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Waste Management in Wales – Preventing Waste



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This report has been prepared for presentation to the National Assembly under the Government of Wales Act 2006.

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Mae'r ddogfen hon hefyd ar gael yn Gymraeg.

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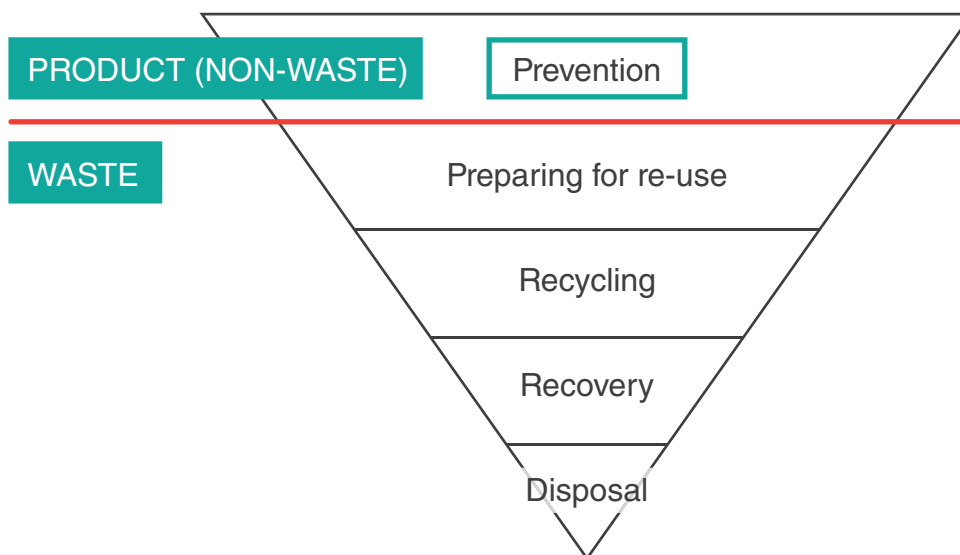
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Summary report

Summary

- 1 Waste management is an important and complex issue that covers a range of different but related approaches. The European Union Waste Hierarchy (Figure 1) shows that preventing the production of waste, or preparing waste for reuse, has much greater environmental benefit than recycling, which in turn has greater environmental benefits than other forms of recovery such as energy from waste. At the base of the hierarchy, with few environmental benefits, is disposal by means that recovers no energy.

Figure 1: the waste hierarchy



Source: Directive 2008/98/EC on waste (Waste Framework Directive)¹

- 2 This report focuses on waste prevention (Box 1). It forms one of a set of three related pieces of work on waste management in Wales published by the Auditor General for Wales. The other two pieces of work have considered issues relating to municipal recycling and the procurement of residual and food waste treatment capacity.

¹ The first Waste Framework Directive [75/442/EEC] was amended in 1991 through Directive [91/692/EEC] and again in 2008 through the Waste Directive [2008/98/EC], which was itself amended in 2018 through Waste Directive (EU) 2018/851. Separate to these Directives, the 'Landfill Directive' [1999/31/EC] regulates waste management of landfills in the European Union.

Box 1: EU definition of waste prevention from the 2008 Waste Framework Directive

Measures taken before a substance, material or product has become waste, that reduce:



The quantity of waste, including through the reuse of products or the extension of life span of products.



The adverse impacts of generated waste on the environment and human health.



The content of harmful substances in materials and products.

- 3 The Welsh Government supports a ‘circular economy’², based on a principle that better resource efficiency could contribute to significant financial and other benefits. The Welsh Government considers that the circular economy aligns with the well-being goals set out under the **Well-being of Future Generations (Wales) Act 2015** and with its **Towards Zero Waste** strategy (Figure 2). Waste prevention is an important part of the Welsh Government’s approach to resource efficiency. A recent academic review has suggested that the overall policy approaches that the Welsh Government has adopted in pursuit of becoming a circular economy are better developed in Wales than in other parts of the UK based on the criteria applied through the research³.
- 4 An emphasis on prevention is also one of the five ways of working that underpin the sustainable development principle as set out in the Well-being of Future Generations (Wales) Act. Waste prevention is the most effective means of reducing the ecological footprint⁴ of waste. The ecological footprint of Wales is one of the 46 national indicators of well-being under the Act.

2 In a circular economy resources are kept in use for as long as possible, maximum value is extracted from them whilst in use, then at the end of their life materials are recovered and regenerated.

3 Anne P. M. Velenturf, Phil Purnell, Mike Tregent, John Ferguson and Alan Holmes, **Co-Producing a Vision and Approach for the Transition towards a Circular Economy: Perspectives from Government Partners**, Sustainability 10(5), 1401, May 2018.

4 Ecological footprinting is an indicator of the total environmental burden that society places on the planet and it represents the area of land needed to provide raw materials, energy and food, as well as absorb pollution and waste created.

Figure 2: the goals and outcomes sought from Towards Zero Waste

Goal	Outcome
A Sustainable Environment	A Sustainable Environment, where the impact of waste in Wales is reduced to within our environmental limits by 2050. This means we will take action on reducing the ecological footprint of waste in Wales to 'One Wales: One planet' levels through waste prevention and recycling, so that we contribute to using only our fair share of the earth's resources.
A Prosperous Society	A Prosperous Society, with a sustainable, resource efficient economy. More 'green jobs' across a range of skill levels will be provided within the waste and resource management industry in Wales, and increased profit for businesses will be achieved through resource efficient practices, which are 'future proofed' against increasing competition for resources.
A Fair and Just Society	A Fair and Just Society, in which all citizens can achieve their full human potential and contribute to the wellbeing of Wales through actions on waste prevention, reuse and recycling.

Source: Welsh Government, **Towards Zero Waste, One Wales: One Planet**, June 2010

- 5 Towards Zero Waste sets out the following ambition: 'By 2050 we will as a minimum reduce the impact of waste in Wales to within our environmental limits (which we define as One Wales: One planet levels of waste, roughly 65% less waste than we produce now), aiming to phase out residual waste through enhanced actions on waste prevention and sustainable consumption and production and ensuring that all waste that is produced is reused or recycled.' The strategy has an ambitious scope, covering all waste arising from household and non-household sources. Non-household sources include commercial, industrial, construction and demolition waste.

- 6 A suite of sector plans, planning policies and technical advice notes support Towards Zero Waste. The Waste Prevention Programme for Wales⁵ ('the Programme') also supports the strategy by describing policies, targets, work programmes and expected outcomes for waste prevention⁶. This suite of documents together comprises the statutory Waste Management Plan for Wales. **Appendix 2** outlines the main objectives and action areas for the Programme and each waste sector plan.
- 7 The Welsh Government has noted that Wales is one of only a few countries worldwide to set waste prevention targets, although these targets are not statutory. The key targets in the Waste Prevention Programme had already been set out indicatively in Towards Zero Waste. They are based on an annual percentage reduction in waste arising through to 2050 – regardless of population or economic trends – and set against 2006-07 baselines.



1.2% reduction a year

Household waste



1.2% reduction a year

Commercial waste



1.4% reduction a year

Industrial waste



1.4% reduction a year

Construction and demolition waste

- 5 Welsh Government, **Towards Zero Waste One Wales: One Planet, The Waste Prevention Programme for Wales**, December 2013.
- 6 European Union **Articles 11 and 29 to 33 of the Waste Framework Directive** required member states to establish waste prevention programmes by 12 December 2013. The European Commission produced guidance for member states in **Preparing a Waste Prevention Programme** in December 2012. The European Environment Agency regulates compliance with the Directive.

- 8 The Welsh Government published the **Towards Zero Waste Progress Report** (the 2015 Progress report) in July 2015 to report on progress in delivering the national waste strategy⁷. More specifically, in July 2017 the Welsh Government also published a summary report containing a review of the progress of actions for waste prevention⁸.
- 9 The Welsh Government now plans to consult on an update of Towards Zero Waste in 2019. In advance of that review, it has commissioned an evaluation of the statutory waste plan for Wales, including its economic benefits, against the Well-Being of Future Generations (Wales) Act 2015. In December 2018, the UK Government published a revised resources and waste strategy for England⁹. The strategy, while largely England focussed, includes some proposals for UK-wide measures on waste, in agreement with the devolved administrations and with further consultation on specific measures ongoing.
- 10 Our report considers the level of priority that the Welsh Government has given to waste prevention, including specific funding support and opportunities to make use of legislative and financial levers. It also considers whether the Welsh Government is keeping track with its waste prevention targets and the quality of data available to the Welsh Government with which to measure progress. We have focussed on developments since the publication of the Waste Prevention Programme in December 2013, although we have taken account of previous data where this demonstrates broader trends. We have not sought to evaluate the value for money of the specific waste prevention activities that make up the Waste Prevention Programme or as set out in the Welsh Government's sector plans. **Appendix 1** sets out our audit methods.
- 11 **Overall, we found that while the Welsh Government has a plan for waste prevention, it has focussed more attention and resources on recycling. The data used by the Welsh Government to measure performance against waste prevention targets is of variable quality and indicates mixed progress.**

7 The Waste Framework Directive requires the evaluation of waste strategies every six years. Although not yet published, the Welsh Government has now completed this evaluation.

