waste data is split across two headings; food waste services and green waste services.

40. For all organics collections it can be seen that there are wide variations in costs across the group. The variation in costs is most pronounced when comparing on a per tonne basis.

41. If all costs associated with organic collection services are aggregated, it is possible to compare total expenditure in 2021/22 with that of 2020/21:

	20/21	21/22	% Change	21/22 Cost per hh
Organic	£55,866,396	£56,189,247	+0.58%	£38.63

42. Performance in terms of total organic waste mass collected from the kerbside decreased in 2021/22, decreasing by 10,000 tonnes when compared to 2020/21. Councils have observed that with changes to the growing seasons and extended dry periods that green waste can vary significantly between periods.

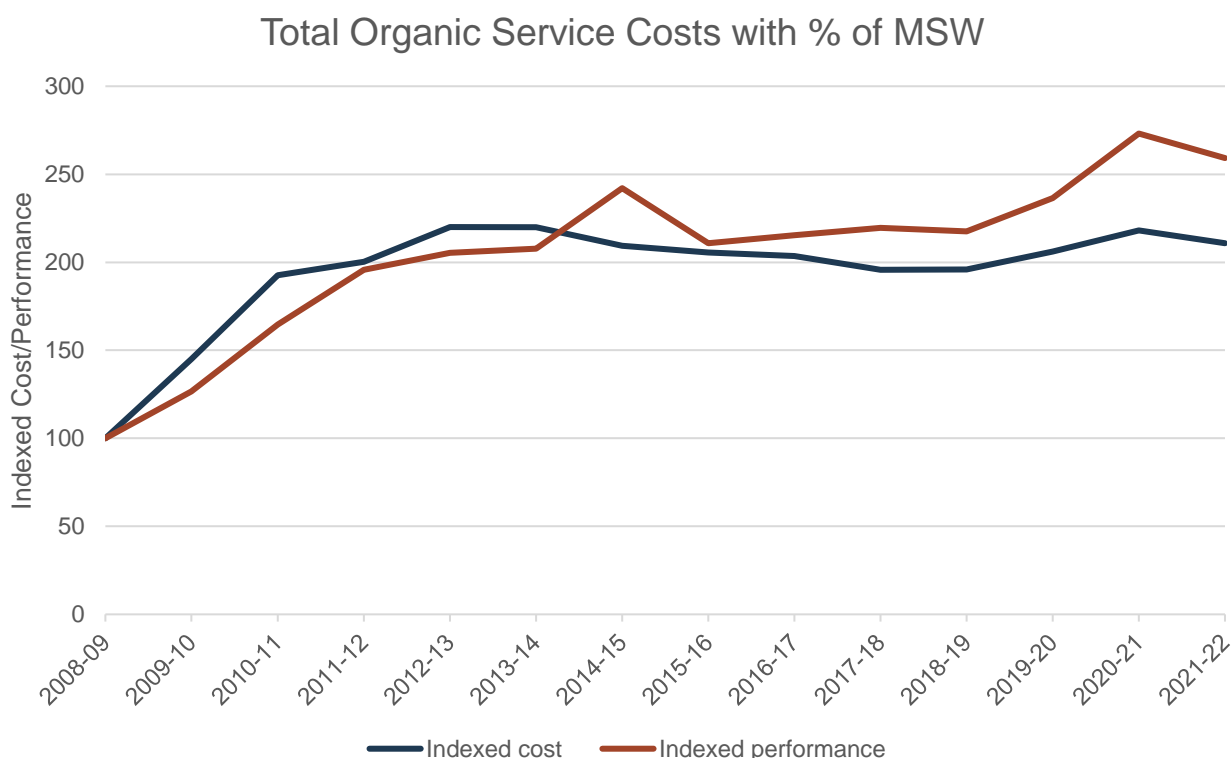


Figure 20 – Organic waste costs since 2008/09

43. The longer-term trend can be seen in Figure 20. Since baseline data began in 2008/09 there has been significant investment in organic waste services with virtually all Welsh households now served by a collection scheme. The expansion of services has seen the total mass of organic waste, as a proportion of total MSW rise greatly over the same period as shown by the red line in figure 20. The increase in performance over recent years is likely to be related to garden waste collections becoming more established across Wales as well as the continuation of reduction of residual waste capacity and frequency, all of which is likely to have an impact on organic mass collected. 2021/22 saw a decrease in both performance and expenditure in real terms. This follows a sharp increase the previous year which can be attributed to the pandemic and highlights a return towards 'normal'. As councils start to charge for green waste services, it will be interesting to note the impact on performance.
44. Organic material collected at the kerbside will require some form of treatment. Costs incurred will be dependent on several factors including overall mass sent for treatment and treatment methodology employed. Food waste from all twenty-two councils is sent to one of five anaerobic digestion plants.
45. Councils are required to transfer collected material to treatment facilities. Costs incurred are relatively low in comparison with overall service cost, so for brevity are not included in main report. Similarly, costs incurred from disposal/landfill of non-compostable material (contamination) and incomes generated by organic waste services are low, data is therefore not included in main report.

6.1 Food Waste Services

46. The total net cost of providing food waste collection is shown in Figure 21 (cost per household served) and Figure 22 (cost per tonne collected). The performance of the service (i.e. the contribution of recycled food to overall recycling performance) is shown on the right-hand axis and can be seen as the orange lines on the chart. It should be remembered that in practice food waste is often collected with other waste streams, usually dry recycling for kerbside sort councils. In these cases, the figures are calculated using apportionment.

Total food waste service cost per household per Council 2021-22

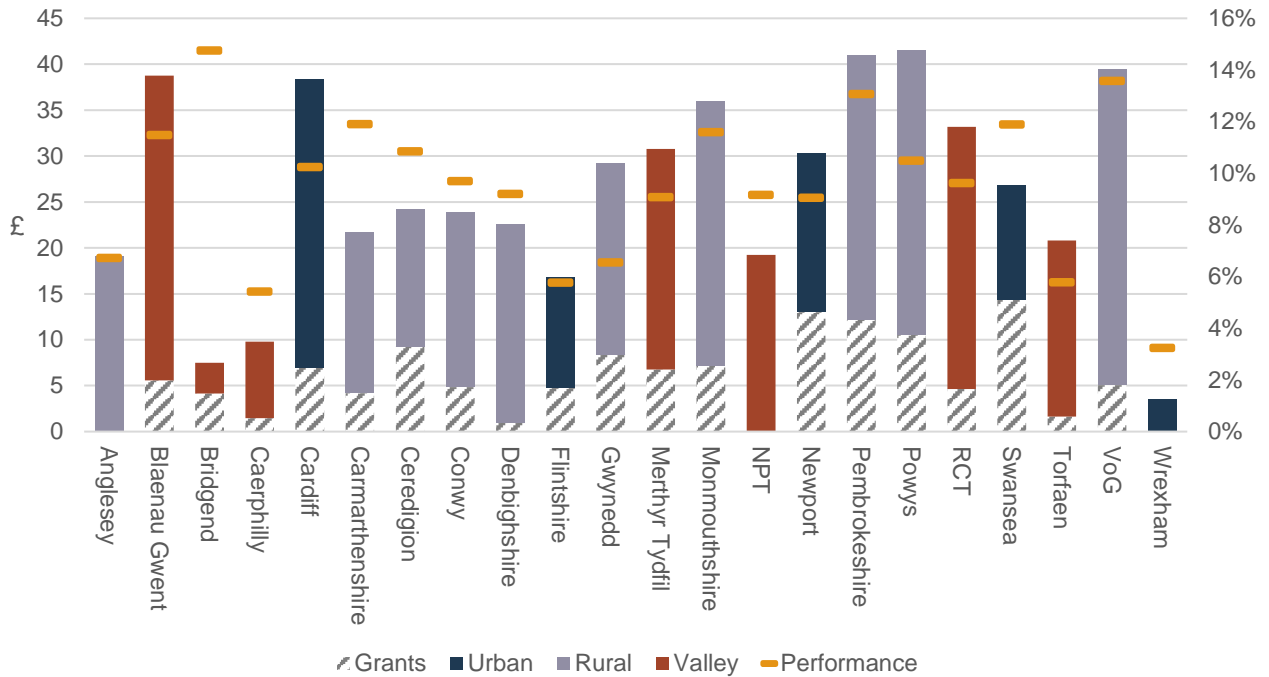


Figure 21 – Food waste service cost per household served.

Total food waste service cost per tonne per Council 2021-22

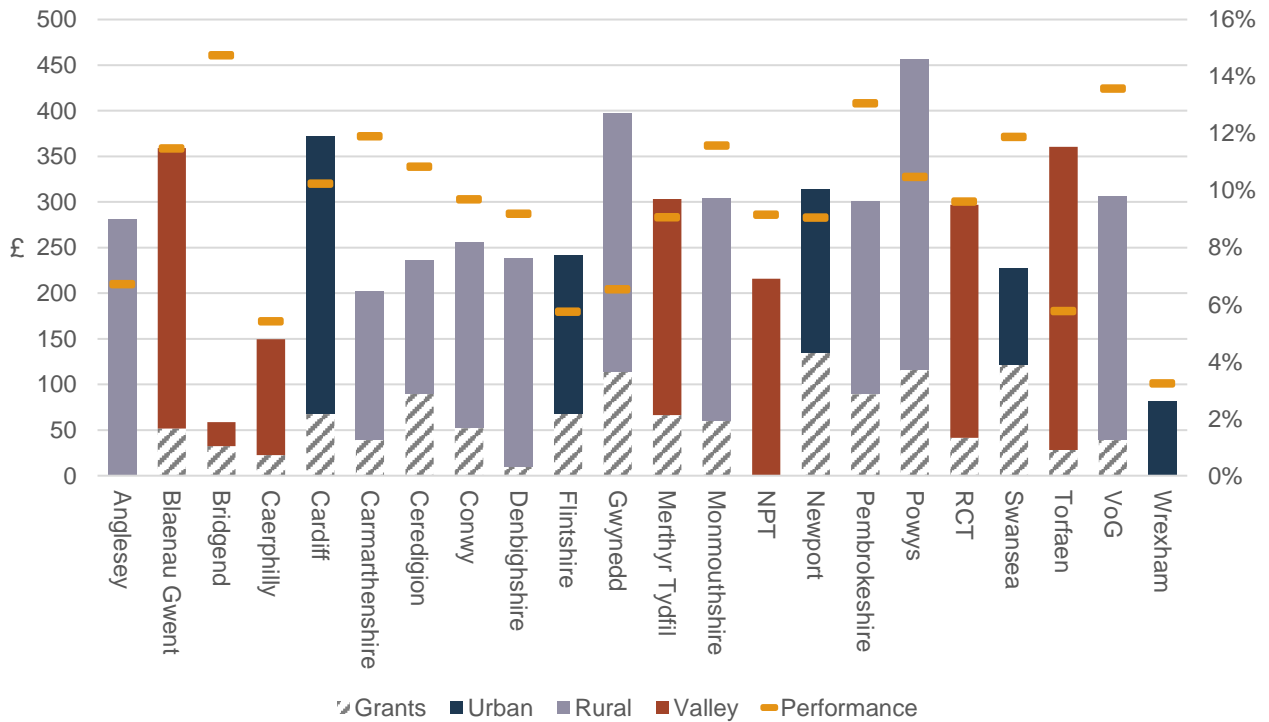


Figure 22 – Food waste service cost per tonne

47. Both cost and performance vary across the group. There is wide variation in yield as % of total MSW, from 3.2% to 14.7%, a slight decrease when compared to 2020/21. Food waste recycled as % of MSW has decreased slightly between 2020/21 and 2021/22. Greater divergence between cost bar and performance bar is likely to signify a higher performing service. For example, the service operated by Bridgend, exhibits both a low cost and high yield.
48. In 2021/22 overall food waste service costs increased by £1.7m, an increase of 4.7%, with median costs increasing by just 23 pence per hh when compared to 2020/21. When taking inflation into account the increase in food waste expenditure in real terms reduces to 0.68%.
49. Overall, food waste tonnage decreased by 3.2% (4,760 tonnes), linked to this, food waste decreased its contribution to overall recycling from 9.8% in 2020/21 to 9.4% in 2021/22. The decrease in food waste collected at the kerbside is likely to be due to an increase the year before (2020/21) which can be attributed to pandemic restrictions where people were required to stay at home resulting in more food waste being presented at the kerbside. As things started to return to 'normal' and people returned to work, this resulted in less food waste being presented at the kerbside during 2021/22. When comparing with pre pandemic data, food waste tonnage increased, increasing from 131,498 tonnes to 141,785 between 2019/20 and 2021/22.

6.1.1 Food waste collection

50. Food waste collection costs are shown in Figure 23 (cost per household served) and Figure 24 (cost per tonne collected).

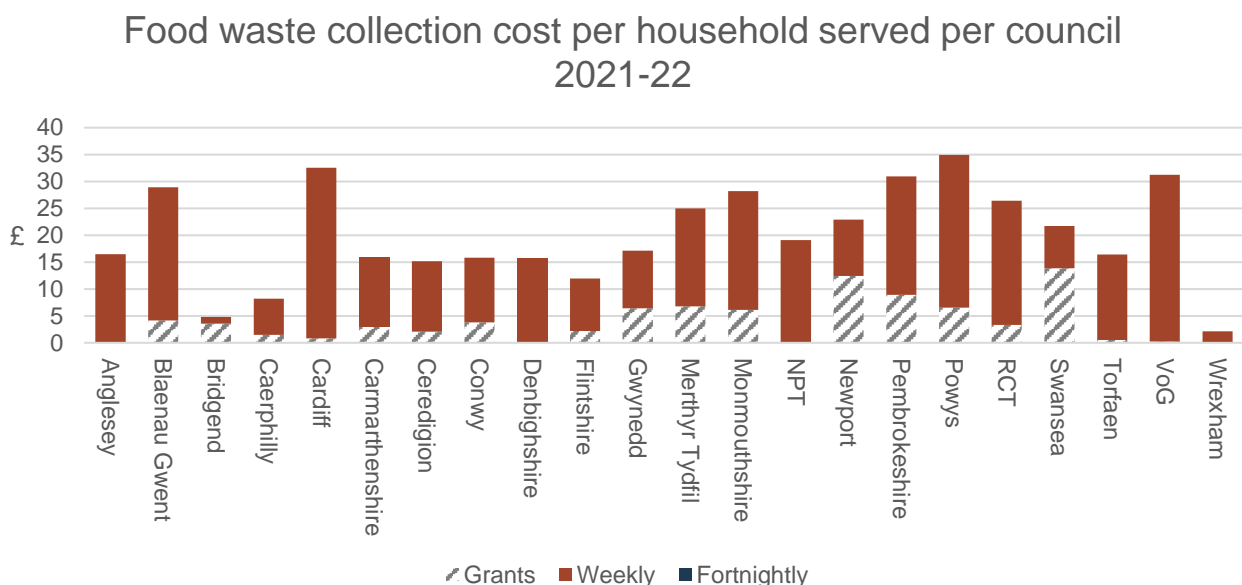


Figure 23 – Food waste collection cost per household served.

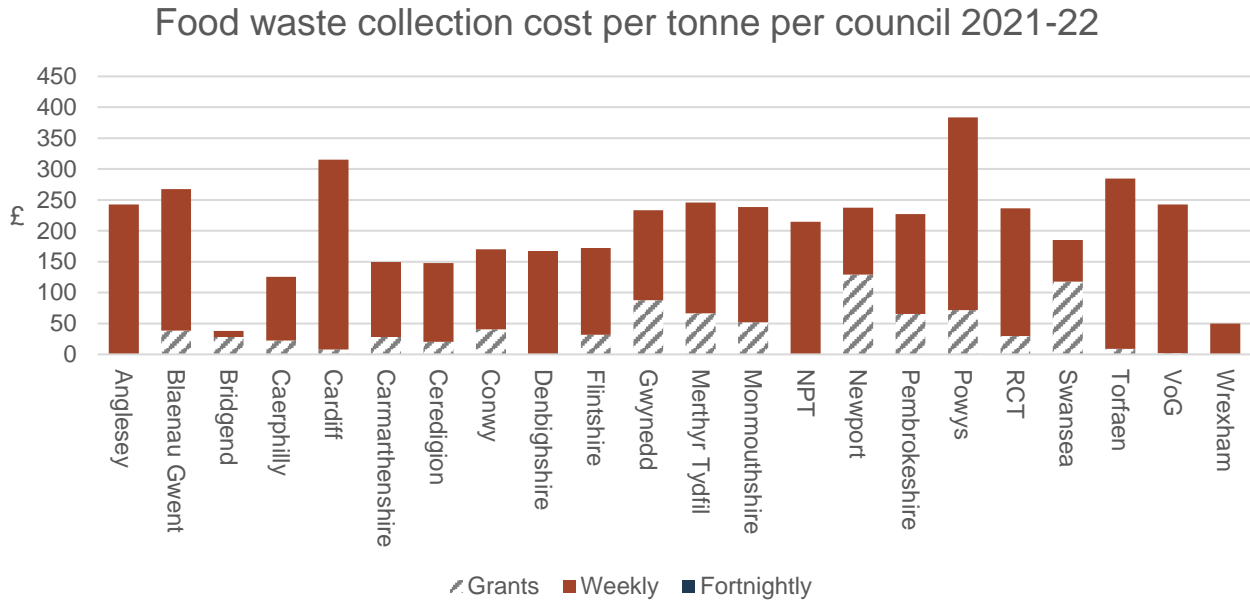


Figure 24 – Food waste collection cost per tonne

6.1.2 Food waste treatment

51. Food waste treatment costs are shown in Figure 25 (cost per household served) and Figure 26 (cost per tonne collected).