8 Welsh Government, **Towards Zero Waste Sector Plan and Waste Prevention Programme Actions: Summary Report June 2010-March 2016**, July 2017.

9 Department for Environment, Food and Rural Affairs and Environment Agency, **Our waste, our resources: a strategy for England**, December 2018.

- 12 The Welsh Government has focussed successfully on increasing municipal recycling. Waste prevention has generally had a lower profile despite some important initiatives, for example on food waste prevention. While the Welsh Government has developed its own waste prevention programme, which reflects common practice, many of the factors that influence the amount of waste generated are not things that the Welsh Government can directly control. Nevertheless, there are opportunities to learn from approaches elsewhere and to make further use of legislation and financial incentives. One opportunity that the Welsh Government is considering relates to extending producer responsibility for waste¹⁰.
- 13 The Welsh Government has provided councils with significant funding for their municipal waste management services, but this has mostly supported recycling with very little of it spent on waste prevention. In 2016-17 for example, councils spent at least £60 million of the £64.3 million allocated in the Single Revenue Grant on activities that were primarily concerned with increasing recycling.
- 14 Between October 2015 and September 2018, the Welsh Government gave £13 million to three not-for-profit organisations with objectives that include, but are not necessarily limited to, waste prevention. The Welsh Government awarded the bulk of this funding – £11.2 million – to the Waste and Resources Action Programme, building on previous grant funding. There is evidence available to demonstrate positive impacts from this grant funding. It is not always possible to disaggregate waste prevention spending or outcomes from the wider work of these organisations that the Welsh Government funding supports, and which can also deliver other socio-economic benefits.
- 15 The Welsh Government has good data on the amount, types and destination of municipal wastes from the WasteDataFlow system. The Welsh Government does not have up to date data on the amount of commercial, industrial, construction and demolition waste arising. Surveys to support estimates for these wastes are conducted on a periodic basis and are costly. The last survey round was in 2012, although some further data collection is planned. The Welsh Government is involved in wider project work to explore the potential for a new single UK waste data collection system.

¹⁰ Extended producer responsibility makes manufacturers responsible for the products they make or sell, and any associated packaging, when they become waste. This means producers help to pay for the costs of collecting, transporting, recycling and responsibly disposing of these products and materials at the end of their life.

- 16 The Welsh Government's targets for waste prevention are ambitious, but with progress dependent on a range of factors, it is difficult to assign clear lines of accountability. The amount of household waste being generated has reduced in line with the Welsh Government's target since 2006-07 but with some fluctuation in recent years. Our separate work on the procurement of residual and food waste treatment capacity has noted that projections used as the basis of contracts for three major residual waste projects assume that councils will still need to treat significant volumes of residual waste beyond 2040. Those projections do not align well with the Welsh Government's overall aspiration of zero residual waste by 2050.
- 17 When last reported in 2012, there had been no progress to reduce the amount of commercial and industrial waste, and the economic downturn played a significant part in the large reduction in construction and demolition waste. The Welsh Government will need to do more to decouple waste generation from economic activity if it is to meet its waste prevention targets in the future.

Recommendations

Recommendations

R1 Increasing the focus on waste prevention to reflect the overall aims of Towards Zero Waste

Available data on the amount of waste produced suggests mixed progress to deliver the Welsh Government's waste prevention targets.

We recommend that the Welsh Government:

- a) revisits the relative priority it gives to recycling and waste prevention as part of its review of Towards Zero Waste;**
- b) sets out clearly the expectations on different organisations and sectors for waste prevention; and**
- c) revisits its overall waste prevention targets and the approach it has taken to monitor them in light of progress to date, examples from other countries and in the context of current projections about waste arising through to 2050.**

Recommendations

R2 Improving data on commercial, industrial, construction and demolition waste

The Welsh Government is a partner in initial work to assess the feasibility of developing a new digital solution to track all waste. **If this preferred option does not succeed, we recommend that the Welsh Government works with Natural Resources Wales to explore the costs and benefits of other options to improve non-municipal waste data in Wales, including additional powers to require waste data from businesses.**

R3 Enhancing producer responsibility and using more legal, financial and fiscal levers

The Welsh Government has opportunities to influence waste prevention through legislation and financial incentives. It can also influence changes at UK level where fiscal matters are not devolved. **We recommend that the Welsh Government consider whether provisions to extend producer responsibility and the use of financial powers such as grant conditions, fiscal measures and customer charges and incentives, are needed to promote and to prioritise waste prevention.**

Part 1

The Welsh Government has a plan for waste prevention but has focussed more attention and resources on recycling



- 1.1 This part of the report examines the priority that the Welsh Government has given to preventing the generation of waste. It considers the Welsh Government's approach to waste prevention and opportunities to use legislation and financial incentives to support this work. Finally, we consider the Welsh Government's funding of organisations to deliver waste prevention initiatives and evidence of its impact.

The Welsh Government has focussed successfully on increasing municipal recycling, but waste prevention has generally had a lower profile despite some important initiatives

- 1.2 National strategy has focussed on sustainable waste management since 2001-02, and waste prevention is a key outcome sought in the current strategy Towards Zero Waste. To meet the overall zero waste aspirations the public and private sectors, led by the Welsh Government, will need to focus on both recycling and waste prevention. In our 2012 report on **Public Participation in Recycling**¹¹, we noted that the Welsh Government's proposed actions to deliver waste prevention remained vague, as did the contribution from each towards the Welsh Government's desired outcomes.
- 1.3 Since the publication of Towards Zero Waste in 2010, and our previous 2012 report, the Welsh Government has published its Waste Prevention Programme. Waste prevention measures need to cover the use of all materials from extraction and manufacture through to the point of consumption and disposal. Waste prevention therefore needs to be a cross-cutting responsibility across the Welsh Government, rather than the sole responsibility of waste management officials. The current Programme for Government¹² does not mention waste prevention specifically. However, it prioritises setting out a route map for a more resource efficient economy and reducing the environmental impacts of production and consumption.

11 Auditor General for Wales, **Public Participation in Waste Recycling**, February 2012.

12 Welsh Government, **Taking Wales Forward: Prosperity for All: the national strategy**, September 2017.

- 1.4 We found that other Welsh Government departments have started to engage more in waste management matters. For example, the focus on the circular economy has presented increased opportunity for the Welsh Government's waste strategy team to work with economy and skills officials on policy development and implementation. There has also been engagement with the Welsh Government's innovation team, which provides support to businesses looking to improve their products, processes or services. This support can include measures to minimise waste such as promoting and developing products with increased longevity. The Welsh Government's new 'Economic Contract' sets out its expectation that businesses will make a contribution aligned to its wider objectives in return for financial support, including decarbonisation¹³. Other examples highlighted by the Welsh Government include work with procurement and food policy leads to embed resource efficiency (including waste prevention) into mainstream practice and programmes¹⁴.
- 1.5 Nevertheless, the feedback that we received from various stakeholder organisations indicated that they regarded the recycling targets as the overriding waste policy priority of the Welsh Government. Several of these stakeholders were also not aware of, and had therefore not prioritised, actions within the Waste Prevention Programme.
- 1.6 The Welsh Government has been successful in delivering a significant increase in the municipal recycling rate, up from 8.4% in 2001-02 to 63.8% in 2016-17. As noted in our recent report on municipal recycling, recycling in Wales exceeds the rate recorded in England, Northern Ireland and Scotland and compares favourably with countries in the European Union and estimated recycling rates elsewhere in the world. There is the possibility that recycling rates could decrease if waste prevention disproportionately focussed on materials that would otherwise have become waste and been recycled, rather than reducing all types of waste by the same proportion. A reduction in the amount of waste available for recycling could also have a negative impact on the income that councils gain from their sale.

13 The Auditor General's November 2018 report on **Welsh Government Financial Support for Business** provided further details about the new Economic Contract and the Welsh Government's Economic Action Plan.

14 Including the Green Growth Pledge that is part of the sustainability support available to Welsh small and medium-sized enterprises through Business Wales.

- 1.7 However, improving recycling facilities and measures (such as separating out waste) could have a waste prevention effect by making individuals more aware of the waste they produce. It could also reduce the cost of municipal waste services.
- 1.8 It has been relatively straightforward to increase municipal recycling rates compared to reducing the overall amounts of this waste produced, because the Welsh Government has policy and financial levers that have been used to direct councils to encourage recycling. Making progress with waste prevention is more complex. The amount of household waste produced is affected by various factors, including affluence, consumer behaviour, product changes and product pricing, not all of which are matters that the Welsh Government can directly control. Similarly, the amount of commercial, industrial, construction and demolition waste being produced depends on various factors including the state of the economy.
- 1.9 While recycling may have been seen as the policy priority, there have been a range of initiatives focussed on waste prevention. For example, food waste prevention has had a particular public profile through the Waste and Resources Action Programme's Love Food: Hate Waste¹⁵ campaign. An analysis by the Waste and Resources Action Programme in 2017 estimated, based on compositional analysis, that there had been an 11% reduction in avoidable household food waste in Wales between 2009 and 2015¹⁶. Food waste prevention has also been an area of focus for UK-wide voluntary agreements covering a range of industry sectors that the Welsh Government supports. The 'Courtauld Commitment 2025' now brings together organisations across the UK food system in an effort to reduce food waste by 20% by 2025¹⁷.

15 Love Food: Hate Waste is a waste prevention campaign delivered across the UK by the Waste and Resources Action Programme. The campaign aims to raise awareness of the need to reduce food waste by doing some easy practical everyday things in the home. Preventing food waste saves money and benefits the environment.

16 Waste and Resources Action Programme, **Household Food Waste in Wales, 2015**, January 2017.

17 The Courtauld Commitment 2025 supports the UK's contribution to the sustainable development goals set by the United Nations to halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains (including post-harvest losses) by 2030.

While the Waste Prevention Programme reflects common practice, there are opportunities to learn from approaches elsewhere and to make further use of legislation and financial incentives

- 1.10 The UK government published the Waste Prevention Programme for England¹⁸ in late 2013. There are similarities with the Waste Prevention Programme for Wales, as both documents follow the same European Union template. For example, both programmes focus on waste awareness and promotion; provide funding for the Waste and Resources Action Programme and steer away from legislation and the use of financial penalties¹⁹. However, unlike the Wales plan, the Waste Prevention Plan for England does not set an overall target for waste reduction. The English plan states that it will assess progress by monitoring the amount of waste that arises per household, and per unit of Gross Value Added²⁰.
- 1.11 The Welsh Government also aims to use a measure of industrial and commercial waste generation against Gross Value Added as an indicator of strategic progress, and in particular to promote the decoupling of waste generation from economic growth. In assessing the efficiency of the Wales Waste Plan²¹, the Welsh Government has considered the Gross Value Added of the Sustainable Waste Management Grant funding for councils between 2001-02 and 2014-2015. Most of that grant funding was spent on recycling activities (paragraphs 1.30 to 1.36).
- 1.12 The Scottish Government also published its waste prevention plan in 2013, setting a broad target to reduce the overall amount of waste generated by 7% by 2017, against a 2011 baseline²². A second target is to reduce the overall amount of waste generated by 15%, by 2025. The Scottish strategy also commits to monitoring the success of the programme against the total amount of waste produced by sectors, the amount of waste produced by sectors per unit of Gross Value Added, and the carbon impact of waste.

18 Department for Environment, Food and Rural Affairs, **The Waste Prevention Programme for England**, December 2013.

19 The Welsh Government did not have tax raising powers when it published the Waste Prevention Programme Prevention Plan in 2013.

20 Gross Value Added provides a monetary value for goods and services produced, less the cost of all inputs and raw materials that are directly attributable to that production.

21 Welsh Government, **Wales Waste Plan Review – Work Stream 1 WWP Evaluation – Delivering the Objectives and Realising the Benefits**, June 2017.

22 Scottish Government, **Safeguarding Scotland's Resources**, October 2013.

1.13 In 2016, the Scottish Government also introduced a target for a 33% reduction in food waste by 2025 (Box 2). The Welsh Government announced in August 2017 that it was considering introducing a target to halve food waste in Wales by 2025 from a 2006-07 baseline. The Welsh Government has recognised that experience in Scotland will be useful to inform its response to the proposed target for Wales.

Box 2: the Scottish Government's Circular Economy Strategy

Making Things Last – A Circular Economy Strategy for Scotland,

published in February 2016, links to both Scotland's Economic Strategy and to its Waste Plan. The strategy prioritises action in areas where Scotland is in position to make rapid progress, such as remanufacturing. It also prioritises areas where there is scope for the greatest benefit, such as in the food and bio-economy sectors, energy infrastructure and construction.

The Scottish strategy also includes a target to cut food waste by 33 per cent by 2025, and to work with industry to reduce on-farm losses of edible produce. This was the first of this type of target set in Europe. The strategy also promotes a new approach to producer responsibility, through a single framework for all product types that drives choices for reuse, repair and remanufacture.



1.14 There are other measures that the Welsh Government could consider to track progress. For example, in its waste prevention programme, the German government suggested using a 'waste intensity indicator' to assess the volume of waste arising from individual sectors in relation to their net output and number of employees. Such an indicator could demonstrate the sectors that generate the most waste in the production of their goods and services.

1.15 Governments can attempt to reduce waste in several ways, including by legislation and regulation, fiscal incentives such as tax breaks or grants, as well as softer mechanisms such as awareness raising and promotional activities. Various waste related European Union directives have been transposed into UK legislation, including for packaging waste, waste electrical and electronic equipment, end of life vehicles, batteries and accumulators, and for agricultural waste²³. However, the Welsh Government has emphasised to us that these directives primarily focus on recycling and that the only one that specifically covers waste prevention is the 'essential requirements' part of the Packaging Directive which reflects the principle of 'producer responsibility'²⁴.

23 Existing targets and commitments already set out in European Union legislation will continue to apply until the UK government, or devolved administrations as appropriate, put in place alternative legislation to pursue a different course after Brexit.

24 Ensuring that businesses that sell or produce products take responsibility for wastes generated during production and for their products when they reach the end of their life.

1.16 An example of the Welsh Government's use of legislative powers to support waste prevention was the introduction of the single use carrier bag charge (Box 3). This demonstrates that appropriate and measured use of legislation and other more formal levers can also influence consumer behaviour, making them more open to other changes that support environmental initiatives.

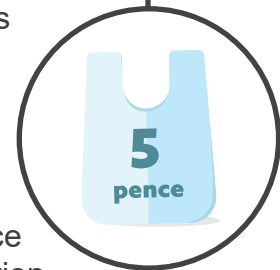
Box 3: implementation of the Single Use Carrier Bag charge

During 2009, Welsh consumers took home an estimated 350 million carrier bags from major supermarkets alone. In October 2011, the Welsh Government introduced a charge to reduce the number of carrier bags used in Wales.

Wales was the first country in the UK to introduce a charge for single use carrier bags. The Single Use Carrier Bag Charge (Wales) Regulations 2010 introduced a minimum charge of 5 pence for each bag. Since October 2011, retailers have levied the charge at the point of sale.

The overall aim of the charge for single use carrier bags was to substantially decrease the number of carrier bags consumed in Wales, to cut down on the use of resources, prevent waste and reduce their adverse effects on the environment. There was also an expectation that encouraging a shift in consumer behaviour in this regard might indirectly alter attitudes towards waste in other ways.

Data published by the Waste and Resources Action Programme in July 2015²⁵ found that the number of thin-gauge carrier bags issued by the seven main supermarkets in Wales had declined by 78% since the charge was introduced in 2011.



25 Waste and Resources Action Programme, **UK Voluntary Carrier Bag Agreement Data 2014**, July 2015.

- 1.17 In May 2011, Wales gained legislative competence to introduce its own environmental laws. The National Assembly's powers include the scope for new laws on environmental protection (on pollution, nuisances and hazardous substances) and on various aspects of waste management. The **Environment (Wales) Act 2016** puts in place legislation so that the Welsh Government can manage its resources in a more proactive, sustainable and joined-up way, and to help tackle climate change. For example, the Act extends the Welsh Ministers' powers so that they may make regulations to set an additional charge for other types of carrier bags, such as 'bags for life'.
- 1.18 In March 2016, the Welsh Government made a renewed commitment to consider 'extended producer responsibility' in the context of existing sector plan commitments, to stimulate investment in material efficiency, reduce the eventual quantity of waste produced and to extend the lifecycle of the products used. One of the main objectives of extended producer responsibility is to 'shift the financial responsibility for treating end-of-life-products from local public authorities to producers, and ultimately consumers, thereby reducing the burden on public budgets and taxpayers'²⁶. Take-back programmes that help consumers return products for manufacturers to recycle or to re-use are one example of producer responsibility related activity.
- 1.19 The Welsh Government has commissioned research to appraise the costs and benefits of an extended producer responsibility scheme for six key food and drink packaging types in Wales. In addition, in July 2018, the Waste and Resources Action Programme published an analysis of a roadmap for actions and interventions that could be implemented to support increased preparation of waste for re-use and with reference to approaches adopted in Belgium, France, Spain and Scotland²⁷. The Welsh Government has been working with the UK Government and the other devolved administrations on proposals for changes to the UK packaging waste regulations to introduce extended producer responsibility²⁸.