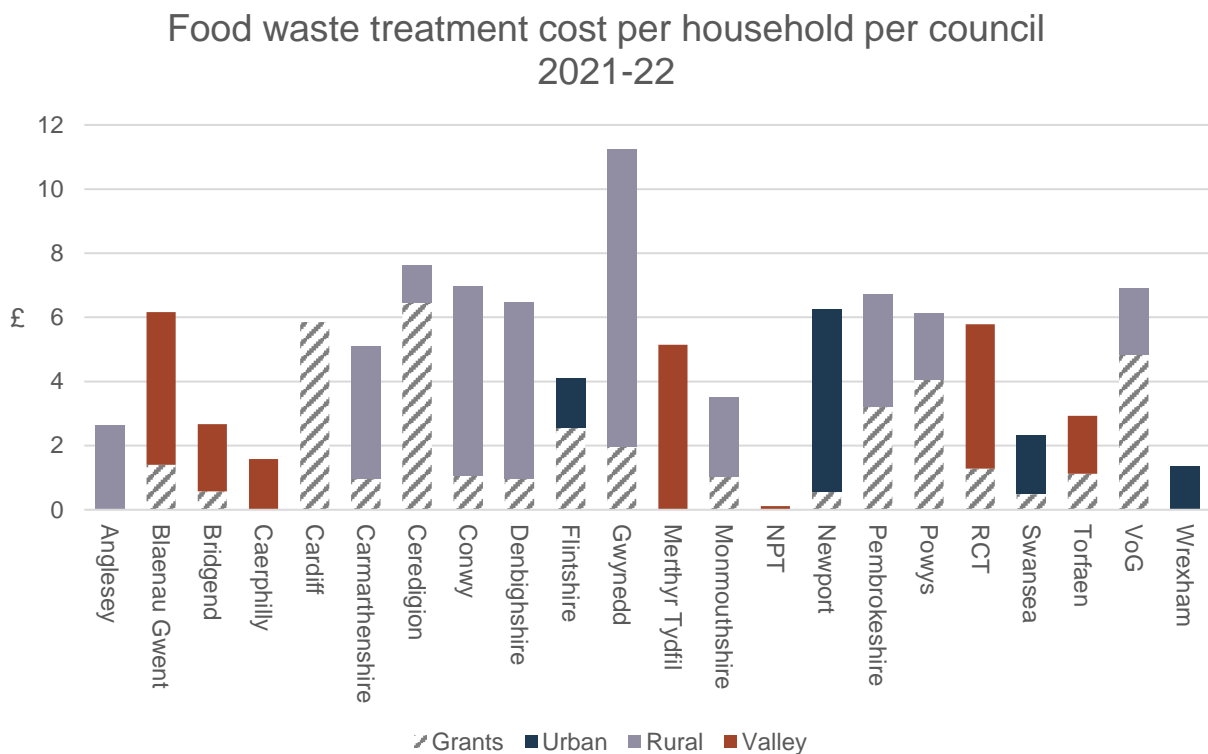


Figure 25 – Food waste treatment cost per household served.

Food waste treatment cost per tonne per council 2021-22

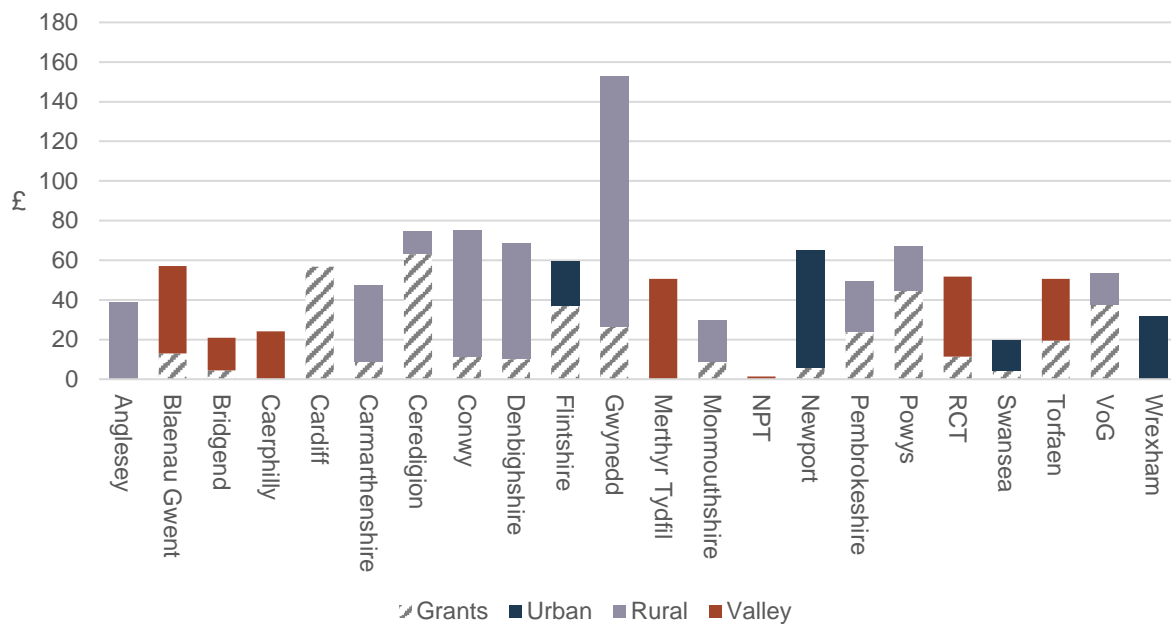


Figure 26 – Food waste treatment cost per tonne

52. Wide variation exists across the group for food waste treatment costs. The median cost is £51.24 per tonne; an increase of just 16 pence when compared to 2020/21.

6.2 Green Waste Services

53. In 2021/22 overall green waste service costs decreased by £1.4m, a decrease of 7.5% with median costs increasing by 42 pence when compared to 2020/21. When taking inflation into account we can see a further decrease in real terms of 11.4%.

54. Overall tonnage decreased by 5,318 tonnes. Linked to this, green waste’s contribution to overall recycling also reduced, reducing from 7.8% in 2020/21 to 7.5% in 2021/22. The decrease in green waste collected at the kerbside is likely to be due to an increase the year before (similar to food waste) which can be attributed to Covid-19 restrictions, where people were required to stay at home resulting in more people spending time in their gardens and therefore more green waste being presented at the kerbside. As things started to return to ‘normal’ and people returned to work, this resulted in less garden waste being presented at the kerbside during 2021/22. When comparing with pre covid data (2019/20), green waste tonnage has increased from 101,126 tonnes to 112,483 highlighting an increase in participation.

55. Due to COVID-19 regulations and restrictions during the height of the pandemic, some councils prioritised core service collections. In some cases, this resulted in the temporary suspension of green waste collections during 2020/21. Ceredigion has been excluded from the green waste graphs in this report due to the suspension of their green waste services carrying through into 2021/22.

56. During 2021/22 half of Welsh councils charged residents for the collection of green waste from the kerbside⁸ via annual subscriptions. It is worth noting that over the last few years an increasing number of councils have reduced their collections to include seasonal restrictions. Four councils collected green waste weekly during the main season, whilst the remaining eighteen councils collected green waste on a fortnightly basis. For more information on service detail refer to [Appendix A](#).

57. The total net cost of providing separate green waste collections is shown in Figure 27 (cost per household served) and 23 (cost per tonne collected). It is important to note that the cost is divided by the total number of households not the number of users or subscribers. The performance, in terms of the contribution of recycled green waste to overall recycling performance is shown on the right-hand axis and can be seen as the orange line on the chart.

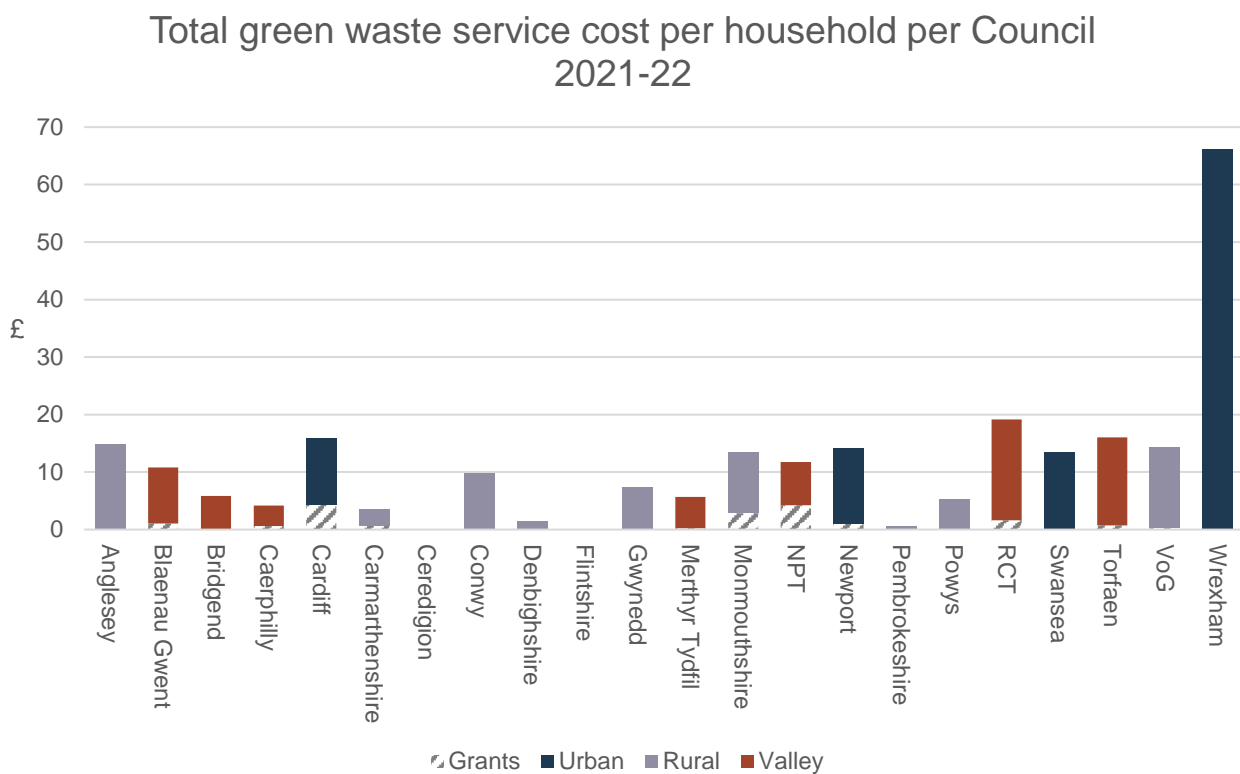


Figure 27 – Green waste service cost per household per council.

⁸ Ceredigion also charge for the collection of green waste but the service was suspended for the large part of 2021.

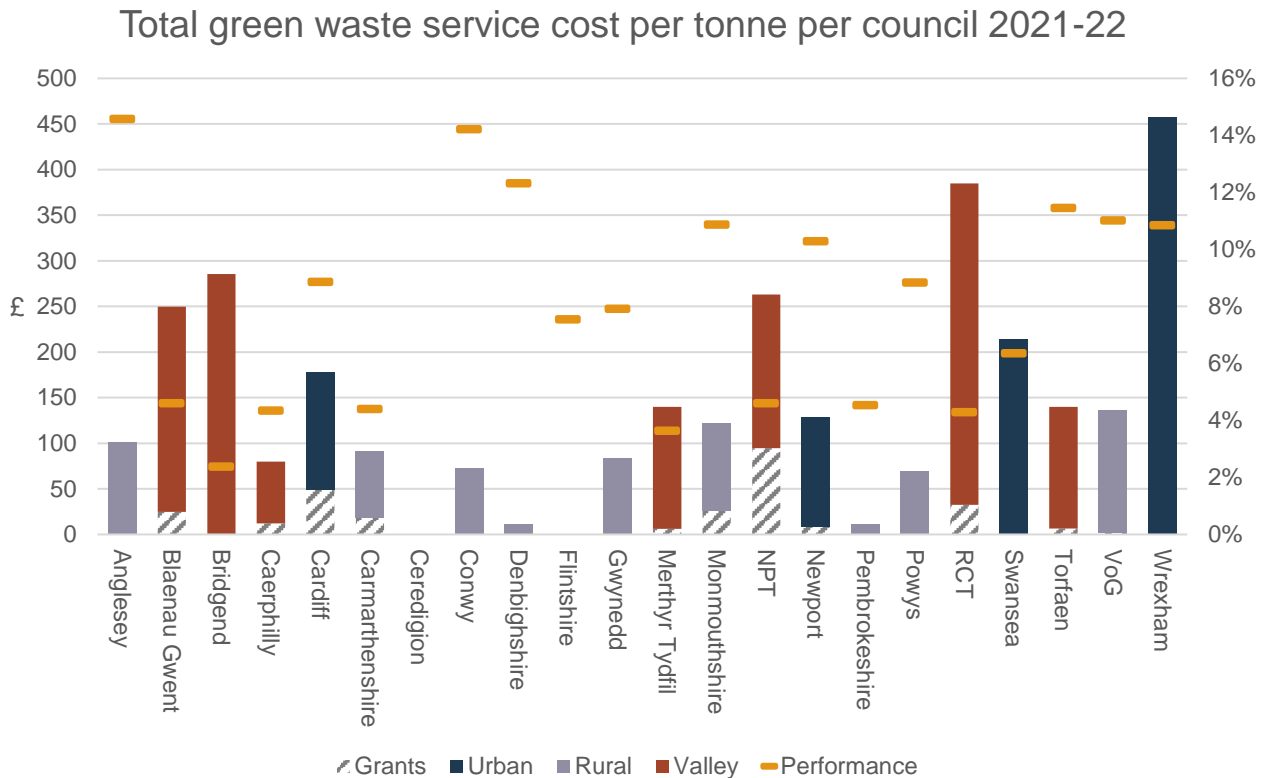


Figure 28 – Green waste service cost per tonne

58. Figure 27 and 28 show a wide variation in both costs and performance across the group. The divergence between cost and performance data seen for councils like Conwy and Anglesey would suggest that they are relatively efficient services.

6.2.1 Charging and Non-Charging

59. Variations seen in yield and therefore cost per tonne/household are likely influenced by a number of factors such as rurality, property type, collection frequency and whether charging is in place. The graph below (figure 29), compares councils who charge for the collection of green waste v’s councils who do not charge, on a cost per tonne basis. In some instances, tonnages and expenditure are calculated using apportionment when collected with other waste streams. The graph shows that the 5 councils with the lowest green waste service cost per tonne are councils who charge for the service. Councils who charge for their garden waste collections have a median cost per tonne of £83; this is £75 lower than the median cost per tonne of councils who do not charge. Over the last ten years, green waste income continues to increase year on year, with 2021/22 seeing an increase of £1.8m (51%) when compared to 2019/20. ⁹It is worth noting that nine out of the twelve councils who charge for green waste collections are rural councils.

⁹ Comparison is made with 2019/20 (pre pandemic) due to some councils suspending charging during 2020/21 (height of pandemic)

Green waste service cost per tonne Charging v's non charging 2021/22

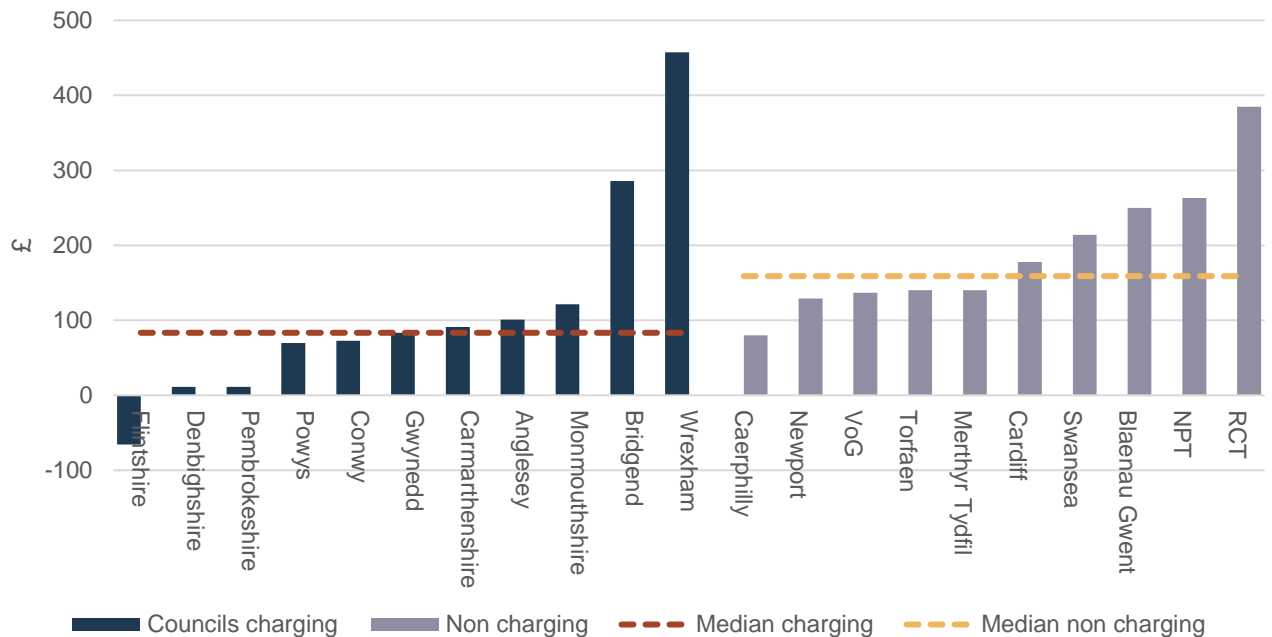


Figure 29 – Green waste service cost per tonne

6.2.2 Green waste collection

60. The green waste collection cost is shown in Figure 30 (cost per household per council) and Figure 31 (cost per tonne collected). As already mentioned, it is important to note that the cost is divided by the total number of households not the number of users or subscribers. Also, that in some instances figures are calculated using apportionment when collected with other waste streams. Three councils show negative expenditure due to income from charging for the service offsetting the actual cost of the service. Anglesey introduced a charge for green waste services during 2021/22.

Green waste collection cost per household per council 2021-22

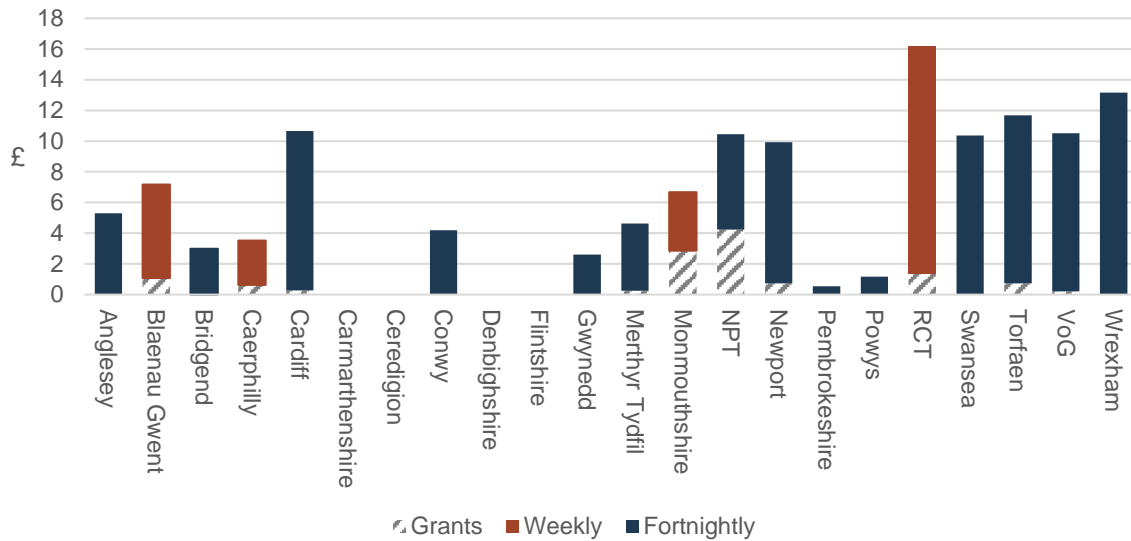


Figure 30 – Green waste collection cost per household per council.