26 OECD, **Extended Producer Responsibility – Updated Guidance for Efficient Waste Management**, 2016.

27 Waste and Resources Action Programme, **Preparing for Re-Use: A Roadmap for a Paradigm Shift in Wales**, July 2018.

28 Department for Environment Food and Rural Affairs (UK government), Welsh Government, Scottish Government, Department of Agriculture, Environment and Rural Affairs (Northern Ireland), **Consultation on reforming the UK packaging producer responsibility system**, February 2019.

- 1.20 Natural Resources Wales (NRW) also has a role in waste as the regulator for waste management legislation across the public and private sectors. Notably, NRW issues environmental permits for large industrial installations, including major food manufacturing plants, major metal refining plants, major chemical plants, and major energy plants. These permits for large installations include a specific resource efficiency requirement which provides NRW with an opportunity to influence waste prevention at these sites. We have not considered how effectively NRW is discharging its current regulatory responsibilities as part of this work.
- 1.21 The Wales Act 2014 transferred some tax raising powers to Wales in relation to the Land Transaction Tax, the Landfill Disposal Tax and variations to income tax. The Welsh Government considers that the Landfill Disposal Tax will continue to encourage greater prevention, re-use, recycling and recovery of waste. In addition, the new Landfill Disposals Tax Communities Scheme aims to support environmental and community projects in areas affected by the disposal of waste to landfill. The scheme, managed by the Wales Council for Voluntary Action, has an annual budget of £1.5 million, including £100,000 for administration and with £1.4 million available for grant awards. Waste prevention is one of three priorities for the fund.
- 1.22 Because powers in relation to corporate taxation and VAT will remain non-devolved, the Welsh Government will not have direct control over some of the main fiscal levers on either business or consumers. However, the rest of the UK is also pursuing a similar waste prevention agenda to Wales. An example of a tax that might best work across the UK is a tax on the generation of single use plastic (or disposable plastic), with early discussions in Wales and elsewhere in the UK on how best to prevent unnecessary plastic wastes. The revised waste strategy for England, published in December 2018, includes a proposal to introduce a UK-wide tax on plastic packaging.
- 1.23 Establishing a common approach to taxing particular waste resources across the UK could also reduce the movement of these materials to jurisdictions with more preferential tax laws. In addition, Sweden is considering the introduction of tax breaks on repairs to encourage reuse, such as halving the VAT rate on repairs to bikes, clothes and shoes.

- 1.24 Financial levers are not restricted to the public sector, with the UK Environment Audit Committee recently calling for a ‘latte levy’ of 25 pence per disposable plastic cup sold by retailers²⁹. Welsh Ministers have stated that they will explore the potential for a charge on single-use drinks cups to encourage re-use, subject to decisions made by the Chancellor of the Exchequer following a call for evidence on a tax on single use plastics. In addition, the Welsh Government has worked with the UK government to develop a joint consultation on options for a deposit return scheme for drinks containers that would see customers pay more for drinks sold in single-use drink containers but with the opportunity to claim that extra cost back. Scotland has already committed to implementing a deposit return scheme, ahead of the proposed scheme in England, Wales and Northern Ireland³⁰.
- 1.25 There are a range of issues that need consideration when assessing the overall costs and benefits of such schemes relative to other waste prevention measures. In general, Wales is further ahead with recycling than other parts of the UK. Deposit return schemes are likely to divert single use plastic, glass or metal drink containers from municipal recycling collections and reduce councils’ recycling rates, although the Welsh Government expects any impact to amount to less than one percentage point. All of which means that a deposit return scheme, in particular for plastic bottles, may offer less benefit in Wales. However, it could be confusing for customers and difficult to administrate if the whole of the UK did not operate a similar scheme.
- 1.26 More focus on reducing single-use water bottles, perhaps through behaviour change and greater provision of municipal water fountains or schemes where retailers offer free water refills to the public, might tackle the problem more at source. The Welsh Environment Minister has announced the aspiration for Wales to become the first ‘refill nation’ in the world for drinking water, as a way of cutting down the use of single-use plastic bottles and has provided funding to support the ‘Refill Wales’ initiative. Another reason to focus more on waste prevention is the recent tightening of the market to export plastic wastes for treatment in China, and that there is insufficient capacity to recycle plastics in the UK once collected.

29 UK Parliament Environmental Audit Committee, **Disposable Packaging: Coffee Cups**, January 2018.

30 Department for Environment Food and Rural Affairs (UK government), Welsh Government, Department of Agriculture, Environment and Rural Affairs (Northern Ireland), **Consultation on introducing a Deposit Return Scheme in England, Wales and Northern Ireland**, February 2019.

- 1.27 Variable pricing for waste collection by weight or volume, known as ‘pay-as-you-throw’, is another option that could reduce the amount of residual waste generated. This can be useful in extending the responsibility of consumers for the products they have purchased, and subsequently discarded. Several European Union member states and other countries have implemented pay-as-you-throw schemes.
- 1.28 The feedback we received from some council officers and the Welsh Local Government Association suggested little appetite for pay-as-you-throw systems. However, there are councils that are keen to gain more powers to charge for the collection of waste in the future. There are already examples of councils using the threat of enforcement action and fines against households that repeatedly refuse to recycle or ignore advice and warnings about the amount of residual waste they put out for collection.
- 1.29 The Welsh Government also has opportunities to influence waste prevention through grant funding to business (as noted in [paragraph 1.4](#)). In March 2017, the Welsh Government announced a £6.5 million Circular Economy Capital Investment Fund to help small and medium sized enterprises in Wales make the transition towards a circular economy, in which waste prevention is an essential component³¹. However, this funding is being focussed on developing better markets for recycle in Wales, especially for plastic.

The Welsh Government has provided councils with significant funding for their municipal waste management services, but this has mostly supported recycling with very little of it spent on waste prevention

- 1.30 Councils spent £242 million in 2016-17 managing municipal waste³². Welsh Government grant income met around 85% of these costs. This included £60 million of specific grant aid provided through the Single Revenue Grant, along with some other much smaller grant allocations. Council tax contributed around £35 million and with councils also generating a small amount of income to meet these costs from direct charges for services. The remainder of the costs were met from councils’ core Revenue Support Grant.

31 Zero Waste Scotland had launched a similar £18 million fund in March 2016.

32 Welsh Local Government Association, **Waste Finance Data Report 2016-17**, March 2018.

- 1.31 The Welsh Government has provided specific grant funding to councils for their waste services since 2001-02, when it introduced the Sustainable Waste Management Grant. Until the Single Revenue Grant replaced it in 2015-16, the Welsh Government had spent a total of £853 million through the Sustainable Waste Management Grant. The Welsh Government intended that councils use this grant to develop their waste analysis, regional waste planning, waste prevention, recycling and composting projects and facilities. Councils were able to decide for themselves how to allocate this funding within the overall objectives of the grants.
- 1.32 Previous analysis of this expenditure shows that from 2001-02 to 2007-08; councils spent only 1% of this grant – from a total of £195.4 million – promoting waste prevention. From 2008-09 to 2013-14, council spending on waste prevention was included in about £10.5 million spent each year on education initiatives³³. During this latter period, councils also promoted recycling and particularly for food waste treatment and to improve the kerbside collection of recyclables.
- 1.33 **Figure 3** shows that in 2016-17, councils spent at least £60 million of the £64.3 million allocated in the Single Revenue Grant on activities that were primarily concerned with increasing recycling. The Welsh Government did not ring-fence the Single Revenue Grant just to fund waste management, and it required councils to provide a single annual spending proposal encompassing; better management of natural resources, including biodiversity and flood risk management, waste and resource efficiency and local environment quality. The Welsh Government required councils to detail individual initiatives and their cost, and how they will contribute to the multiple benefits sought in the Wellbeing of Future Generations (Wales) Act 2015.

33 Eunomia, **Review of the Sustainable Waste Management Grant**, September 2015. The review refers to spending on 'waste minimisation' which is broadly synonymous with waste prevention on the basis of the EU definition in the 2008 Waste Framework Directive (Box 1).

Figure 3: councils' use of the Single Revenue Grant for 2016-17 (£ millions)

Service area	Single Revenue Grant spend
Dry recycling	26.2
Food and green waste treatment	24.2
Household waste recycling centres	7.4
'Bring' recycling sites	0.5
Other recycling activities	1.7
Other activities	4.3
Total	64.3

Note: Other activities included work on flood risk management and environmental quality.