Green waste collection cost per tonne per council 2021-22

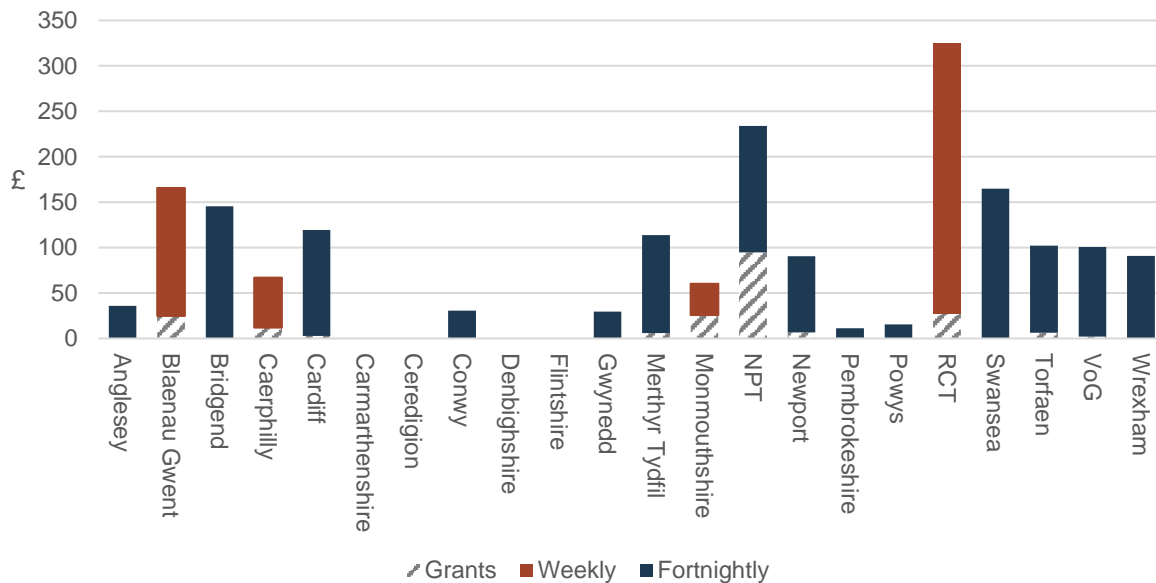


Figure 31 – Green waste collection cost per tonne

61. It can be seen that for all organic waste services, collection costs are by far the greatest contributor to overall service cost, contributing to 71% of the total service cost.

6.2.3 Green waste treatment

62. The green waste treatment cost is shown in Figure 32 (cost per household per council) and Figure 33 (cost per tonne collected).

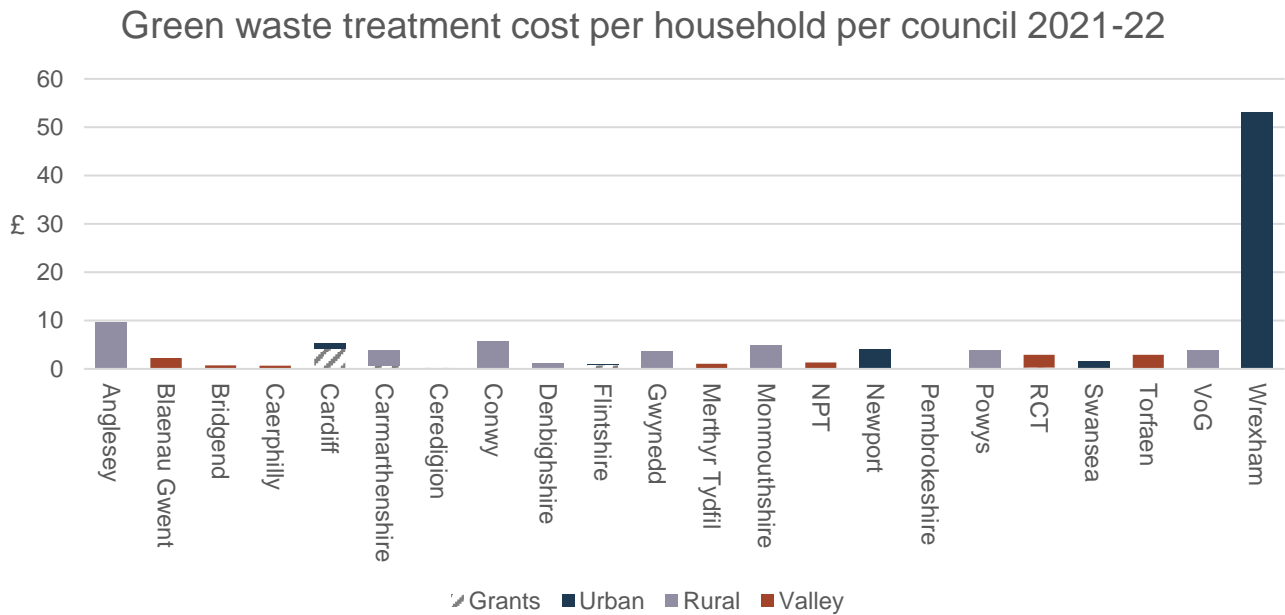


Figure 32 – Green waste treatment cost per household per council.

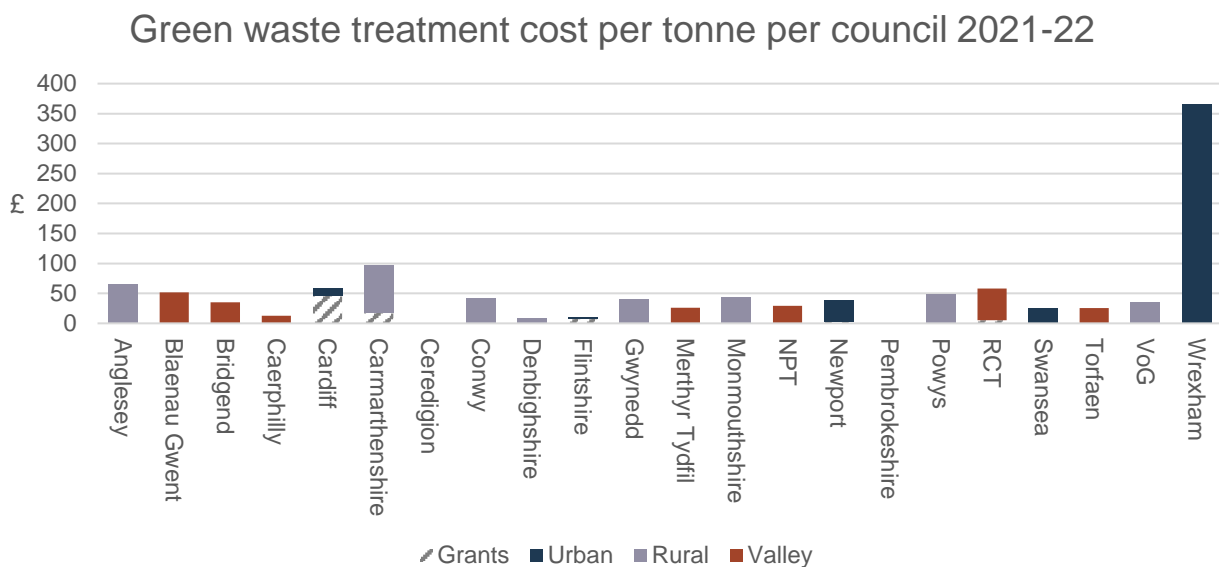


Figure 33 – Green waste treatment cost per tonne¹⁰

63. Wide variation exists across the group for green waste treatment costs, mainly due to the variation in tonnage collected between councils. The median cost is £39 per tonne; a decrease of £1.67 when comparing to 2020/21.

¹⁰ Tonnage breakdown not available for Pembrokeshire, therefore Pembrokeshire not represented in graph.

7. Combined Kerbside Recycling & Composting Services

64. In order to provide efficient services, many councils offer collections of more than one waste stream using the same vehicles and crew. For example, some councils routinely collect food waste and dry recycle together. During 2021/22, fourteen councils provided kerbside sort systems using multi compartment vehicles which allows a number of waste streams to be collected using the same vehicle and crew. See [Appendix A](#) for more information on service detail. As costs for more than one service area are shared, as a result, councils are required to make a reasonable apportionment of costs between services to enable them to complete their annual financial returns. Whilst the apportionments made are reasonable, there is a potential for error to occur. It is therefore useful to consider the combined costs of all services delivered at the kerbside in order to mitigate any potential error from apportionment.

65. Figure 34 and 35 below show the aggregated costs for all kerbside recycling services offered by councils. i.e. the aggregated total cost of dry recycling, food waste and green waste. Not included are residual waste services, HWRC, bring, bulky waste, trade waste and clinical waste collections.

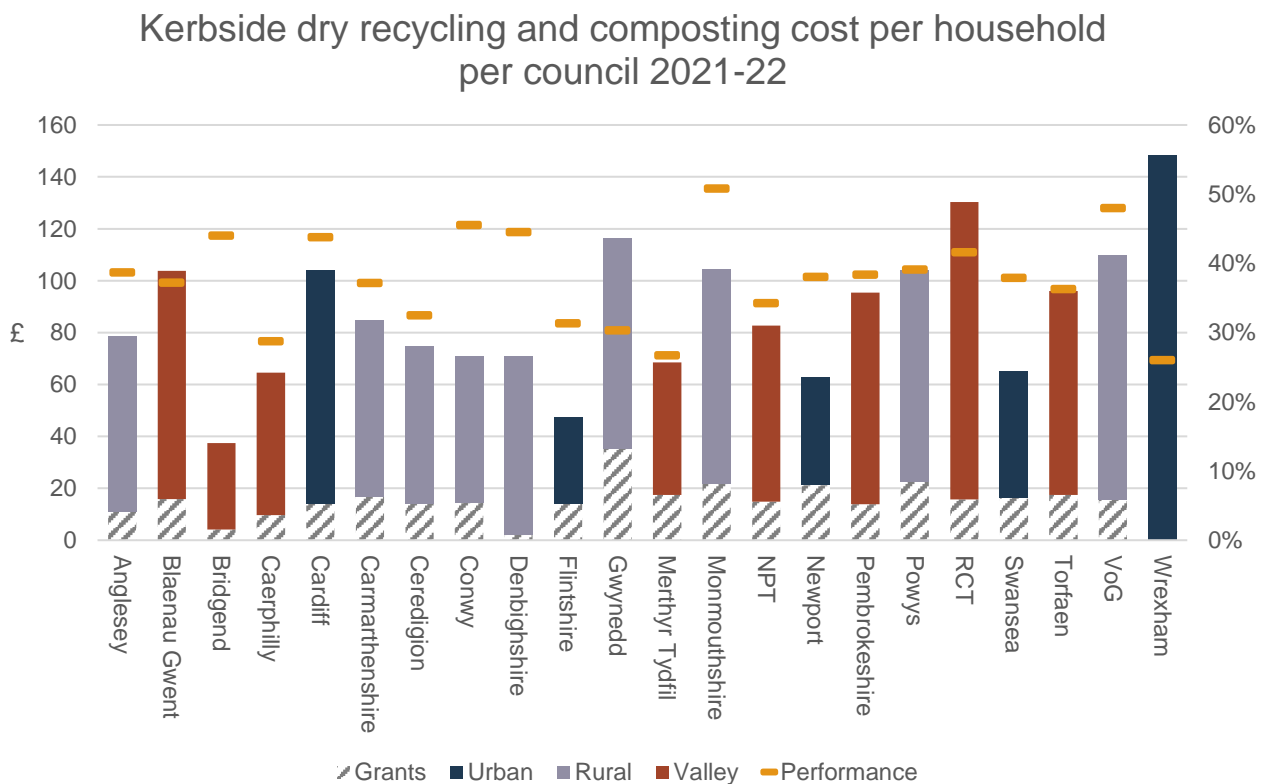


Figure 34 – Kerbside recycling and composting services – per household

Kerbside dry recycling and composting cost per tonne per council 2021-22

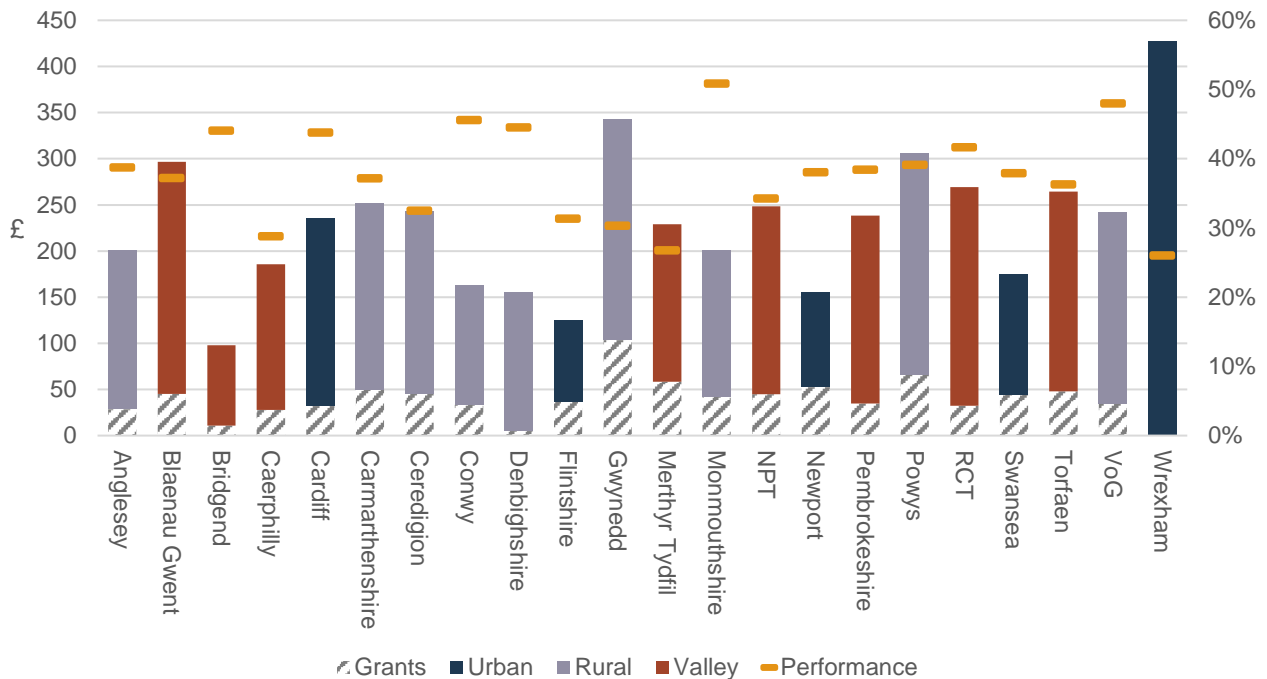


Figure 35 – Kerbside recycling and composting services – per tonne

66. Variations in costs can be seen across the group, however these graphs show less variation than when comparing separate services earlier in this report, suggesting overall costs converging. Nine councils are exhibiting combined service costs of less than £75 per household, one council more than 2020/21. Cost per hh ranges from £37 - £148, a greater range than the previous year. The 2021/22 group median is £83.70, an increase of just 20 pence per hh when comparing to 2020/21. Just over half of Welsh councils range between £62.80 per hh to £96 per hh. Performance also varies across the group with between 27% and 51% of total MSW diverted via kerbside collection of material, slightly less than the previous year.

67. Expenditure of these combined services increased year on year between 2017/18 to 2020/21, however 2021/22 saw a decrease which is likely to be due to a significant rise in costs during the pandemic where numerous restrictions were in place resulting in more waste being presented at the kerbside and additional costs to the service. When comparing kerbside recycling and composting service expenditure with 2019/20 (pre pandemic) we see an increase of just £10k. The longer-term expenditure increase trend could be due to a number of reasons, including the continuation and implementation of improved services across councils, residual waste restrictions resulting in a shift in mass collected, and behaviour change as recycling has become the 'norm'. As councils strive to meet Welsh Government targets and help drive the Circular Economy in Wales, we can see an increase in expenditure which is reflected in overall greater performance in the majority of councils over the years.

8. Residual Waste

68. Figure 36 and 37 show the aggregate cost of providing collection, transfer, treatment, and disposal of residual waste. They show service costs net of any income (where applicable). This may include sale of replacement receptacles, income from refuse derived fuel or income from sale of treated residual waste.

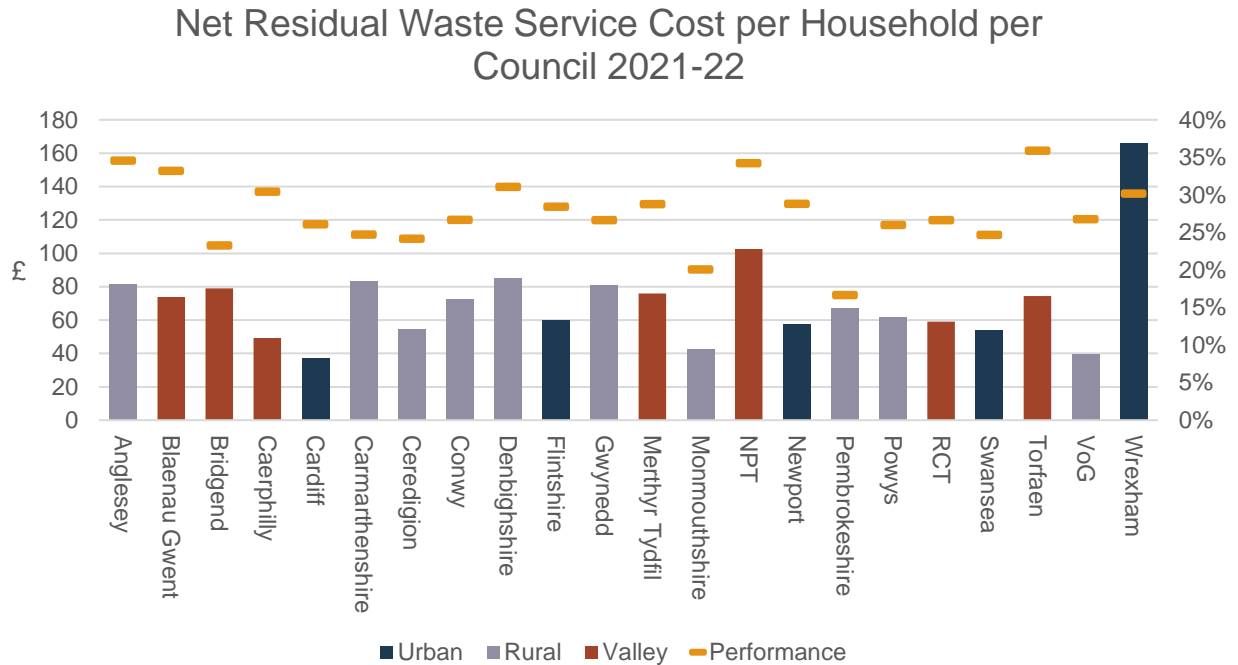


Figure 36 – Residual waste service cost per household

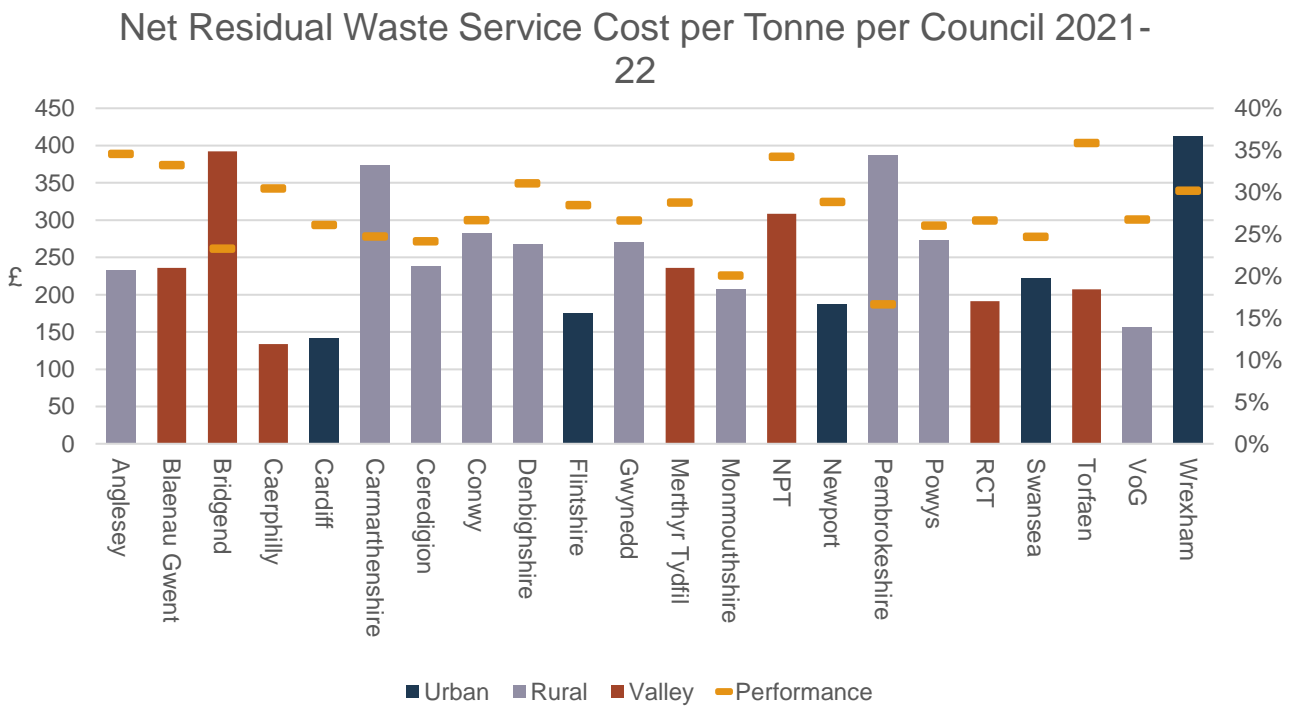


Figure 37 – Residual waste service cost per tonne

69. Performance data shows the proportion of MSW collected from the kerbside that is residual waste. Therefore, lower figures indicate a better performing service overall i.e. greater proportion of the total waste arisings is recycled. For example, Monmouthshire operated a low-cost residual waste collection service relative to the group. Performance data indicates that the proportion of total MSW that is residual is one of the lowest across the group.
70. From the core data it is also possible to compare 2021/22 overall residual waste service expenditure with that of 2020/21:

	20/21	21/22	% Change	21/22 Cost per hh
Residual waste	£98,192,385	£98,148,534	-0.04%	£67.48

71. 2021/22 saw a slight decrease in overall residual waste service costs, with net expenditure decreasing by £44k when compared to the previous year. Costs adjusted for inflation show a larger decrease in expenditure in real terms. Whilst overall expenditure decreased, the median cost per household increased by £1.82, increasing to £69.62 in 2021/22.
72. Between 2020/21 and 2021/22 residual mass decreased by 29,472 tonnes. Similarly, the median cost per unit mass also decreased, decreasing from £240 to £236 per tonne. The reduction in residual mass follows a significant increase the previous year during the height of the pandemic when HWRCs temporarily closed, and people were required to stay at home resulting in more waste being presented at the kerbside. The reduction in residual waste collected from the kerbside in 2021/22 can be linked to an increase in HWRC mass after the reopening of HWRCs and highlights a shift in tonnage between kerbside residual and HWRC. Residual mass has not returned to pre covid levels of 2019/20, but the reduction does suggest a part return to 'normal'. Despite restrictions being lifted, many people continued to work from home during 2021/22. This has likely led to more waste being presented at the kerbside than pre pandemic levels.

8.1 Residual Waste Frequency

73. There were no significant changes to residual waste frequencies for councils during 2021/22. All twenty-two Welsh councils collected residual waste on at least a fortnightly basis, with Anglesey, Blaenau Gwent, Ceredigion, Gwynedd, Pembrokeshire, and Powys collecting 3 weekly, and Conwy operating a 4-weekly service. Refer to [Appendix A](#) for further information on service detail.

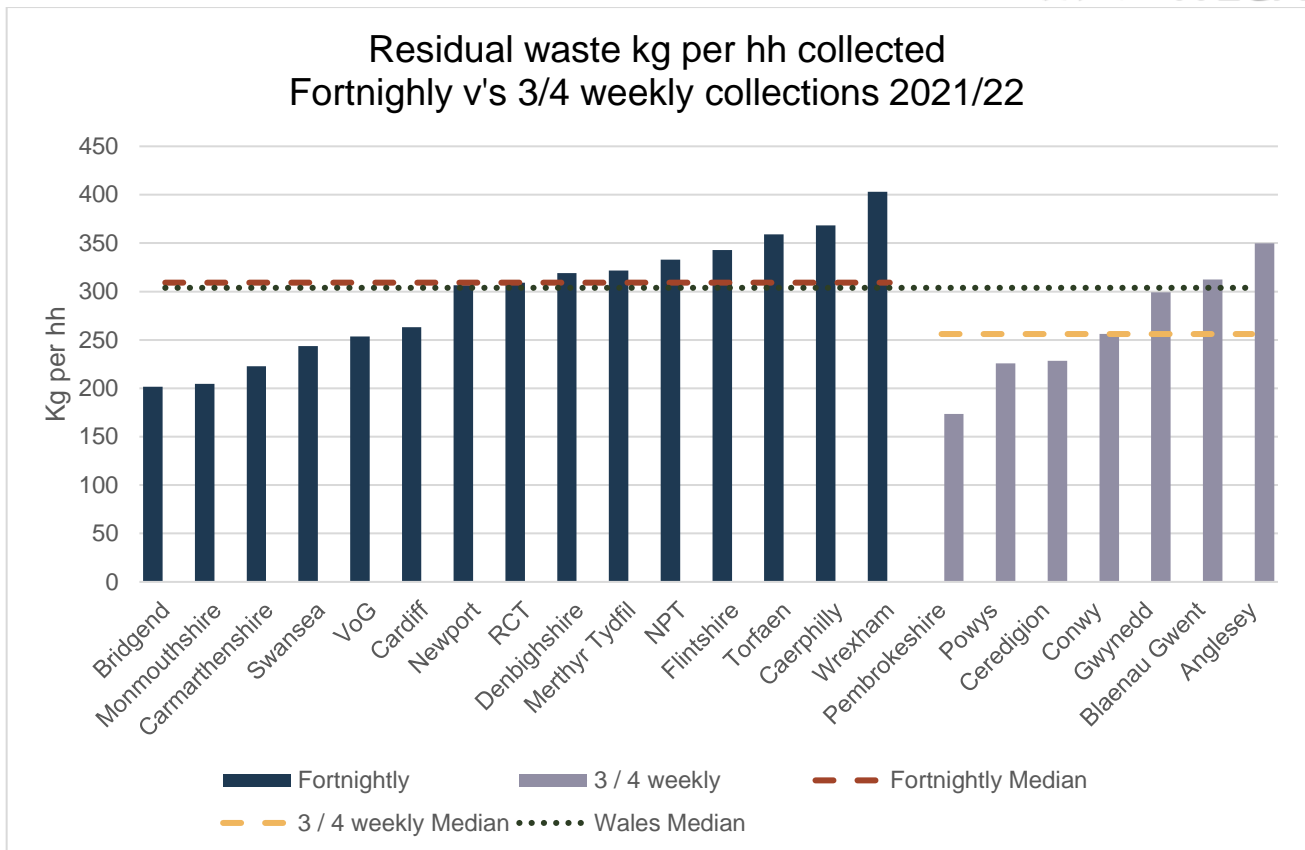


Figure 38 – Residual waste kg per hh collected

74. Figure 38 shows the residual mass collected per household in 2021/22 and allows us to compare councils who collect residual waste fortnightly with those who collect three or four weekly. The graph shows that councils who provide three and four weekly residual waste collections collected a median figure of 53kg per hh less than those providing fortnightly collections. Three and four weekly councils collected a median figure of 256kg per hh whereas fortnightly councils collected a median figure of 309kg per hh. This may suggest that three and four weekly collections encourage residents to reduce residual waste. Councils who collect three or four weekly have a 2% higher average recycling rate than those who collect fortnightly; 67.3% compared to 65.3% respectively. It is important to note that 6 out of the 7 councils who collect three or four weekly are blueprint compliant and are also rural councils; factors which may contribute to mass collected.

75. When comparing councils by rurality, rural councils collected the lowest mass of residual waste during 2021/22 and collected the highest mass of dry recyclate from the kerbside based on kg per hh (median). Differences in mass collected at the kerbside could be due to many factors, including but not limited to frequency, capacity, receptacle provided, enforcement and dry recycling service collection method. Both rurality and socio-demographics (for example the presence of high-density housing, flats, student population, houses of multiple occupancy, age, and profile) can also be contributing factors in mass collected, all of which are out of a council's control.

8.2 Residual waste receptacle

76. During 2021/22, fifteen councils provided wheeled bins as standard for the collection of residual waste from the kerbside. Seven councils used bags or sacks as standard to collect residual waste from the kerbside, these councils include Bridgend, Carmarthenshire, Ceredigion, Pembrokeshire, Monmouthshire, Swansea and Vale of Glamorgan. Some of the wheeled bin councils allow the use of bags for some households who are unable to use wheeled bins but for the purpose of this report these councils are categorised as wheeled bin councils due to that being the standard receptacle provided to households. Refer to [Appendix A](#) for further information on service detail.

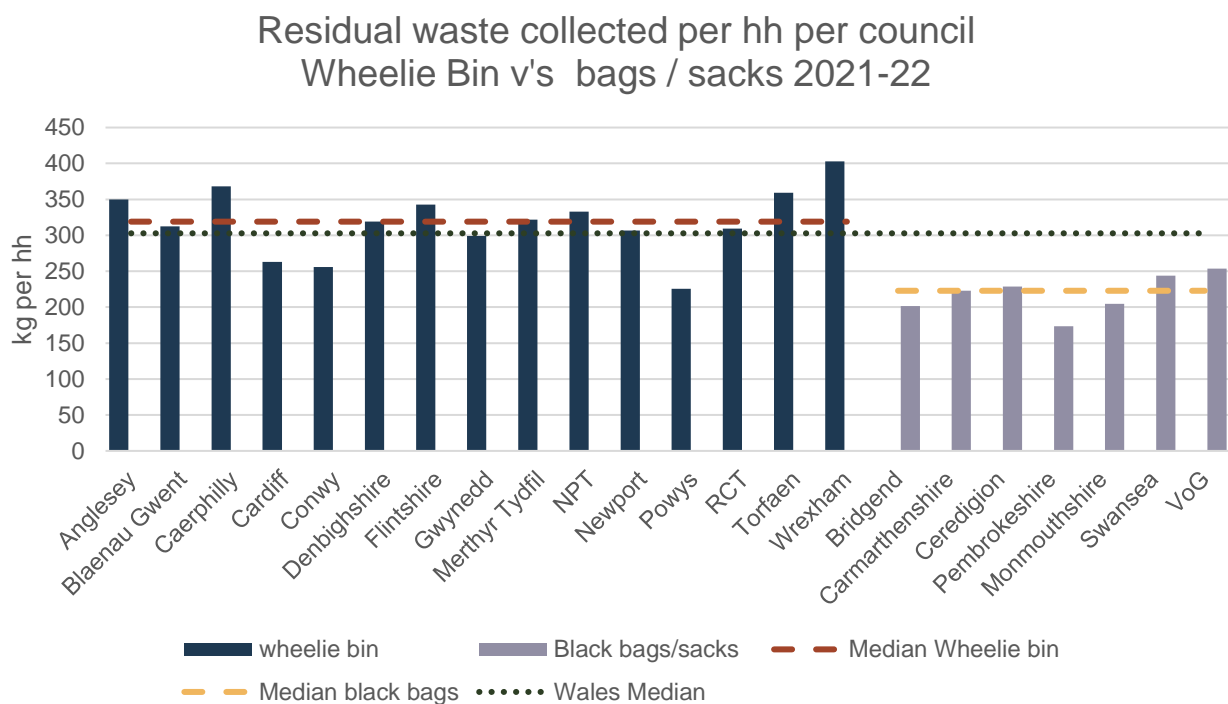


Figure 39 – Residual waste collected per hh

77. Figure 39 above shows the residual mass collected per household in 2021/22 and allows comparison between councils who collected using wheeled bins with those who collected using bags or sacks. The table below provides further comparison between the wheeled bins and bag/sacks:

Residual waste	Median kg per hh collected	Median cost per tonne	Average kerbside recycled and composted rate
Wheeled bin	319kg	£236	36%
Bags/sacks	223kg	£238	41%
Difference	96kg	£2	5%

78. Data from Figure 39 and the table above suggests that councils who used bags/sacks to collect residual waste collected 96kg per hh (median) less waste from the kerbside than

wheeled bin councils. Data highlights that costs for both bag/sack and wheeled bin councils are similar, but notably, councils who used bag / sacks had a 5% higher average kerbside recycled and composted rate. It is important to note that many councils who provide bags are rural councils with perhaps an older demographic population. Research has shown older demographics tend to be better recyclers. As mentioned earlier in the report, there are many factors that contribute to the mass collected at the kerbside, including but not limited to frequency, capacity, receptacle provided, enforcement, dry recycling service collection method and unchangeable factors like demographics.

8.3 Residual waste – Longer-term trend

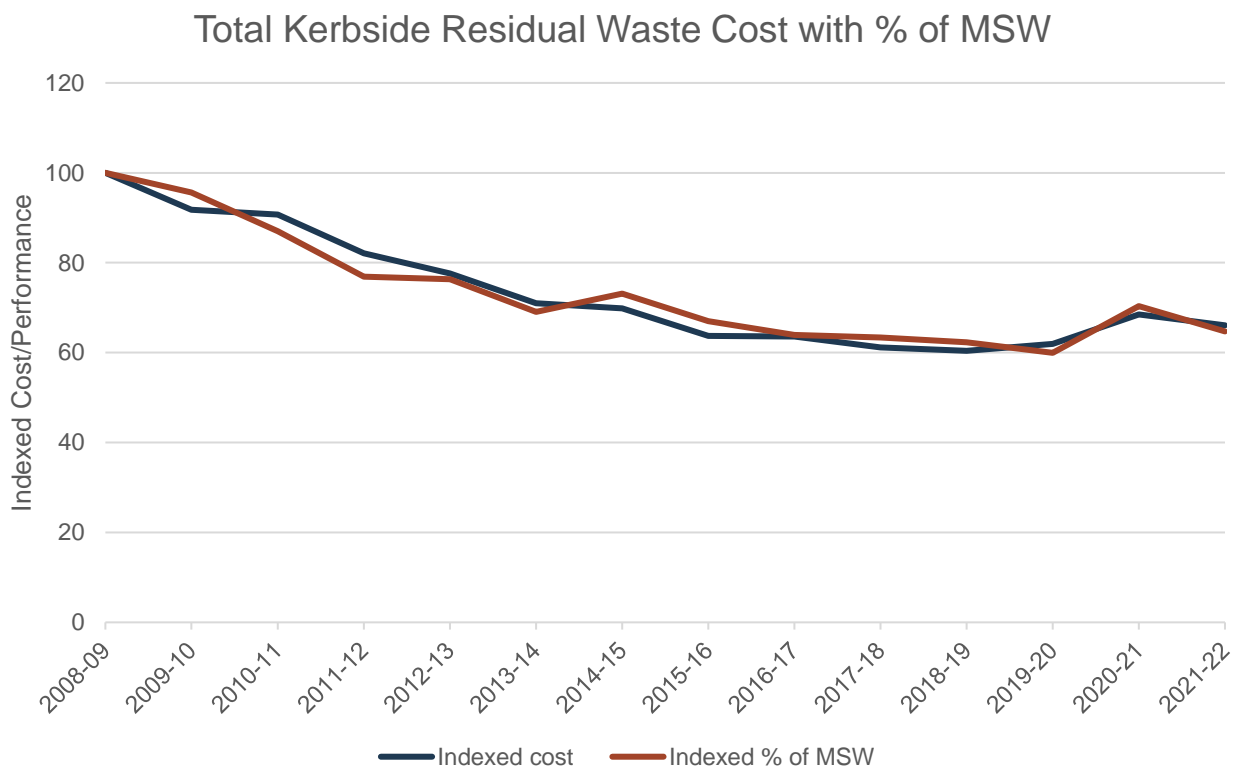


Figure 40 – Kerbside residual waste cost since 2008/09

79. The trend over the last ten years is shown in Figure 40. It can be seen that arisings and residual waste costs, adjusted for inflation have dropped significantly since 2008/09. This is likely to be linked to the introduction of residual waste restrictions, including reduction of collection frequencies, capacity, and implementation and continuation of side waste policies across many councils over the years. 2019/20 saw the first increase in real terms since baseline data began in 2008/09. 2020/21 saw a sharp increase in both costs and performance which can be largely attributed to the pandemic when people were required to stay at home. Most recently both performance and costs have decreased between 2020/21 and 2021/22 showing a part return to ‘normal’ following the pandemic.