Source: Welsh Local Government Association, **Waste Finances Report 2016-17**, March 2018

1.34 Figure 4 shows the relatively small amounts spent overall by councils on waste prevention compared with recycling and other waste service areas in 2015-16 and 2016-17. During 2015-16, eight councils and in 2016-17 seven councils, recorded no expenditure on waste prevention.

Figure 4: analysis of total council spending on waste services for 2015-16 and 2016-17 (£ millions)

Year	Overall expenditure on waste services	Waste collection	Waste disposal	Recycling	Waste prevention
2015-16	234.0	57.4	86.2	91.0	2.8
2016-17	242.0	56.2	90.2	96.1	2.5

Note: figures exclude depreciation of capital assets.

Source: The Welsh Local Government Association provided this data from the Welsh Government's Revenue Outturn forms

- 1.35 Eunomia's review of the Sustainable Waste Management Grant concluded that councils had increasingly used the grant to fund core service delivery: the operation of kerbside recycling collections, food waste collections and household waste recycling centre management. The report made little mention of waste prevention and suggested that the primary use of the grant, and the grant that subsequently replaced it, should be to promote recycling. The Welsh Local Government Association has also noted that the profile of spending through the Single Revenue Grant – and the Sustainable Waste Management Grant before it – needs to be seen in a wider context. Notably, the pressure on councils to increase recycling to meet wider targets and avoid financial penalties.
- 1.36 From 2018-19, much of the waste element of the Single Revenue Grant has been transferred into the Revenue Support Grant settlement for councils giving councils the freedom to use this funding as they wish, including for non-waste issues. The Welsh Government has used the remainder to re-establish a stand-alone Sustainable Waste Management Grant with a total value of £18.2 million and for purposes that include, but are not limited to, waste prevention.

Between October 2015 and September 2018, the Welsh Government gave £13 million to three not-for-profit organisations with objectives that include, but are not necessarily limited to, waste prevention

- 1.37 The Welsh Government also provides core funding to not-for-profit environmental organisations. In June 2015, the Welsh Government advertised a 'call for core funding proposals' to select organisations it would support between October 2015 and March 2018. The Welsh Government awarded £22 million of grant aid to 16 organisations. In March 2018, the Welsh Government extended the period of that grant funding to September 2018 and increased the total commitment to £25 million on a pro-rata basis.

- 1.38 Of the organisations that received grant funding, the Welsh Government identified three as having objectives that include, but are not necessarily limited to, promotion of waste prevention: the Waste and Resources Action Programme; Constructing Excellence Wales; and Fareshare Cymru³⁴. These three organisations received just under £13 million in total between October 2015 and September 2018 (Figure 5). The Welsh Government awarded the bulk of this funding – £11.2 million – to the Waste and Resources Action Programme.
- 1.39 The Welsh Government decided to provide further core funding to WRAP (£1.7 million) and Fareshare Cymru (£50,000) to the end of March 2019³⁵. The Constructing Excellence Wales programme is no longer being grant funded. It is not always possible to disaggregate waste prevention spending or outcomes from the wider work of these organisations that the Welsh Government funding supports, and which can deliver other socio-economic benefits.

Figure 5: grant funding in support of waste prevention for the period October 2015 to September 2018

Organisation and summary of purpose	Grant funding	Key waste prevention outcomes reported ¹
<p>Constructing Excellence in Wales</p> <p>To deliver a support programme to assist the construction industry to improve resource management.</p> <p>The main project including a strong element of waste prevention was the Enabling Zero Waste (EZW) project which offered collaboration at all stages of the design, development and construction of sites providing mentoring and practical operational assistance with the aim of reducing waste arisings and disposal to landfill.</p>	<p>£1.2 million</p> <p>(for a range of purposes)</p>	<p>34,752 tonnes prevented through EZW²</p>

³⁴ The Waste and Resources Action Programme operates a Board that covers its activities in England, Wales and Northern Ireland. As a condition of the grant awarded in summer 2015, a Welsh Government official attends the Board as a non-voting observer. A Welsh Government official also attended the Constructing Excellence in Wales board meetings as an observer.

³⁵ Arrangements for any continued core funding beyond March 2019 are still to be confirmed.

Organisation and summary of purpose	Grant funding	Key waste prevention outcomes reported ¹
<p>Fareshare Cymru</p> <p>Support for the charity which receives food that is fit to consume and in-date from commercial suppliers and from other donations that would otherwise be disposed of, which they redistribute to vulnerable groups.</p>	<p>£300,000 (all for activity that supports waste prevention)</p>	<p>1,509 tonnes of food and drink diverted from waste to redistribution³</p>
<p>Waste and Resources Action Programme</p> <p>To engage with consumers to encourage waste prevention, and to engage with commerce and industry to improve resource management. The aim of the programme is to increase materials resource efficiency, to help to achieve the outcomes in the Strategy and to deliver a circular economy for Wales.</p>	<p>£11.2 million (WRAP has estimated that it spent £0.55 million a year on specific waste prevention activities)</p>	<p>5,295 tonnes of food waste prevented⁴</p>

Notes:

1. Waste prevention outcomes are not the only matters reported on.
2. To end of March 2018, exceeding the target outcome of 32,000 tonnes.
3. To end of September 2018.
4. For the three financial years from April 2015 to March 2018. The figure mainly reflects impacts from support for industry initiatives and excludes evaluation of impacts from Love Food: Hate Waste (paragraph 1.9).

Source: Wales Audit Office

- 1.40 The Welsh Government has contracted separately with the Waste and Resources Action Programme to deliver the Collaborative Change Programme³⁶ from October 2016 to March 2019, at a cost of more than £2 million per year. The organisation has also previously received funding to support delivery of Welsh Government's 'Resource Efficient Wales' services³⁷.
- 1.41 As a part of the review of Towards Zero Waste, the Welsh Government has undertaken a detailed review of the impact and value of the Wales Waste Plan³⁸. The evaluation considers the impact of the Waste and Resources Action Programme but acknowledges some limitations. For example, it notes that the scope of the analysis and its accuracy are dependent on the other information sources reviewed. It also highlights potential overlap between the economic impacts estimated for Waste and Resources Action Programme activity and wider activity.
- 1.42 The evaluation does not differentiate the benefits attributable to waste prevention activities. However, in overall terms it reports the following impacts from the Welsh Government's funding for the Waste and Resources Action Programme between 2011 and 2015:
- just under £83 million of sales growth through action taken by beneficiaries of activities in Wales engaged in the recycling and reprocessing of waste materials;
 - £8.4 million in cost savings to businesses, households and the public sector, modelled on recycling and avoiding the generation of waste;
 - £14.9 million of additional capital investment by the private sector from the recycling and reprocessing of waste materials; and
 - 121 full-time equivalent jobs created by beneficiaries of the Waste and Resources Action Programme's activities in Wales engaged in the recycling and reprocessing of waste materials.

36 The Collaborative Change Programme supports councils by offering waste management service reviews, business planning, operational support and materials marketing. The Programme is discussed in more detail in our separate report on municipal recycling: Auditor General for Wales, **Municipal Recycling**, November 2018.

37 Although no longer operating, Resource Efficient Wales (REW) was a single point of contact to help individuals, communities, businesses and public sector organisations in Wales to save energy and water and to reduce and re-use waste.

38 The Welsh Government **Wales Waste Plan Review – Work Stream 1 WWP Evaluation – Delivering the Objectives and Realising the Benefits – Part B Detailed Report** June 2017.

Part 2

The data used by the Welsh Government to measure performance against its ambitious waste prevention targets is of variable quality and indicates mixed progress



- 2.1 In this part of the report, we look at the data available on waste generated in Wales, including both municipal and non-municipal waste data. We consider whether the Welsh Government has sufficient data about the waste generated to provide an appropriate information base for the development and monitoring of waste prevention policies. We recognise that cost has been a factor in the frequency with which some of this data is collected.

The Welsh Government has good data on municipal waste but the data it has on most other wastes is limited

The Welsh Government has some good data on the amount, types and destination of municipal wastes


- 2.2 The Welsh Government gets both annual and quarterly data on municipal waste management through a system called WasteDataFlow³⁹. WasteDataFlow is a statutory reporting system which is a well-established source of evidence for municipal waste and recycling activity in the UK. The UK Department for the Environment, Food and Rural Affairs, Welsh Government and other UK jurisdictions jointly own WasteDataFlow. Every three months, councils put their data directly into WasteDataFlow, and Natural Resources Wales (NRW) undertake a range of validation checks on the data for Wales.
- 2.3 While there are some recognised limitations in the system, the information captured through WasteDataFlow underpins publication of official waste data for Wales, quarterly and/or annually and at a Wales-wide and local authority/regional level. **Figure 6** illustrates the range of data published by StatsWales on municipal waste management.