8.4 Residual Collection

80. The following graphs (figure 41 and 42) show residual waste collection costs on a per household and a cost per tonne basis. Figure 41 highlights that councils that collect fortnightly have the lowest median cost per hh when compared to the median cost of those who collect three or four weekly, £22.80, £28.48 and £24.80 respectively. Again, it is important to note that 6 out of 7 councils who collect three / four weekly are rural councils and therefore would naturally exhibit higher collection costs due to population density, likely resulting in higher mileage and transport costs.

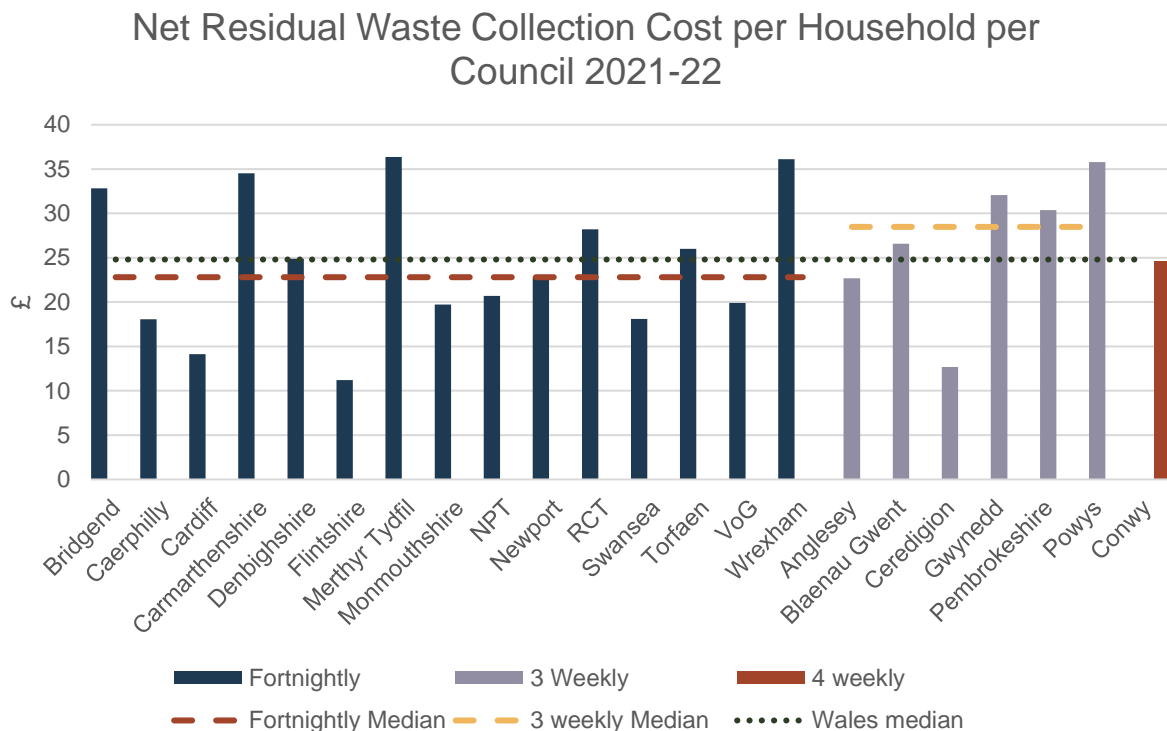


Figure 41 – Residual waste collection cost per household

81. Figure 42 shows residual waste collection costs on a cost per tonne basis. The graph suggests that three/four weekly councils have a higher collection cost per tonne (median). As highlighted in Figure 39 three/four weekly councils collect 53kg less residual waste per household than those providing fortnightly collections, therefore some three/four weekly councils would naturally exhibit a higher cost per tonne. This could suggest that there are minimum fixed costs in providing a residual waste service that cannot be avoided.

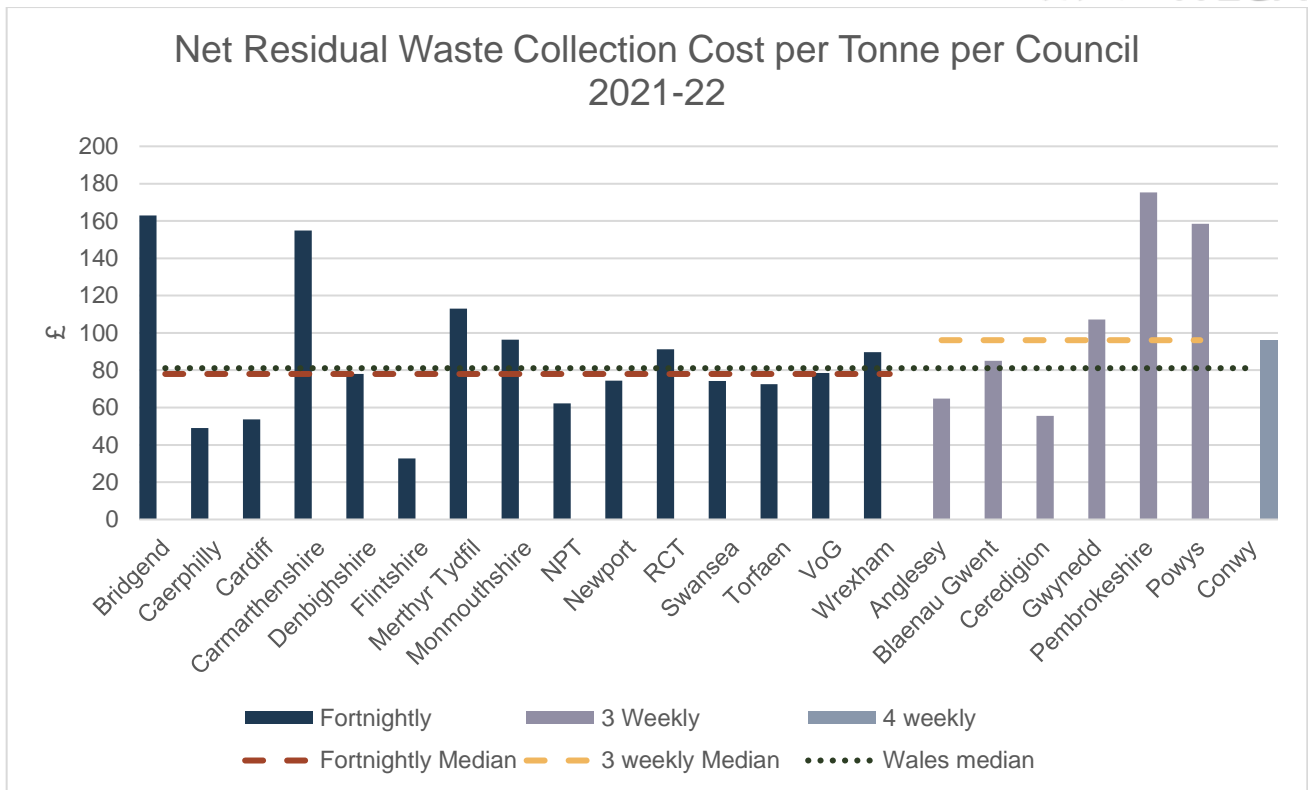


Figure 42 – Residual waste collection cost per tonne

8.4 Residual Transfer

82. A significant number of councils are required to transfer residual waste collected prior to onward treatment or disposal. Costs incurred are shown in Figure 41 & 42.

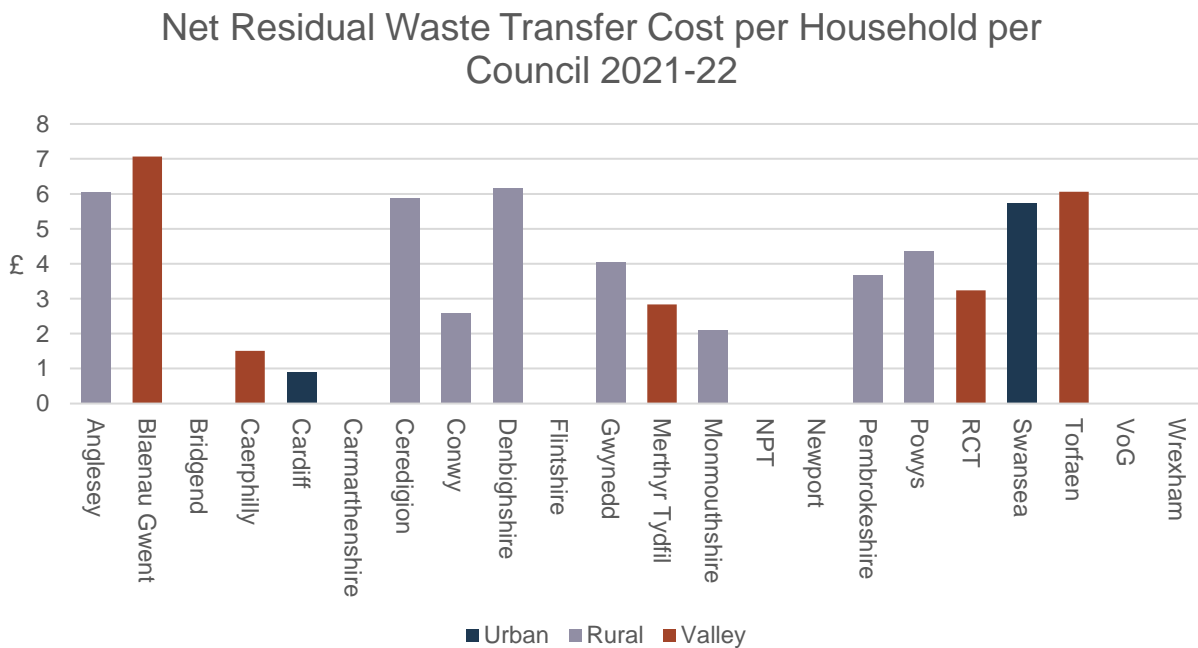


Figure 43 – Residual waste transfer costs per household

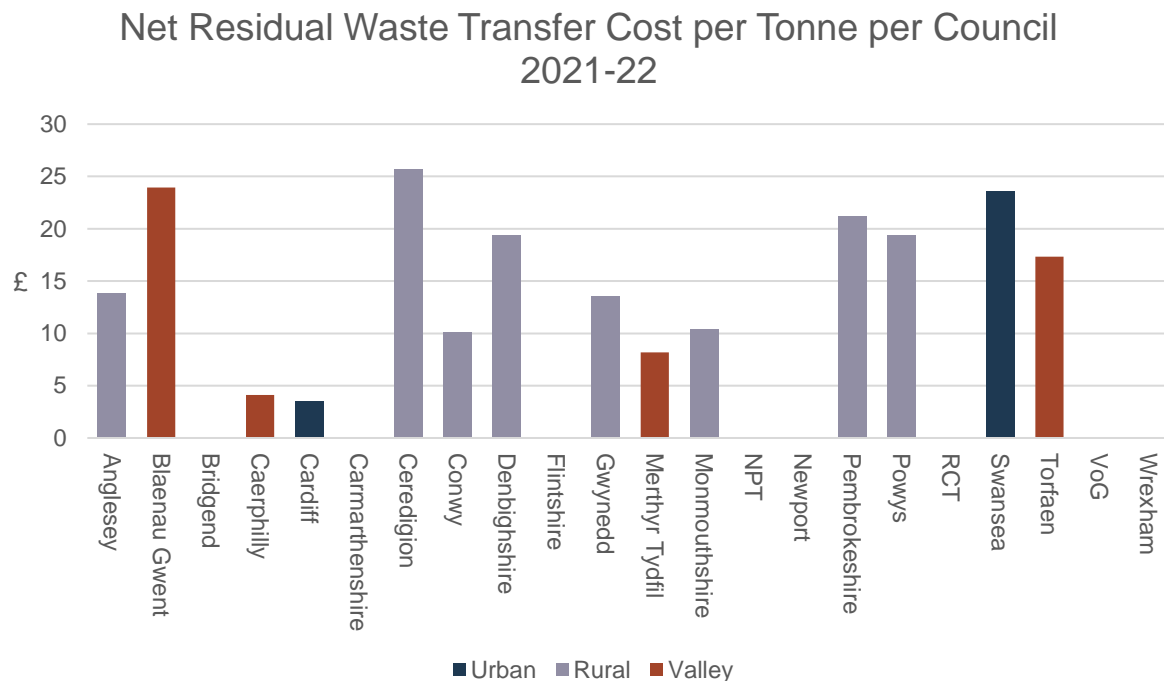


Figure 44 – Residual waste transfer cost per tonne

8.5 Residual Treatment / Processing

83. Over the years, more councils have adopted treatment technologies for managing their residual waste, most recently the addition of Parc Adfer EFW facility in North Wales, which became fully operational December 2019. All twenty-two councils exhibit treatment costs and are shown in Figure 45 & 46.

84. The cost of treatment of processing waste is shown in Figure 45 & 46. Between 2020/21 and 2021/22 residual waste treatment costs increased by c£600k, increasing from £54.9m in 2020/21 to £55.5m whilst tonnage reduced by 13,187 tonnes during the same period. The reduction in tonnage follows a 24% increase (63k tonnes) the previous year (2020/21) due to restrictions during the pandemic, resulting in more waste being sent to energy from waste facilities. The reduction in tonnage during 2021/22 shows a part return to 'normal' following the pandemic. In some cases, not all residual wastes are treated and therefore some councils incur disposal/landfill costs.

Net Residual Waste Treatment Cost per Household per Council 2021-22

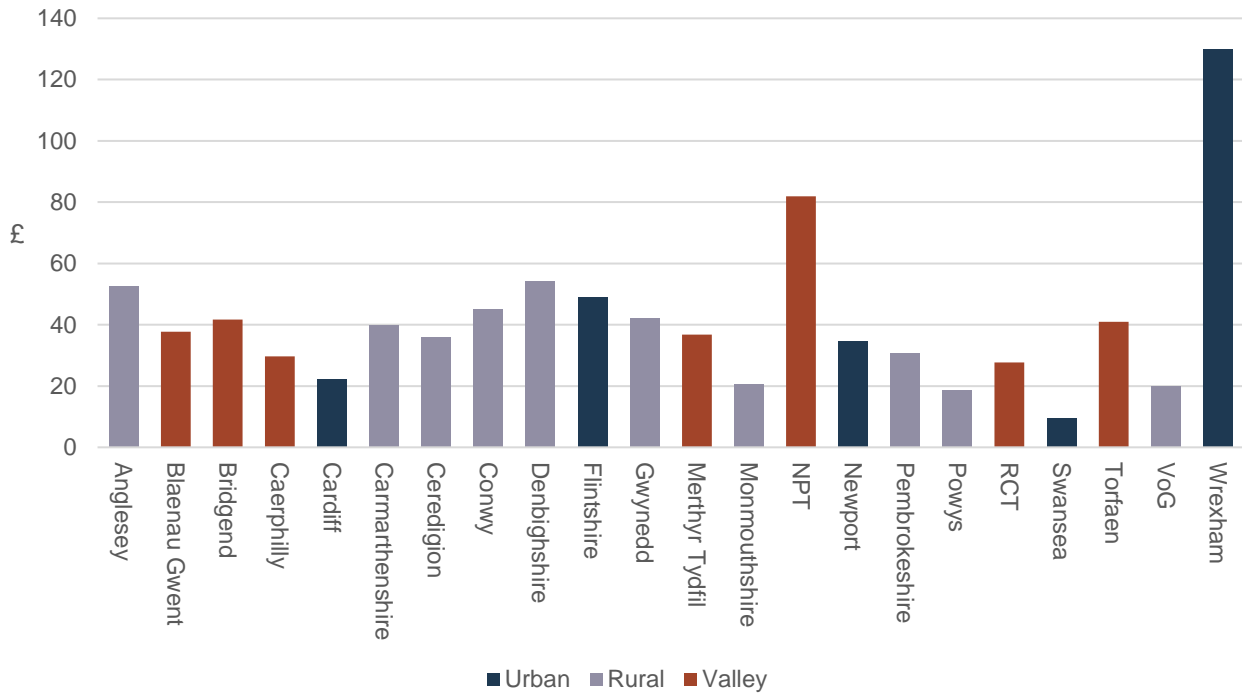


Figure 45 – Residual waste treatment cost per household

Net Residual Waste Treatment Cost per Tonne per Authority 2021-22

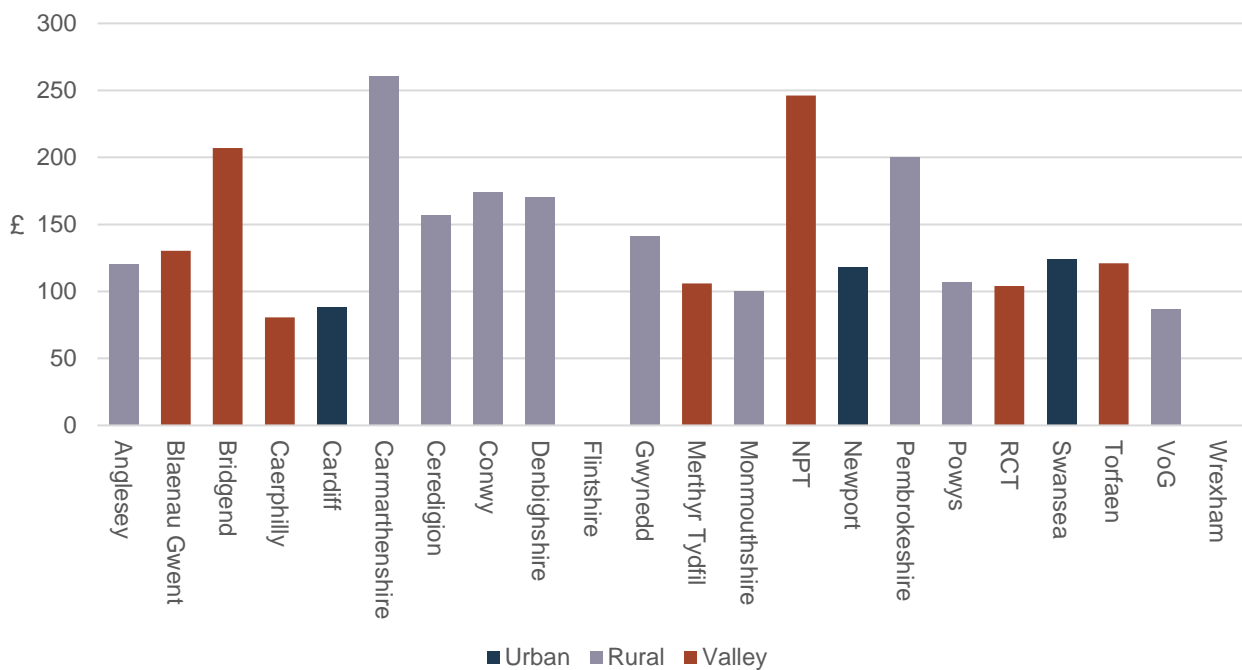


Figure 46– Residual waste treatment cost per tonne

8.6 Residual Landfill Disposal

85. Figures 47 & 48 show the costs of disposing the residual waste collected. These are generally based on fixed price contracts and costs will vary based upon local circumstances (such as availability of landfill options nearby), length of contract and date of contract commencement. Data is shown on a cost per household basis and as a cost per tonne.

86. Residual disposal costs continue to decrease year on year if we disregard the period of the pandemic (2020/21). 2021/22 saw the lowest disposal net expenditure on record highlighting a longer-term trend. Disposal net costs decreased by nearly £1.8m, decreasing from c£5.8m in 2020/21 to c£4m in 2021/22. During the same period, the number of councils incurring costs for the disposal of residual waste decreased from eleven to nine councils. Six out of those nine councils demonstrated a decrease in disposal costs. During this period Swansea were completing their own landfill and therefore demonstrate higher landfill costs. It is worth noting that all councils were within their landfill allowance for this period.

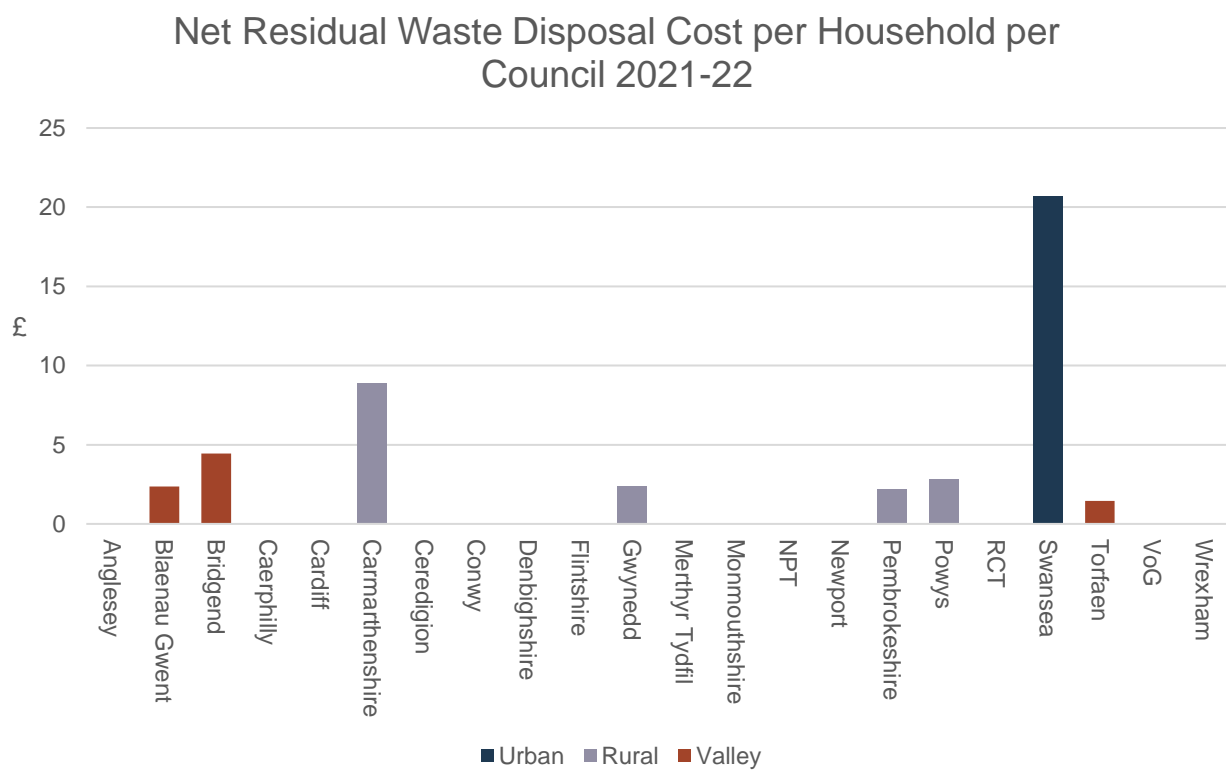


Figure 47 Residual waste disposal cost per household

Net Residual Waste Disposal Cost per Tonne per Council 2021-22

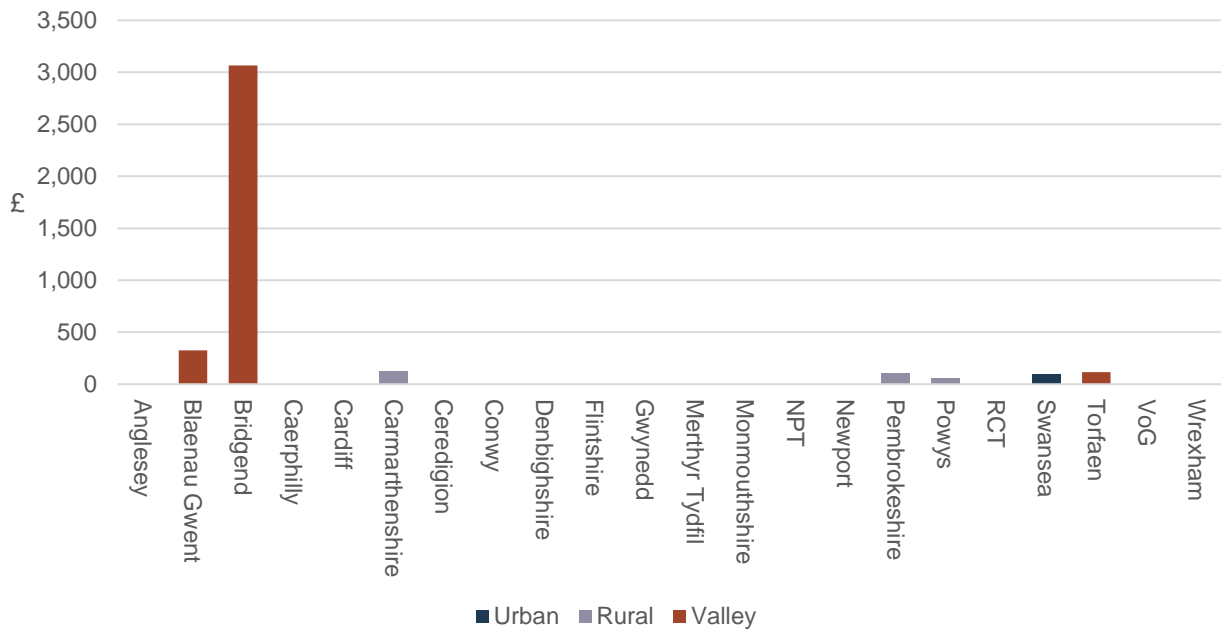


Figure 48 Disposal cost per tonne of Residual waste¹¹

87. Figure 49 and 50 show the longer term trends of residual waste treatment and disposal costs and tonnage. Figure 49 highlights the shift in expenditure from disposal to treatment over the last ten years. Similarly figure 50 highlights the shift in tonnage from disposal to treatment over the same time period.

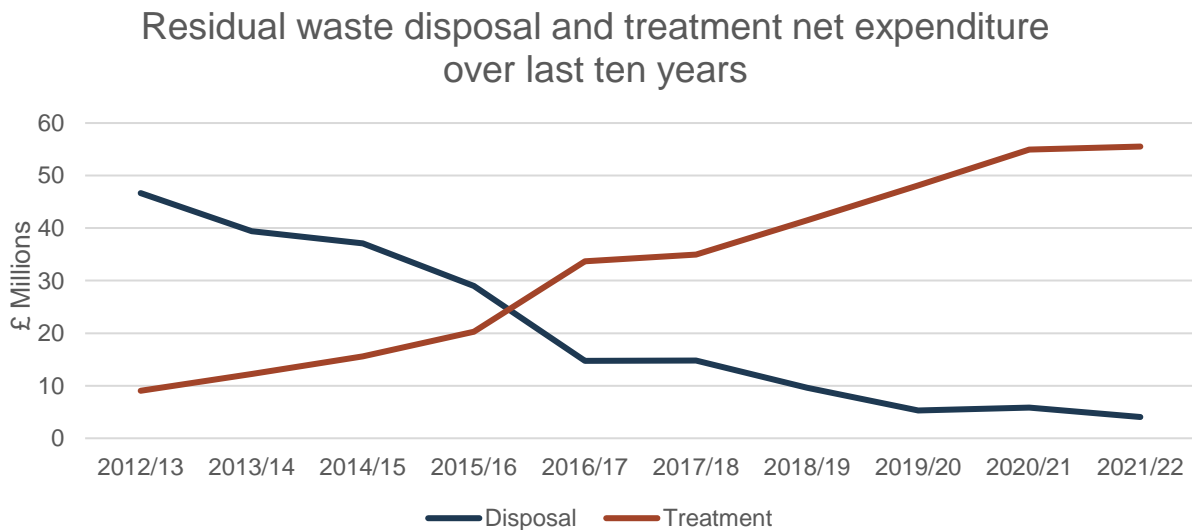


Figure 49 – Residual disposal and treatment expenditure over time

¹¹ Some councils incurred disposal costs but due to low costs per tonne are not represented in Figure 48.

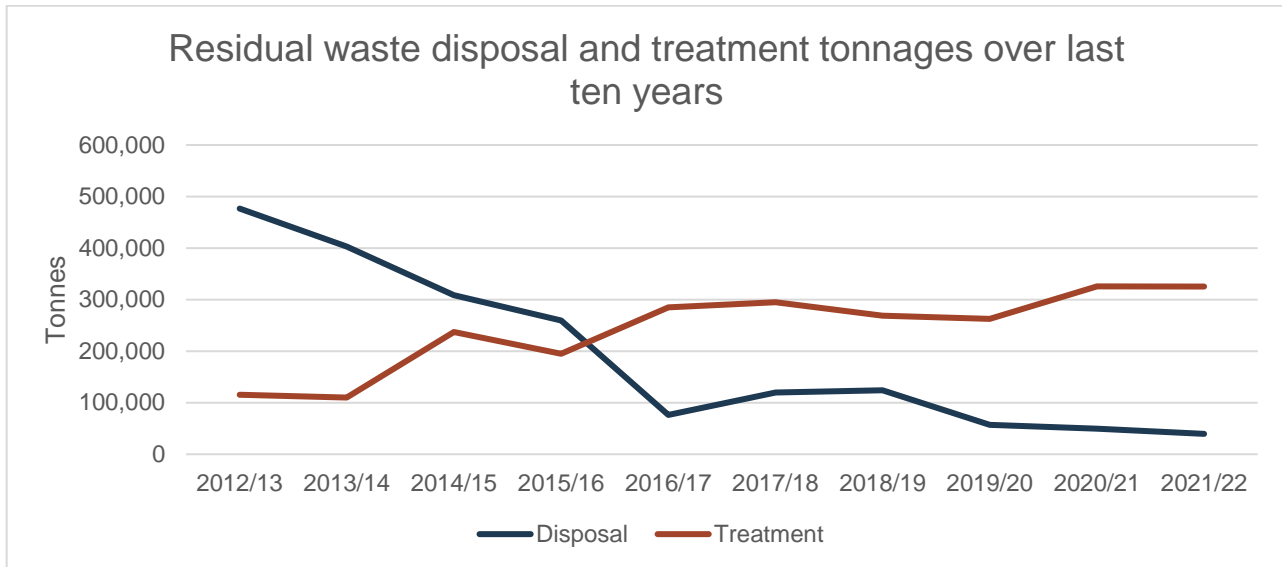


Figure 50 Residual disposal and treatment tonnages over time

A number of factors may have contributed to the reduction in residual waste sent to landfill over the years, including (but not limited to) Landfill Disposal Tax (LDT), which may have somewhat incentivised the diversion of waste from landfill to other less harmful methods of waste management like recycling, reuse and energy from waste. The impact of the landfill disposal tax on recycling and reuse is highlighted in the key findings of the Landfill Disposals Tax (Wales Act 2017) summary review¹²:

Between 2018-2022, recycling rates increased by 2 percent whilst LDT rates did not increase in real terms. Though LDT may have contributed to this increased recycling, stakeholders believed that other driving factors (specifically political signals that landfill is an unsustainable option and statutory local authority (LA) recycling targets) had a greater impact. (Eunomia/WG pg. 4)

¹² An independent review of the Landfill Disposals Tax (Wales) Act 2017: summary can be found [here](#)

9. Household Waste Recycling Centres

88. Following the pandemic where household waste recycling centres (HWRCs) across Wales temporarily closed and booking systems introduced, 2021/22 saw a return towards 'normal'. Some councils continued to use booking systems whilst making other improvements. Residual / general waste sorting stations recommenced and reuse shops at sites reopened to customers.

89. During 2021/22, four new reuse shops were opened by councils in Blaenau Gwent, Cardiff, Carmarthenshire, and Monmouthshire. Three of these are located at a HWRC site, while one is located within a town centre. Fourteen councils now have at least one reuse shop located either at a HWRC site or off-site. Monmouthshire and Rhondda Cynon Taff have two reuse shops, while Powys has four¹³.

90. As before, cost is shown on the left-hand axis whilst performance, in terms of mass recycled via HWRC network as a proportion of total MSW, is shown on the right. Costs shown include both recycling and residual fractions dealt with at HWRCs. In some instances, figures may also include running of re use shops/income and costs associated.

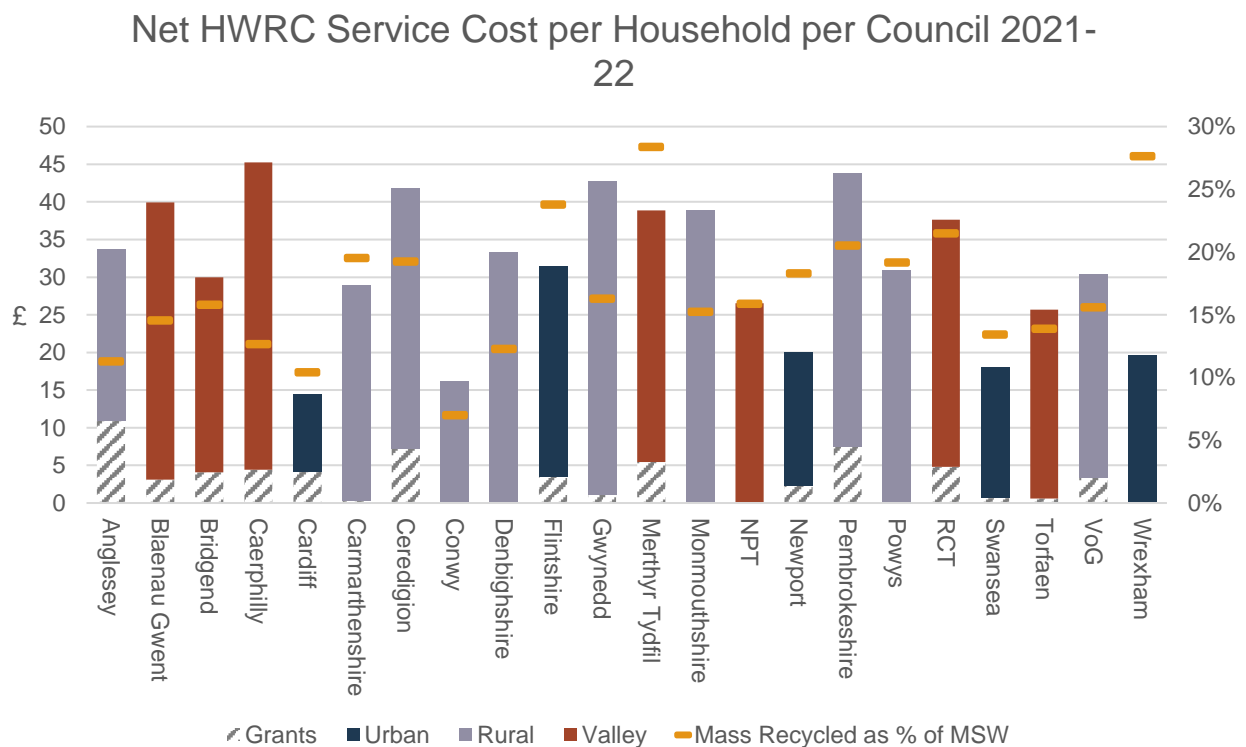


Figure 51 – HWRC site service cost per household

¹³ More detailed information on HWRCs and re use shops can be found in the Waste Improvement Programme HWRC benchmarking report which can be found on the [Waste and Recycling Financial benchmarking hub](#)