39 Further information is available on the WasteDataFlow website at www.wastedataflow.org

Figure 6: summary of the data readily available on municipal waste in Wales through WasteDataFlow

Municipal waste data available includes:

- Total waste generated by source
- Management of waste by different methods
- Waste collected for reuse/recycling/composting by material (65 categories) and source
- Reuse/recycling/composting rates
- Residual household waste produced per person
- Residual household waste produced per dwelling



Source: StatsWales based on WasteDataFlow

2.4 In addition to the data available via WasteDataFlow, the Welsh Government has financial data on waste management through the Waste Improvement Programme⁴⁰. The Welsh Government funds the Welsh Local Government Association to run the Waste Improvement Programme, which aims to support more consistent reporting of council spending on waste management. The WasteDataFlow and the waste finance systems under the Waste Improvement Programme are well-established mechanisms that provide detailed and up to date data on municipal waste management. The Welsh Government has also commissioned research to investigate specific data issues on municipal waste.

The Welsh Government does not have up to date data on the amount of commercial, industrial, construction and demolition waste arising, although some further data collection is planned

2.5 The commercial, industrial, construction and demolition sectors account for much of the waste produced in Wales, around 80%. The Welsh Government obtains data on these wastes through periodic surveys (Box 4). The most up-to-date data on these wastes is from a survey undertaken in 2012. Paragraphs 2.18 to 2.20 and Figure 10 set out some of the main findings of the 2012 surveys.

40 The Welsh Local Government Association produces an annual Waste Finances Report.

Box 4: surveys to estimate the amounts of non-municipal waste generated in Wales

The Welsh Government obtains non-municipal waste data through its periodic surveys of the commercial and industrial waste, and construction and demolition wastes produced by private companies. These surveys obtain information on the amount of waste that a sample of companies generate during a set period. This is carried out every five or six years.

Since 2002, the European Union has required member states to provide data every two years on waste generation, management, and on waste infrastructure. This data is provided for Wales by using a variety of data sources, including the survey data for industrial, commercial, construction and demolition waste.

Where no new survey data is available in a given reporting year, the waste generated in individual sectors is based on previous results and other trends. There is no specific requirement to undertake waste surveys at set intervals.



- 2.6 Carrying out these waste surveys on a scale that ensures they provide sufficiently reliable and useful data is expensive. The most recent 2012 survey round cost around £345,000. The Welsh Government has asked NRW to design and commission the next survey for industrial and commercial waste. NRW has appointed a contractor and is currently planning the survey work. Plans for a further survey of construction and demolition waste are still to be confirmed.
- 2.7 In 2011, the Scottish Environment Protection Agency (SEPA) published a Waste Data Strategy for Scotland with the aim of improving understanding of the waste produced and managed in Scotland. The strategy aims to provide an information base to use in delivering the Scottish waste strategy. The Waste Data Strategy for Scotland highlighted the need to improve the quality and details of commercial and industrial waste arising data by economic sector. Following the publication of the Waste Data Strategy for Scotland, SEPA now obtains non-municipal data through a variety of sources. SEPA's website contains summary data on the types and quantities of waste generated and managed across Scotland. There is a variety of data on commercial, industrial, construction and demolition waste, as well as data on municipal waste. In 2017, SEPA, in partnership with Zero Waste Scotland and the Scottish Government published an updated strategy⁴¹.

41 Scottish Environment Protection Agency, Zero Waste Scotland and Scottish Government, **A strategy for improving waste data in Scotland**, October 2017.

- 2.8 The UK government has not surveyed commercial and industrial wastes arising in England since 2009. An alternative methodology⁴² based on commissioned research with additional refinement is currently used to estimate the amount of this waste generated and to meet EU reporting requirements that the UK government considers makes best use of existing available data.
- 2.9 Under the duty of care for waste provisions of the Environmental Protection Act 1990 the movement of waste in the UK must be recorded in a transfer note. These transfer notes include data on the weight and the nature of waste, and must be used by anyone who produces, imports, keeps, stores, transports, treats or disposes of waste and so that they take all reasonable steps to ensure that waste is managed properly⁴³. With financial support from the European Commission, the Environment Agency in partnership with organisations including the Welsh Government developed an electronic documentation system, known as 'e-doc'. Launched across the UK in January 2014, it has demonstrated the potential value of electronic systems to record waste transfer, although the organisations involved have also recognised its current limitations and significant gaps in coverage.
- 2.10 The Welsh Government is a partner in initial discovery work being undertaken under the GovTech Catalyst challenge⁴⁴ to assess the feasibility of developing a new digital solution to track waste. This would have potential advantages including the recording of more accurate waste data and enabling better waste regulation. This 'Waste Tracking' project will look at options to track all waste, including local authority municipal waste data that is currently recorded through WasteDataFlow.

42 Department for Environment Food and Rural Affairs, **Commercial and Industrial Waste Arisings Methodology Revisions for England**, February 2018.

43 These transfer note arrangements do not cover hazardous waste.

44 The GovTech Catalyst is a UK Government Digital Service initiative, run in partnership with Innovate UK. It makes £20 million of research and development funding available for public bodies to bid for across three years.

The data that is available on the amount of waste produced indicates mixed progress to deliver the Welsh Government's ambitious waste prevention targets

The Welsh Government has set ambitious targets for waste prevention, but progress is dependent on a range of factors making it difficult to assign clear lines of accountability

2.11 In **Towards Zero Waste**, the Welsh Government stated that there would need to be an annual reduction of 1.5% in overall waste arising to 2050 from a 2007 baseline. The Welsh Government's 2015 Progress Report states that the total amount of waste arising in Wales reduced from approximately 14.5 million tonnes in 2007 to 8.4 million tonnes in 2012 (a 42% reduction). However, the report acknowledged that there had been no progress over the same period in respect of the waste prevention targets for industrial and commercial waste. The Welsh Government's 2017 summary review of the progress of the sector plans and programme actions⁴⁵ states, 'We have made good progress against the targets set in Towards Zero Waste. This includes reducing waste arisings'. It did not however consider the relative performance across different types of waste.

2.12 The Welsh Government describes the targets that it has set for waste reduction as 'aspirational', as they are not statutory. As we noted in [paragraph 1.8](#), progress with waste prevention depends on a wide range of factors. Consequently, it is not straightforward to assign clear lines of accountability for progress towards these targets, even though the use of legislation and financial incentives can help to reinforce expectations ([paragraphs 1.10 to 1.29](#)).

The amount of household waste being generated has reduced in line with the Welsh Government's target since 2006-07 but with some fluctuation in recent years

2.13 The Welsh Government's target for household waste is for a reduction of 1.2 per cent every year to 2050, calculated from a 2006-07 baseline. Between 2006-07 and 2013-14, the amount of household waste that councils collected decreased from 1.57 million to 1.35 million tonnes, equivalent to around 2% a year⁴⁶. There was a further reduction in 2014-15 but the figures have since fluctuated ([Figure 7](#)). Non-household municipal waste increased between 2013-14 and 2015-16 and has since fallen back slightly but was still at a higher level than in 2013-14.

45 Welsh Government, **Towards Zero Waste Sector Plan and Waste Prevention Programme Actions: Summary Report June 2010 – March 2016**, July 2017.

46 Welsh Government, **Towards Zero Waste 2010-2050 Progress Report**, July 2015.

2.14 Despite the recent fluctuations in the amount of household waste generated, performance on average since 2006-07 still meets the Welsh Government’s target of a 1.2% reduction per year. Over the same period, the population of Wales has continued to grow. Since 2011-12, there has also been some growth in household expenditure in Wales, although the headline figures include expenditure on goods and services that would not necessarily generate household waste.

Figure 7: municipal waste – shown as household and non-household waste – generated in Wales from 2013-14 to 2017-18 (thousands of tonnes and % change)

	Household waste	Non-household waste	All municipal waste
2013-14	1,349	208	1,557
2014-15	1,324	219	1,543
2015-16	1,366	226	1,592
2016-17	1,365	225	1,590
2017-18	1,330	220	1,550
% change between 2013-14 and 2017-18	-1.4%	+5.8%	-0.4%

Note: Between 2006-07 and 2013-14, the amount of household waste that councils collected decreased from 1.57 million tonnes.