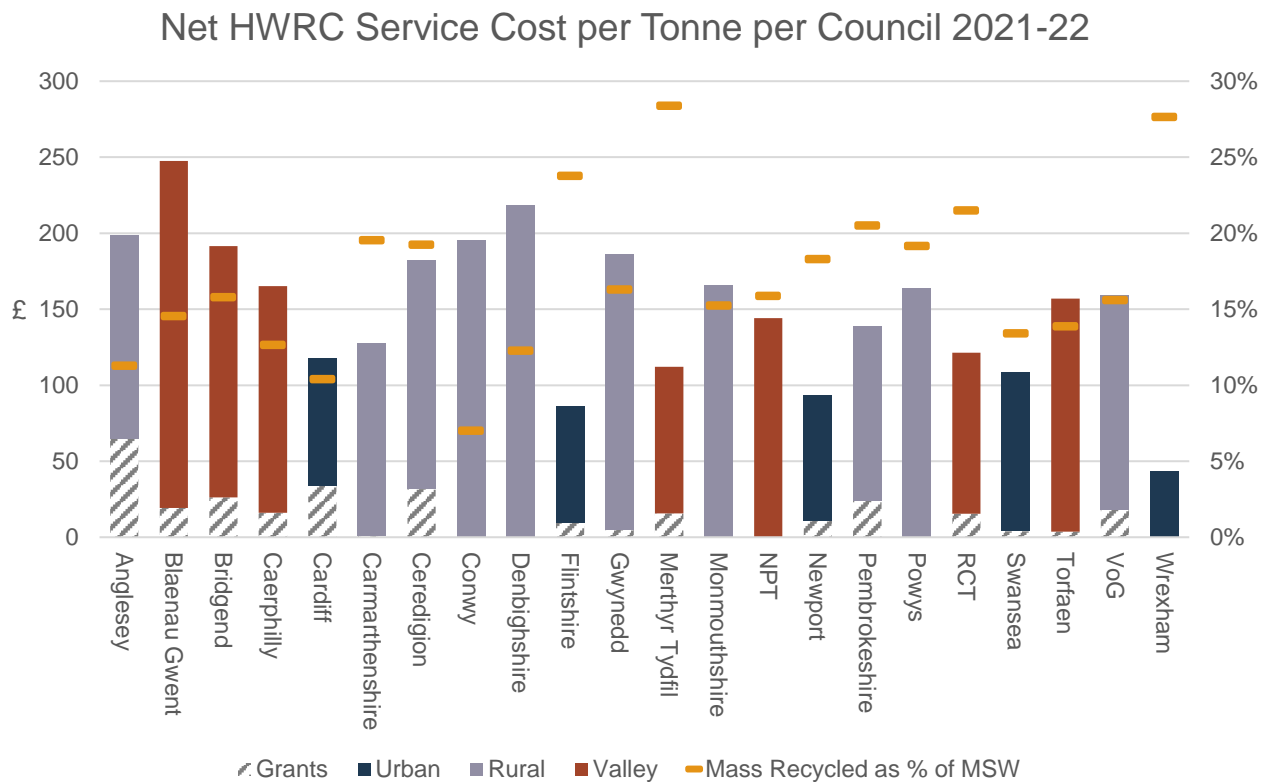


Figure 52 – HWRC service cost per tonne

91. Once again, divergence between cost and performance bars is likely to indicate a more efficient service. Wrexham, where cost per household and cost per tonne indicators are around the lowest of councils, yet with 24% of total MSW recycled through HWRC site network, they are amongst the highest performing councils. Wrexham’s costs in other services are higher and therefore may be a function of their contractual position.

92. Past performance data indicates that contribution made by HWRCs to overall recycling rates can be considerable. 2020/21 saw a much lower contribution rate highlighting the impact of the pandemic. 2021/22 data indicates an increase in contribution rates, although not at the same levels of 2019/20 (pre pandemic) which suggests a part return to ‘normal’, with councils ranging from 7% to 28% mass recycled as % of MSW.

93. From the core data it is possible to compare 2021/22 overall HWRC service expenditure with that of 2020/21:

	20/21	21/22	% Change	21/22 Cost per hh
HWRC	£39,244,209	£42,627,675	+8.62%	£29.31

94. Overall HWRC expenditure increased during 2021/22, increasing by 8.6% despite an increase of £2.1m in income received by councils between 2020/21 and 2021/22. Costs adjusted for inflation show a smaller increase in expenditure in real terms (4.6%). The

8.6% increase in expenditure follows a 7% decrease the previous year due to the pandemic and again indicates a part return to 'normal'. Data shows that 2021/22 HWRC overall expenditure has returned to that of pre covid (2019/20) levels, £42,627,675 and £42,248,897 respectively.

95. HWRC median cost per hh increased by £2.20, increasing to £31.20 per hh when comparing to 2020/21. The median cost per hh has returned to a similar figure to that of pre pandemic (2019/20). The median net cost per tonne decreased by £10, decreasing to £157.91 per tonne when comparing to 2020/21. However, when comparing to pre pandemic figures there is still a significant difference. 2019/20 saw a median cost per tonne figure of £120, £38 per tonne lower than post pandemic (2021/22). This is likely to be partly linked to 18% less throughput at HWRCs when comparing pre and post pandemic periods (2019/20 and 2021/22 respectively).

96. Between 2020/21 and 2021/22 there was a 16.8% increase in throughput of recycling and residual waste at HWRC's. During the same period, mass from HWRC's as a proportion of overall household waste streams increased by 3%, increasing from 21% to 24%. It is worth noting that the HWRC proportion of overall household waste streams has not returned to pre covid (2019/20) levels of 30%. For the second consecutive year since 2016/17, HWRC's are no longer the largest mass proportion of all household waste streams, once again demonstrating the lasting impact of the pandemic.

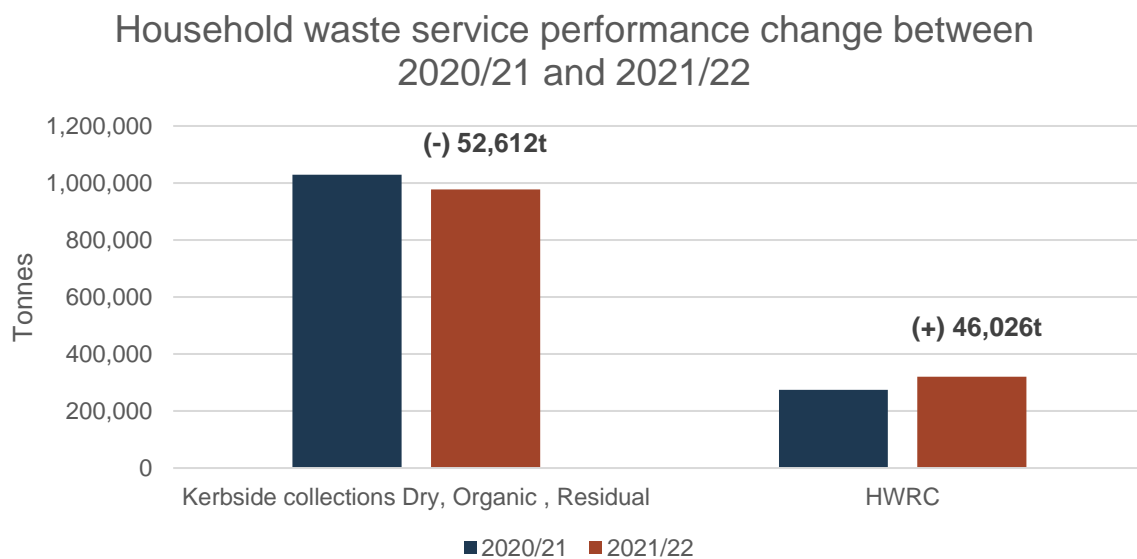


Figure 53 – household waste service performance change

97. Figure 53 demonstrates the difference in tonnage collected between 2020/21 and 2021/22 on the household service elements. As mentioned earlier in this report, the graph shows that overall HWRC tonnage increased by 46,026 tonnes whereas overall kerbside tonnage dry, organic, residual decreased by 52,612t highlighting a shift in tonnages between kerbside and HWRC. This graph suggests that as HWRCs reopened, and people

returned to work, that less waste was presented at the kerbside and more waste was taken to HWRCs.

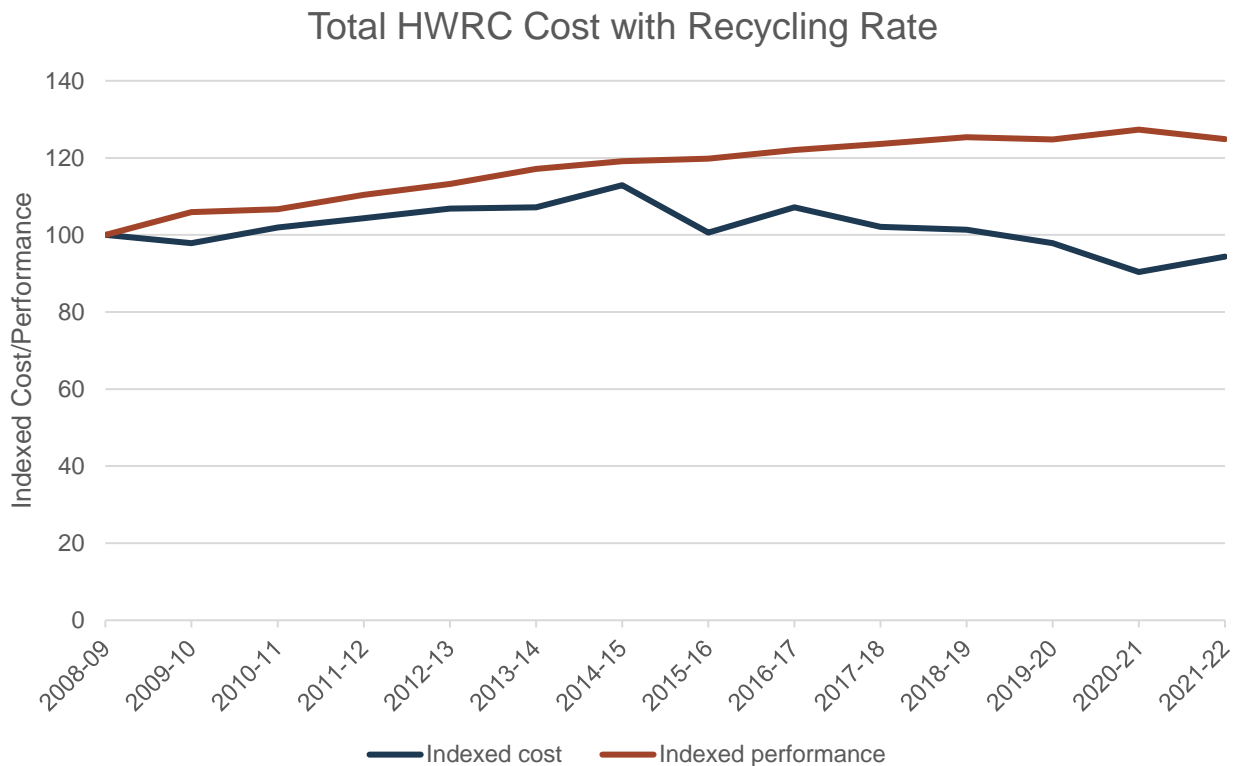


Figure 54 – HWRC site expenditure since 2008/09

98. Over the longer term (figure 54), it can be seen that expenditure has fallen since 2016/17, and more recently expenditure falling below baseline data. However, a sharp increase in costs can be seen in 2021/22 indicating a return toward ‘normal’ following a significant decrease during the height of the pandemic. Since 2008/09 recycling performance has increased steadily with 2021/22 seeing a slight drop. In some councils where booking systems have been put in place, it has been seen as a deterrent in “trade” waste being disposed of at HWRC’s. It is possible that the reduction in throughput over recent years is also linked to the ongoing implementation of comprehensive kerbside services across Wales, trade waste restrictions, residency checks and the opening of re-use shops¹⁴.

¹⁴ More detailed information on reuse shops and the tonnages associated can be obtained from the Waste Improvement Programme HWRC benchmarking report which can be found on the [Waste and Recycling Financial benchmarking hub](#)

10. Bring Sites

99. The figures shown reflect the service cost divided by number of households (Figure 55) and by mass collected (Figure 56).

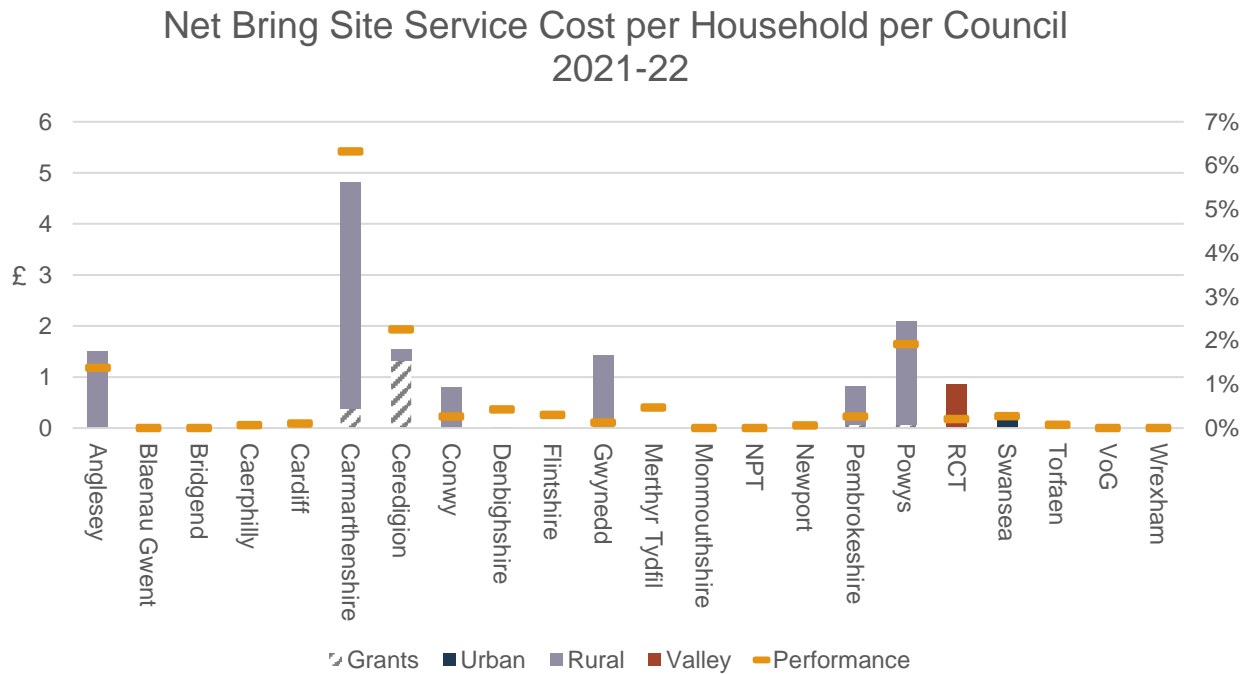


Figure 55 – Bring site costs per household.

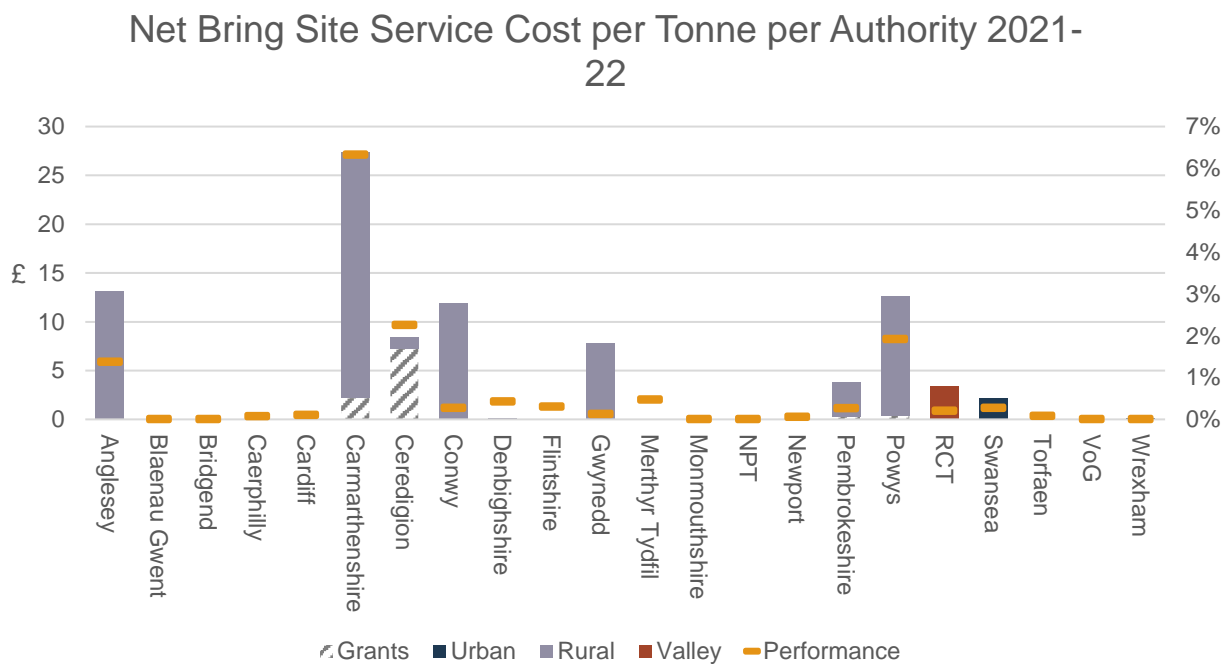


Figure 56 – Bring site costs per tonne.

100. It can be seen that both cost and performance vary widely across group. This largely reflects the different levels of provision across councils. However, in some cases the costs of collecting these wastes are included by other services such as HWRC.

101. From the core data it is possible to compare 2021/22 overall Bring site service expenditure with that of 2020/21:

	20/21	21/22	% Change	21/22 Cost per hh
Bring	£952,408	£972,691	+2.13%	£0.67

102. Bring site expenditure increased by 2% between 2020/21 and 2021/22. During the same period, mass collected via the bring site network reduced by 481 tonnes (5%) due to a drop in the number of bring sites; continuing a longer-term trend. The increase in expenditure is likely to be linked to inflation. When taking inflation into account, bring sites saw an actual decrease in expenditure in real terms.

103. It is likely that mass of material collected via the bring site network is reducing due to comprehensive kerbside collection systems and that the number of sites will continue to decrease due to high levels of contamination in recycling and commercial waste being deposited. However, bring sites do continue to make a significant contribution to recycling rates for some councils, particularly rural councils. Carmarthenshire for example collected 7% of MSW from Bring sites.