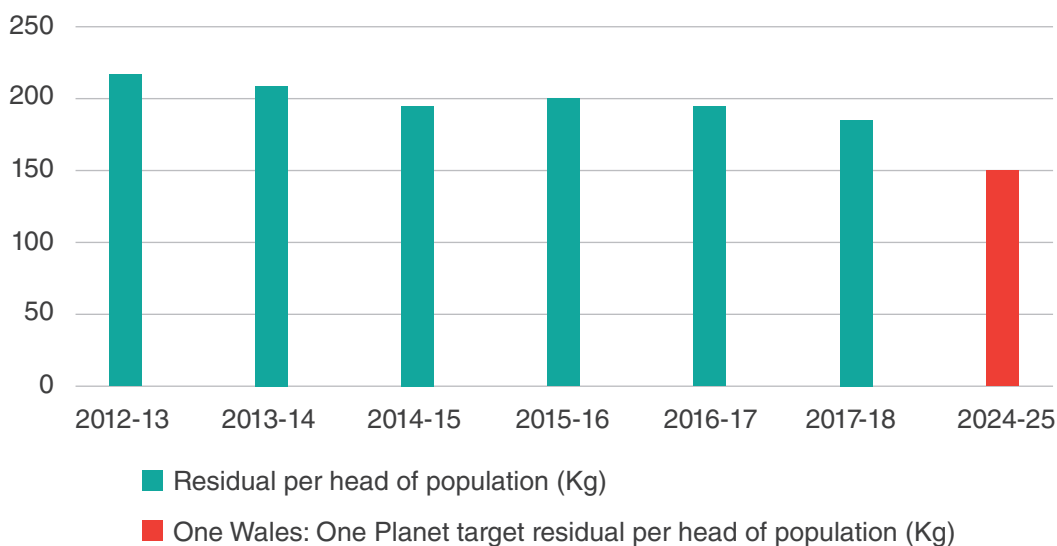
Source: StatsWales based on WasteDataFlow

2.15 Figure 8 shows an analysis of the amount of residual household waste, generated per resident in each year. In **One Wales: One Planet**⁴⁷, the Welsh Government set a target to reduce the amount of residual household waste generated per inhabitant to 150kg per year by 2024-25. Following a reducing trend to 2014-15, the amount of residual household waste generated per inhabitant increased slightly before falling again to 184 kg in 2017-18.

47 Welsh Government, **One Wales: One Planet**, May 2009.

2.16 Our work on the procurement of residual and food waste treatment capacity⁴⁸ has noted that projections used as the basis of contracts for three major residual waste projects assume that councils will still need to treat significant volumes of residual waste beyond 2040. Those projections do not align well with the Welsh Government’s overall aspiration of zero residual waste by 2050.

Figure 8: residual household waste per person (kilograms) 2012-13 to 2017-18, and the target in One Wales: One Planet for 2024-25



Note: Residual waste is waste that remains after recycling or composting material has been removed from the waste stream.

Source: StatsWales, **Local Authority Residual Waste, 2012-13 onwards**, accessed December 2018

48 Auditor General for Wales, **Procuring Residual and Food Waste Treatment Capacity**, October 2018.

2.17 **Figure 9** shows the overall amounts of household waste generated across different parts of the UK from 2013 to 2017 and for calendar year periods. This data suggests that waste prevention policies across the UK have had little real effect to reduce the generation of household waste in recent years, although these policies might have offset further growth. Based on this analysis, the rate of increase in household waste generation was already lowest in Wales, before a reduction between 2016 and 2017 took Wales back to marginally below the level reported for 2013.

Figure 9: waste from households in the UK, 2013 to 2017 (thousands of tonnes and % change)

	England	Northern Ireland	Scotland	Wales
2013	21,564	781	2,310	1,274
2014	22,355	806	2,348	1,285
2015	22,225	818	2,354	1,278
2016	22,770	845	2,378	1,307
2017	22,437	843	2,345	1,271
% change between 2013 to 2017	+4.0%	+7.9%	+1.5%	-0.0%

Note: This comparative data is for calendar year periods, whereas the data for Wales in Figure 7 is for financial years. There are some other adjustments to the data for comparison. There are inevitable differences in the amounts of waste generated due to relative population sizes.

Source: Department for Environment, Food and Rural Affairs and Government Statistical Service, **UK Statistics on Waste**, February 2019

When last reported in 2012, there had been no progress to reduce the amount of commercial and industrial waste, and the economic downturn played a significant part in the large reduction in construction and demolition waste

2.18 For 2012, NRW undertook a survey for the Welsh Government⁴⁹ that indicates the amount of industrial and commercial waste arising in Wales in 2012. This survey found that the amount of industrial waste arising in 2012 was greater than in 2007, and the amount of commercial waste was only slightly lower than in 2007. As a result, the target levels set for 2011-12 in the Towards Zero Waste strategy had not been met (Figure 10)⁵⁰. However, in publishing the results of the 2012 survey, NRW noted that both surveys have a large margin of error, so differences will sometimes be due to sampling error rather than a genuine change in waste generation.

Figure 10: the estimated weight of commercial and industrial waste generated in Wales in 2007 and 2012¹ (million tonnes)



Notes:

1. Limitations of the data used in the surveys, caused for example by sample error, mean that the true values for 2012 may differ in some cases by up to 11.7%. There is no data to show if and how rates changed between survey years. Figures are rounded.
2. The Welsh Government has noted that there are indications that coal fired power stations in Wales were operating for a longer period in 2012 than 2007, therefore generating more waste ash and that there was a reduction in the amount of industrial waste estimated when excluding the energy and supply sector.

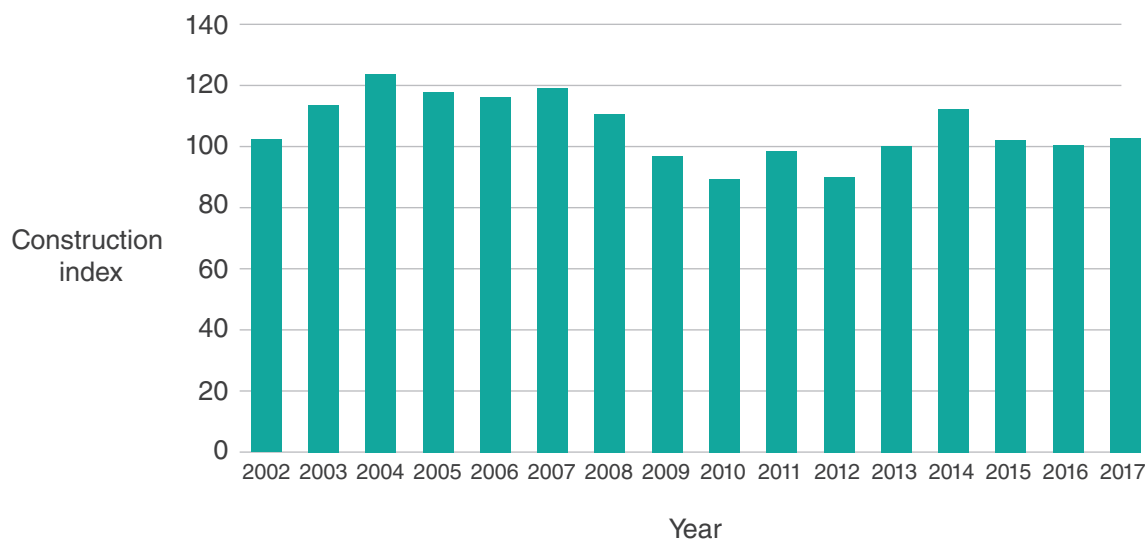
Source: Welsh Government funded sector surveys for industrial and commercial wastes and the Towards Zero Waste strategy and 2015 Progress Report

49 Natural Resources Wales, **Survey of Industrial and Commercial Waste generated in Wales 2012**, (undated document).

50 Analysis commissioned by the Welsh Government has identified previously that three industrial sites were producing half of the industrial waste from permitted sites in Wales: Oakdene and Hollins Research and Consulting – **Waste Reduction Study Wales Regulated Industries- Evidence Report**, December 2014.

- 2.19 For construction and demolition waste, Towards Zero Waste set a baseline of 5.41 million tonnes for 2006-07 and targeted a reduction to 5.03 million tonnes for 2011-12. We queried this with the Welsh Government because its 2015 Progress Report cites a baseline figure of 9.42 million tonnes from 2005 survey results for construction and demolition waste. We understand that the 2005 figure in the Progress Report drew on an earlier restatement of the survey results to make the figure comparable with the methodology for the 2012 survey. The baseline used in Towards Zero Waste applied a different adjustment by removing just under 7 million tonnes of waste that were reported to have been re-used on-site, for example soil and aggregate. The Welsh Government has indicated that it will resolve this discrepancy as part of its review of Towards Zero Waste. The Progress Report drew on the 2012 survey results to show a reduction to 3.4 million tonnes in 2012, well in excess of the rate of reduction required to meet the Welsh Government's target.
- 2.20 The Index of Construction for Wales ([Figure 11](#)) gives a little more information on the effect of the recession on the construction sector. The Index shows that the economic output from construction fell between 2007 and 2010, before the first signs of recovery. Economic output fell by 24% in the period 2007 to 2012. By comparison, the amount of construction and demolition waste arising reduced by around 64%. The Welsh Government's 2015 Progress Report acknowledges that the economic downturn had a significant effect on the construction sector from 2008, in reducing building activity and the amount of waste generated. In addition, there were no major infrastructure projects in Wales accounting for very large quantities of waste in 2012 when compared with 2005. As in the case of the surveys for commercial and industrial waste, the margins of error in the construction and demolition surveys still need to be borne in mind when making comparisons.