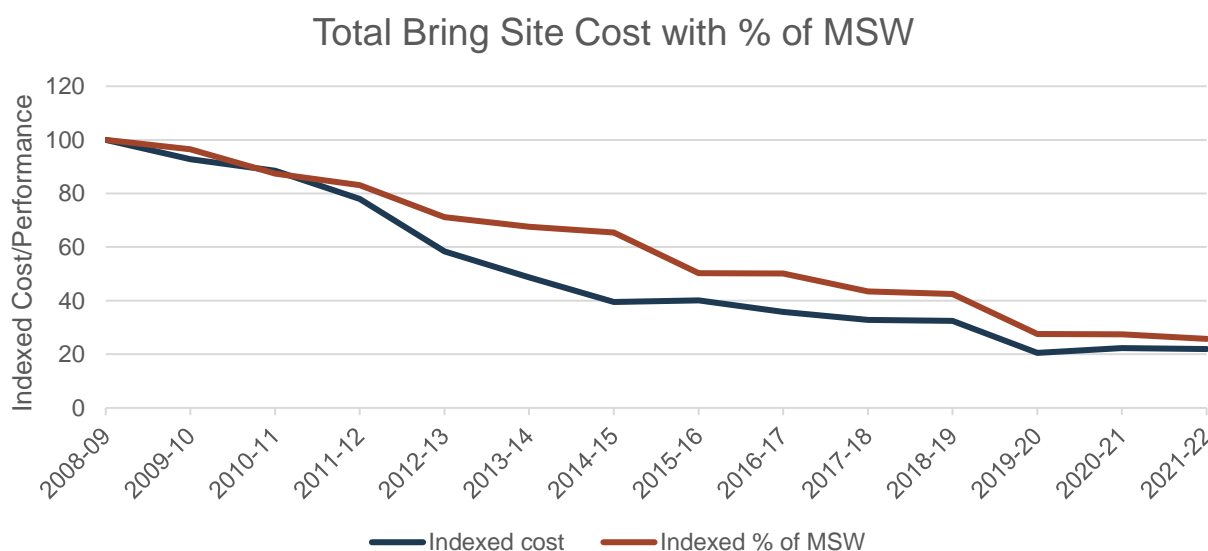


Figure 57 – Bring site expenditure since 2008/09

105. Once again, the trend over the longer term can be examined. Both expenditure and mass recycled via the bring site network has fallen steadily since 2008/09. The graph shows a slight increase in expenditure during 2020/2021 which can be attributed to pandemic restrictions. The decrease in performance is likely to be due to the on-going reduction of the number of bring sites in councils.

11. Other Waste Collected

11.1 Trade Waste Service

104. Figure 58 shows the total trade waste service cost (net of income).

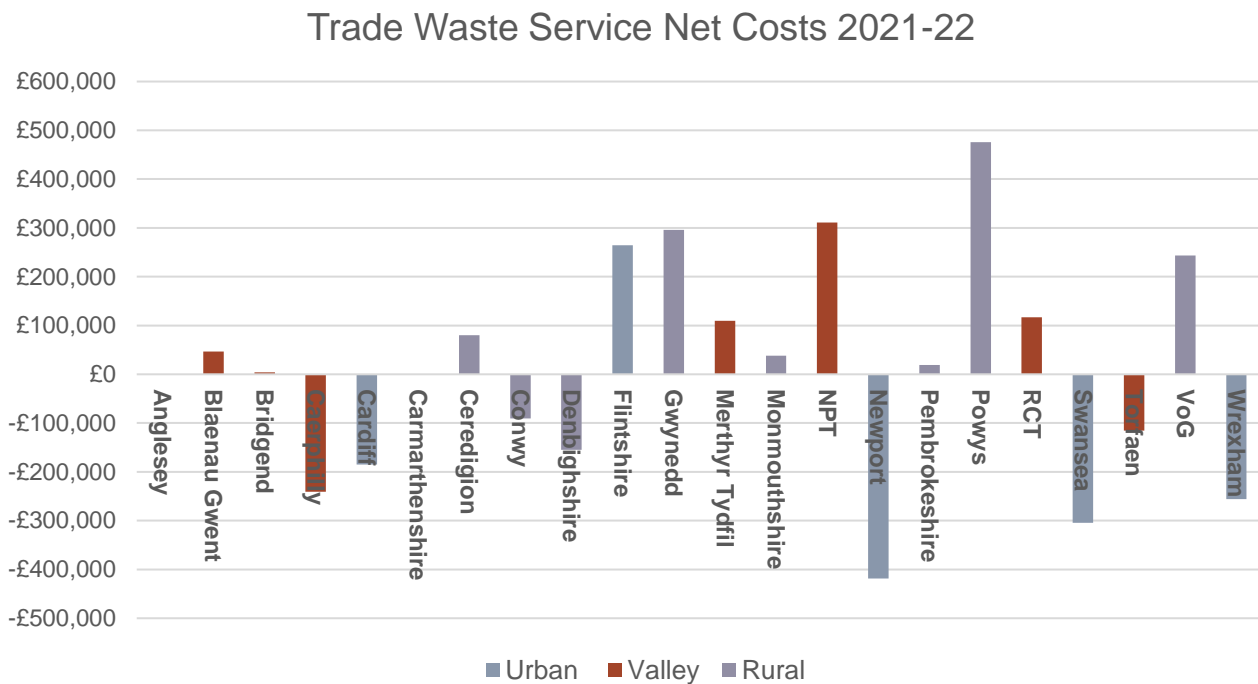


Figure 58 – Trade waste service cost¹⁵

105. Some trade waste services are operated by collecting trade waste on household collection rounds. Tonnages and associated costs are often apportioned from average bin weights therefore costs shown above may not be wholly representative of true service cost. In eight councils, income received from charging offset the costs of providing the service; this is three councils more than 2020/21. Carmarthenshire are not represented in Figure 58 due to having a Teckal agreement for management of all trade/commercial waste collections. Anglesey are not represented in Figure 58 due to not providing a trade waste service. Bridgend are not represented due to having a low overall net expenditure.

106. Between 2020/21 and 2021/22 overall trade waste income increased by £4m, increasing to £21.2m. This significant increase can be attributed to a move towards 'normal' following COVID-19 during 2020/21 where all non-essential businesses were temporarily required too partially or fully close. This resulted in reduced collections and suspended contracts.

¹⁵ More detailed information on Trade Waste services can be obtained from the Trade Waste Benchmarking Group which is facilitated by [Waste Improvement Programme](#).

11.2 Nappy and other Absorbent Hygiene Products Collections

107. A number of councils provide a collection service for nappies and other Absorbent Hygiene Products (AHP) that is separate from residual waste and other hygiene/clinical collections; Eight councils (Blaenau Gwent, Bridgend, Cardiff, Carmarthenshire, Gwynedd, Pembrokeshire, Rhondda Cynon Taf and Swansea) send the waste to be treated at Natural UK. Figure 59 below shows the service cost per tonne which includes collection, transfer and treatment costs.

108. Between 2020/21 and 2021/22 overall nappy and AHP service expenditure increased by 11%, increasing to £4.7m. Overall tonnage increased by 16%, increasing by over 1000t during the same period. Increases in both expenditure and mass collected is likely to be a result of increased participation and service provision.

109. Costs per tonne associated with such services are shown in Figure 59. The cost per tonne remains high and varies significantly from £176- £894 per tonne. Variation in costs could be due to a number of factors including staff and vehicles dedicated to the service, haulage costs, tonnages collected, in house versus contractor service costs etc.

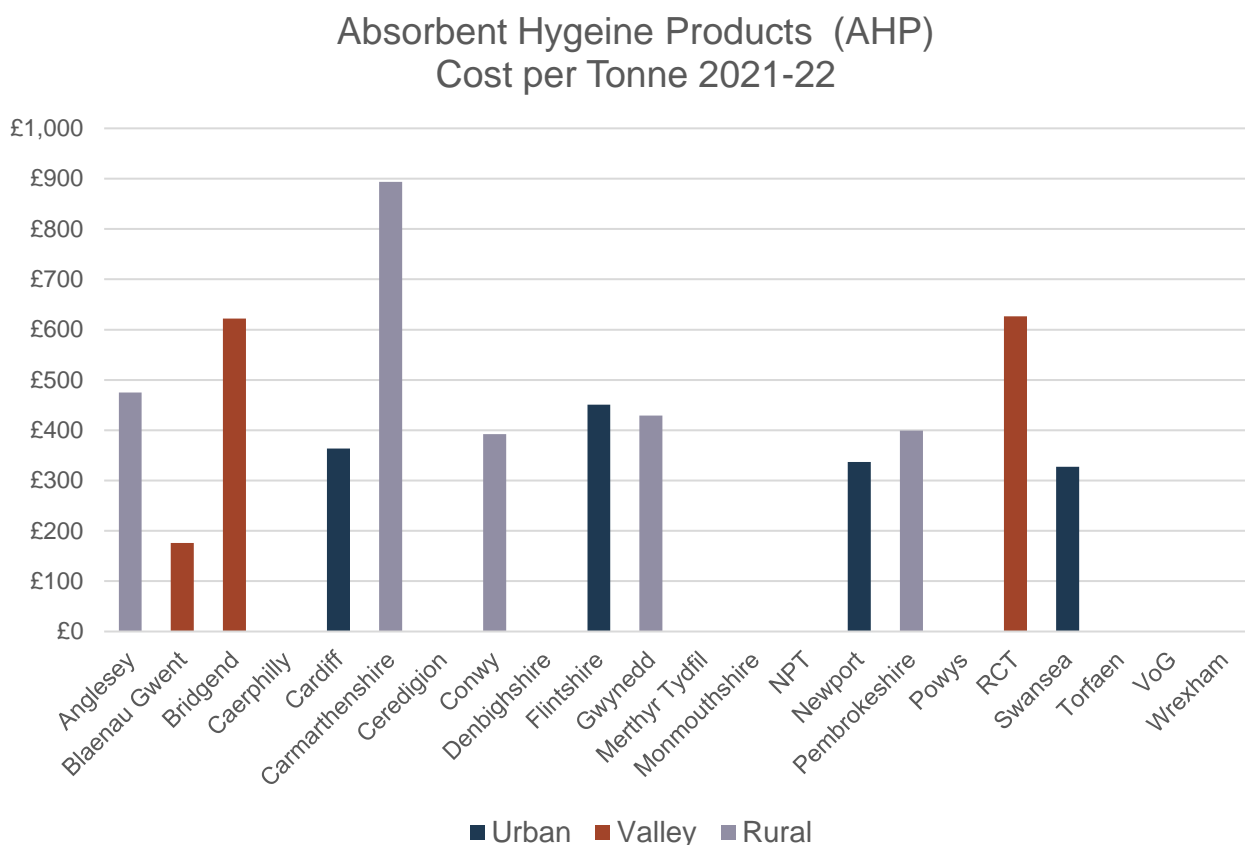


Figure 59 – Nappy/Absorbent Hygiene Products (AHP) Cost per tonne

11.3 Clinical Waste

110. Figure 60 shows four councils (Flintshire, Gwynedd, Merthyr Tydfil, and Wrexham) exhibiting costs for providing clinical waste collections. These costs include clinical waste collections on behalf of Local Health Boards as well as other separate hygiene collections. There may be more councils providing clinical waste collections but are unable to apportion the costs and therefore not shown in figure 60.

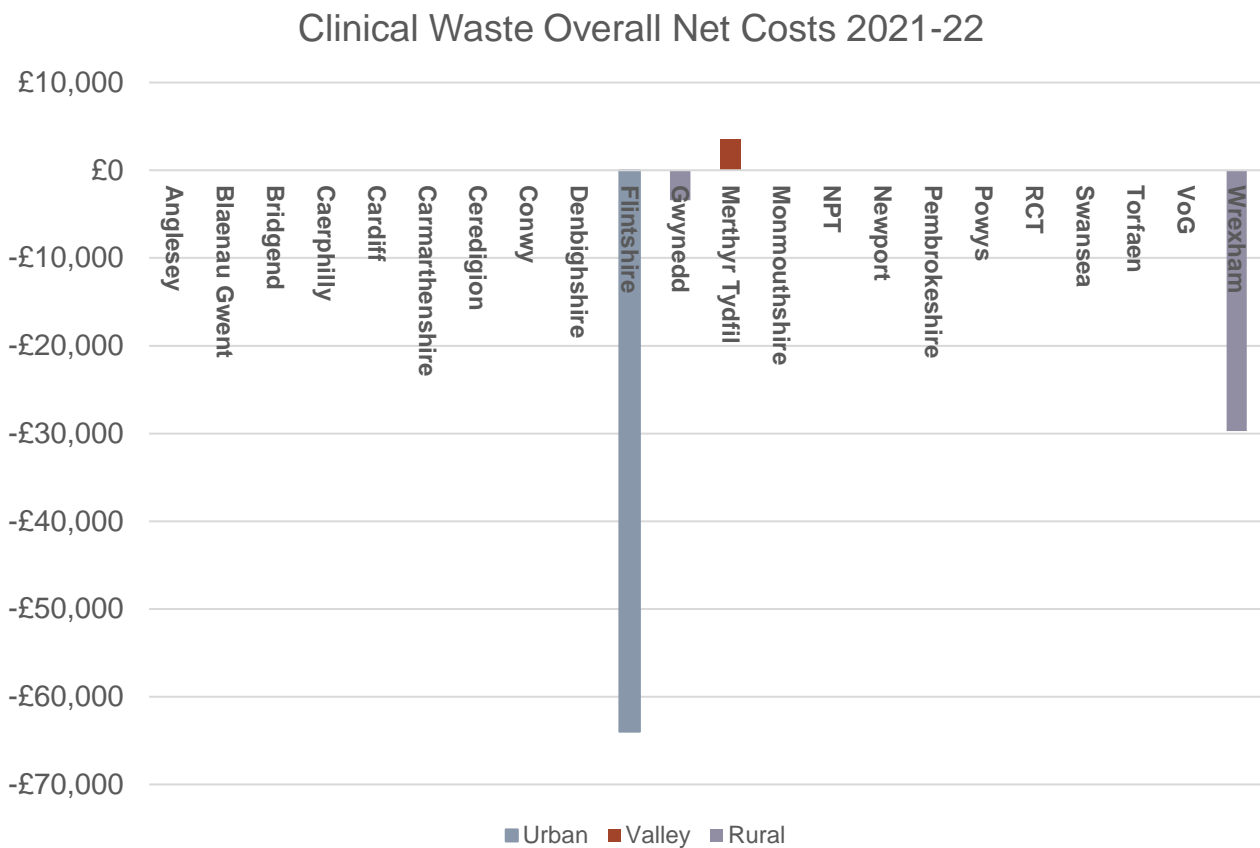


Figure 60- Clinical waste Cost

12. The Next Stage

- The Annual Waste Finance Report is a quantitative report to track expenditure over time. Councils would have received access to a financial summary report detailing their own councils waste expenditure on household waste services and their position relative to the other Welsh councils.
- The Annual Waste Finance Report is intended to form the basis for further analysis in the benchmarking work. This year three benchmarking papers will be available to councils with further detailed analysis of collection costs, primarily focusing on food waste services, dry recycling services and household waste recycling centres (HWRC).
- The Waste Improvement Finance Project will develop over time to take new policies such as Extended Producer Responsibility (EPR) and Deposit Return Scheme (DRS) into consideration.

Appendix – Table A
Service collection detail

Council	Recycling Collection Method	Residual Frequency	Residual Receptacle	Garden Waste Frequency	Garden Waste Charge	Number of HWRCs	Number of Reuse Sites
Anglesey	Blueprint	Three Weekly	240 Litre Wheelie Bin	Fortnightly (collected all year round)	Charge	2	
Blaenau Gwent	Blueprint	Three Weekly	240 Litre Wheelie Bin	Weekly (Seasonal)	No Charge	2	
Bridgend	Blueprint	Fortnightly	65L Kerbside Blue Sack (2 bags)	Fortnightly (Seasonal)	Charge	3	1
Caerphilly	Co-mingled	Fortnightly	240 Litre Wheelie Bin	Weekly (collected all year round)	No Charge	6	1
Cardiff	Co-mingled	Fortnightly	140 Litre Wheelie Bin or Red Striped Sack (3 bags)	Fortnightly & Monthly in Winter	No Charge	2	1
Carmarthenshire	Co-mingled (Fortnightly)	Fortnightly	Households provide their own bags (4 bags)	Fortnightly (Seasonal)	Charge	4	1
Ceredigion	Twin Stream	Three Weekly	Households provide their own bags (not restricted)	Fortnightly on request	Charge (Service was mostly suspended 2021/22)	4	1
Conwy	Blueprint	Four Weekly	240 Litre Wheelie Bin	Fortnightly	Charge	2	1
Denbighshire	Co-mingled (Fortnightly)	Fortnightly	140 Litre Wheelie Bin	Fortnightly	Charge	3	
Flintshire	Blueprint	Fortnightly	180 Litre Wheelie Bin	Fortnightly	Charge	5	
Gwynedd	Blueprint	Three Weekly	240 Litre Wheelie Bin	Fortnightly	Charge	8	1
Merthyr Tydfil	Blueprint	Fortnightly	140 Litre Wheelie Bin	Fortnightly (Seasonal)	No Charge	2	1
Monmouthshire	Multi Stream	Fortnightly	Households provide their own bags (2 bags)	Weekly (Seasonal)	Charge	4	1
NPT	Blueprint	Fortnightly	140 Litre Wheelie Bin	Fortnightly	No Charge	3 (1 is a shared site)	1

Appendix – Table A
Collection service detail



						with Powys (Council)	
Newport	Blueprint	Fortnightly	120 Litre Wheelie Bin	Fortnightly	No Charge	1	1
Pembrokeshire	Blueprint	Three Weekly	Residual bags supplied (3 bags)	Fortnightly (Seasonal)	Charge	6	
Powys	Blueprint	Three Weekly	180 Litre Wheelie Bin	Fortnightly (Seasonal)	Charge	5 (1 is a shared site with NPT)	
RCT	Twin Stream	Fortnightly	Mix of 120 & 240 Litre Wheelie Bins	Weekly & fortnightly in winter	No Charge	6	2
Swansea	Multi Stream (Fortnightly)	Fortnightly	Households provide their own bags (3 bags)	Fortnightly	No Charge	5	1
Torfaen	Kerbside Sort	Fortnightly	140 Litre Wheelie Bin	Fortnightly	No Charge	1	1
Vale of Glamorgan	Blueprint	Fortnightly	Households provide their own bags (2 bags)	Fortnightly (Seasonal)	No Charge	2	
Wrexham	Blueprint	Fortnightly	240 Litre Wheelie Bin	Fortnightly & monthly in winter	Charge	3	1

For further information on service detail go to the Benchmarking Hub: <https://www.benchmarkingwales.net/IAS/launch>