Figure 11: Index of Construction for Wales showing the short-term movements in the economic output of the construction industry from 2002 to 2017



Note: These figures take 2016 as the base year (100 on the index) with previous and subsequent years figures then compared as a percentage of the output recorded for 2016.

Source: Welsh Government (StatsWales website), **Index of Construction (2016=100) by year and area**, as accessed in March 2019

The Welsh Government needs to do more to ‘decouple’ waste generation from economic activity

2.21 The UK government had anticipated⁵¹ a return to the UK producing more waste from 2011 as the economic downturn eased. Separating the relationship between economic activity and waste generation so that fewer resources are used to produce less waste per unit of economic activity is termed ‘decoupling’. Decoupling is essential for an effective waste prevention strategy, and this is a key objective of the Waste Prevention Programme for Wales.

51 Department for Environment, Food and Rural Affairs, **The Economics of Waste and Waste Policy. Appendix A: Data, projections and 2050**, June 2011.

- 2.22 Reporting in 2012⁵², the Waste and Resources Action Programme concluded that there was ‘strong evidence’ at UK level that decoupling had begun for household waste, but they could not say if decoupling had begun for commercial and industrial, or for construction and demolition wastes. The Welsh Government’s 2015 Progress Report acknowledges the ‘need to break the link between waste generation and economic growth’. Without updated data for commercial, industrial and construction and demolition waste, it is difficult to assess whether this link has been broken to any meaningful extent as the economic picture has improved since 2012.
- 2.23 The Welsh Government’s evaluation of the Wales Waste Plan⁵³ acknowledges the lack of data on non-municipal wastes and is uncertain about performance. Based on modelling, the evaluation estimated a 1.1% increase in industrial waste between 2009-10 and 2014-15 and a 42.6% reduction in construction and demolition waste. Taken together with household waste, the evaluation estimated a 23.3% reduction overall during this period. These estimates provide an indicator of progress but are no substitute for up-to-date and reliable data.

52 Waste and Resources Action Programme, **Decoupling of Waste and Economic Indicators**, October 2012.

53 Welsh Government, **Wales Waste Plan Review – Work Stream 1 WWP Evaluation – Delivering the Objectives and Realising the Benefits. Table 5**, June 2017.

Appendices



Appendix 1

Audit methods

We sourced much of the data that we used to inform this report from the Welsh Government, and particularly from their strategies and sector plans, progress reviews and evaluations. We have focussed on developments since the publication of the Waste Prevention Programme in December 2013, although we have taken account of previous data where this demonstrates broader trends.

We also obtained from the Welsh Government relevant ministerial statements, waste prevention related consultations, progress against performance indicators, survey results, information about regulated industries, commentary on Welsh legislation including the transposition of EU waste legislation, and information on grant funding. In addition, we obtained data from verified sources such as WasteDataFlow, StatsWales bulletins issued by the Welsh Government, and from the National Strategic Indicator set.

Our other sources of data for this work included the European Union, the UK Government's Department of Environment, Food and Rural Affairs, and the Scottish Government. We also obtained documented data from the Welsh Local Government Association, the Waste and Resources Action Programme, and Zero Waste Scotland.

In addition to the Welsh Government, we held interviews with the following key stakeholders:

- waste management representatives from Caerphilly, Monmouthshire and Rhondda Cynon Taf councils;
- the County Surveyors Society Waste Sub-Group – the representative body for council waste managers in Wales;
- Natural Resources Wales;
- the Chartered Institution of Wastes Management;
- the Welsh Local Government Association; and
- the Waste and Resources Action Programme.

Appendix 2

Key elements of the Welsh Government's Waste Prevention Programme and the waste sector plans

The Welsh Government published its Waste Prevention Programme in December 2013. The Programme supports Towards Zero Waste by describing the outcomes, policies, targets and outline work programme to address waste prevention from businesses and households. It also delivers the EU requirement for Member States to develop waste prevention programmes. Although there is no Programme Board or external scrutiny of progress, the development of the Programme involved consultation with the public, with business and with waste experts through a steering group.

The Welsh Government's objectives for the Programme are that households and businesses will be able to reduce waste, while at the same time saving money, protecting the environment and contributing towards a sustainable Wales. For business, the Programme promises improved productivity through sustainable resource use, innovation to gain competitive advantage, and protection against rising commodity prices. A key objective of the Programme is to break the link between waste generation and economic growth.

The Welsh Government says that the Programme will help it:

- Tackle poverty by helping to reduce waste and promote reuse, refurbishment and remanufacture to provide low cost, high quality goods. In addition, repair and reuse should be the natural first choice for faulty or unwanted goods, furniture and clothing.
- Increase the amount of surplus food that is made available for people to eat, such as by continuing to fund national and local Love Food Hate Waste initiatives.
- Deliver green growth and high-quality sustainable jobs through sustainable resource management and create training opportunities for unemployed people. Through eco-innovation and eco-design to encourage businesses to develop sustainable products and services, and to use material resources efficiently.

The Welsh Government has identified the construction and demolition sector and business sectors as a priority for the Programme, because they produce large amounts of waste with a high environmental impact. The public sector is also expected to lead by example through its own operations and procurement practices.



Household waste – The Programme considers the ‘demand side’ actions of purchase choice, use in the household, and disposal and collection. The Programme includes consumer engagement, a review of household reward schemes and optimising service provision for householders. The Welsh Government has set a target to reduce the amount of household waste arising by 1.2% every year, from a 2006-07 baseline.



Industrial and Commercial Waste – The Programme works with large retailers and their supply chains to promote eco-innovation in the manufacturing sector. Priority business sectors are food manufacturing, accommodation and food services, industry regulated under a permit, small and medium sized enterprises, office-based services, and small retailers and wholesalers. Commercial waste is waste arising from any premises which are used wholly or mainly for trade, business, sport recreation or entertainment, excluding household and industrial waste. Industrial waste is waste from any factory and from any premises occupied by an industry but excludes waste from mines and quarries. The Welsh Government has set a target to reduce the amount of commercial waste by 1.2% a year, and industrial waste by 1.4% a year, from a 2006-07 baseline.



Construction and Demolition Waste – Construction and demolition wastes consists of all waste originating from construction, renovation and demolition activities, such as rubble, bricks and tiles. The Programme has prioritised the following wastes: wood, plastic, insulation and gypsum, hazardous waste (primarily contaminated soil), metals, concrete, bricks, tiles and ceramics, and bituminous substances. Initiatives focus on eco-design and designing out waste, education and guidance, value engineering, and sustainable construction products. There is support for small and medium sized enterprises to develop infrastructure to support the reuse of surplus materials for community benefit and greening procurement. The Welsh Government has set a target to reduce the amount of construction and demolition waste by 1.4% a year, from a 2006-07 baseline.

In addition, the Programme will prioritise reuse and repair across all sectors through better communications, encouraging separate collections of waste electrical and electronic equipment at designated collection facilities, green procurement, also supporting the Reuse Network with shared warehousing, communications and by establishing quality assured standards for reuse and repair products.

The Programme sits alongside individual sector plans (Figure 12) and a range of other policy and strategic documents that together make up the Waste Management Plan for Wales (summary paragraph 6).

Figure 12: the Welsh Government's waste 'sector plans'

Municipal waste sector plan	Considers the waste that councils collect and includes household waste and recycling	Published in March 2011
Collection, infrastructure and markets sector plan	Considers what happens to the waste once it has been put out for collection and how Wales deals with its waste without sending it to landfill	Published in July 2012
Food, manufacture, service and retail sector plan	Considers food waste and packaging in Wales and how to reduce it within the food and manufacturing industry	Published in September 2014
Construction and demolition sector plan	Considers the waste produced in the building industry and how to manage this	Published in November 2012
Commercial and industrial sector plan	Considers wastes from business, retail and manufacturing and how to reduce and manage this	Published in December 2012
Public sector waste and resource efficiency plan	Will consider waste produced by the public sector and how to reduce and manage it	Anticipated publishing date during 2019 The Welsh Government intends to subsume this plan into its 'Route Map for a More Resource Efficient Wales'

Source: Welsh Government

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