

Meeting: Green Sub Committee

Date: 9th January 2024

Title: Waste Strategy Review: Communications and Marketing; Energy from Waste Overview

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Service: Environmental Sustainability

Directorate: Environment

Wards affected: All

1. Purpose of Report

To provide members of the Green Sub Committee with information on the Authority's use of Energy from Waste as a means of disposing of residual waste and outline the engagement with the Sub Committee around the refresh of the Authority's Waste Strategy.

The Authority has a statutory duty to collect and dispose of household waste arising within the borough. In October 2013, Cabinet adopted a Waste Strategy 2013-2030 with the overarching strategic aim to reduce waste and use it as a resource. Since then, the vast majority of household waste has been diverted away from landfill and around 90% of waste material is either recycled or converted into electricity in an Energy from Waste (EfW) plant. Following the introduction of alternate weekly household collections in August 2018, kerbside recycling rates increased, but in common with local authorities across the country, the recycling rate has stagnated.

At this Sub Committee on 7th November 2023, a presentation set out the current Waste Strategy to assist the committee in helping shape a refresh of that Strategy in light of developing national policy and local needs. Members were interested in providing input on the ongoing development of communications and marketing and circular economy aspects of the Strategy, including reuse. Members also requested further detail on EfW.

This report provides that information on EfW. Appended to this report are examples of the current approach to waste awareness communications to generate ideas that could improve engagement to help residents waste less, and reuse and recycle more.

2. Recommendations

The Sub Committee is invited to note the detail provided on the use of Energy from Waste for the disposal of most residual waste. The Sub Committee is requested to provide input on the future communications and engagement that complement and drive the revision of the Authority's Waste Strategy and promotion of circular economy as appropriate, including to support the introduction of food waste collections for all households.

3. Information

The Authority's Waste Strategy 2013-2030

The Authority has in place its [*Waste Management Strategy 2013-2030: Changing our thinking away from rubbish and towards a resource*](#), adopted by Cabinet in October 2013. The strategy includes the following strategic aims:

1. Work with our residents to reduce rubbish produced by each household;
2. Maximise the amount of rubbish that is reused, recycled or composted;
3. Put technology in place to recover value from our rubbish and minimise the amount we send to landfill; and
4. Reduce our carbon footprint through better management of our waste.

Diverting waste to EfW instead of landfill has been key in achieving the third strategic objective above (see "Energy from Waste" below).

There is an action plan within the strategy, which runs to 2023, and a commitment to review it in 2019. Accordingly in November 2019, the Authority set out its [10-Year Plan for Waste](#), which outlined the actions needed to address the challenges posed by new local and national drivers.

The ambitions and outcomes of the Waste Strategy and 10-Year Plan must remain appropriate, and, in line with government guidance, the Authority should review these at least every five years. In July 2019 full Council also declared a Climate Emergency, and subsequently, the refreshed Our North Tyneside Council Plan 2021-25, approved by Council in September 2021, included the following ambitions:

“We will keep increasing the amount of waste that can be recycled and introduce food waste collections and deposit return schemes.”

“We will publish an action plan of the steps we will take and the national investment we will seek to make North Tyneside Carbon Net-Zero by 2030.”

The Authority’s latest [Carbon Net-Zero 2030 Action Plan](#) agreed by Cabinet in September 2023 sets out the actions designed to achieve these targets. It highlights the role of our Waste Strategy in changing how we produce, purchase, consume and dispose of waste in order to reach net-zero across our borough.

National Policy Context

The Government published its Resources and Waste Strategy in December 2018, with a focus on new legislation that would promote a circular economy and provide food waste recycling for households across the country. Following consultation on that Strategy, in October 2023 the Government outlined ‘Simpler Recycling’, including requirements to collect glass, paper, cardboard, metals, cartons and some plastics from the kerbside along with offering a separate weekly food waste collection to all households by March 2026. Plastic films will need to be collected by March 2027. These requirements are enshrined within the Environment Act 2021.

Under Extended Producer Responsibility for Packaging, from October 2025 producers will need to meet the full net costs of managing the packaging of their products. The Authority is engaging with other local authorities and Defra, to understand the amounts of those payments and how they will be administered. A Deposit Return Scheme, also introduced in October 2025, will also place a redeemable deposit on single-use plastic and metal drinks containers. Details of how this would be implemented and the potential impact on waste collection services is still being developed.

The Government remains committed to a target of recycling 65% of all municipal waste by 2035, as originally set out in its 2018 Strategy.

The principles underpinning the current Waste Strategy remain a solid foundation for the refresh of the Strategy and Plan, and a refreshed Strategy and accompanying actions through to 2030 are now required as part of the Authority's commitment and to reflect national legislative changes.

Energy from Waste (EfW)

EfW is a process that recovers energy to generate power in the form of electricity, heat or transport fuels from the controlled incineration of residual waste – that is, waste that remains after recycling, or cannot be reclaimed. The EfW facility used by the Authority is based in Hartlepool and generates electricity, which is fed into the National Grid. An EfW plant contributes towards carbon emissions reductions as it diverts materials that would otherwise go to landfill and degrade releasing carbon dioxide and methane, instead providing power with a lower carbon intensity than comes from gas fired power plants. Because it makes use of materials that have already been discarded, EfW can help to drive resource efficiency across the UK.

The residual waste used in EfW can comprise any material that is not inert, which includes materials such as paper, cardboard, food waste and plastics. These materials store differing amounts of energy, which is harnessed by the EfW process of combustion. In an EfW plant, residual materials are incinerated in a furnace at up to 1,000°C to produce steam, which drives turbines to generate energy as electricity. Byproducts include incinerator bottom ash, which can be recycled, and gases, which are cleaned and neutralised, before being released through a chimney. Ferrous metals extracted can be used for recycling, while the leftover ash is a suitable aggregate replacement in construction materials. A diagram and further detail of this process is provided at Appendix 1.

The waste hierarchy places this energy generation/recovery *below* reducing waste, re-use, and recycling and composting, meaning these other options should be considered first when managing waste. In addition, the incineration of waste still produces carbon emissions and some materials generate more emissions than others per tonne and when compared to emissions produced in recycling those materials. For example, combustion of one tonne of dense plastic generates 1,691kgCO_{2e} per tonne, compared to 205kgCO_{2e} produced from recycling that plastic into a lower-grade material. Combustion of paper and board effectively results in negative emissions of -218kgCO_{2e} per tonne, due to its organic nature, whereas leaving this material in landfill produces 1,042kgCO_{2e}.

These differences highlight the importance of avoiding and reducing the use of materials such as plastics and ensuring recyclable materials are collected and recycled appropriately.

Typically, each year the Authority sends up to 50,000 tonnes of residual waste to EfW. Up to around 40,000 tonnes of material collected is recycled and composted (including material collected at the HWRC) and around 10,000 tonnes is typically sent to landfill. From 2026, the Authority expects to collect up to around 8,000 tonnes of food waste per year, which is waste that would otherwise have been placed in the residual waste bin. It is currently several times more expensive for the Authority to dispose of recyclable waste via EfW than it is to recycle it appropriately, whether this is dry recycling, compostable garden waste or food waste that is processed using anaerobic digestion. The latest recycling/composting rate for household waste in North Tyneside is 35%.

The Sub Committee's input is therefore welcomed on the communications and engagement work the Authority undertakes to encourage residents to choose more sustainable products, repair and reuse more, and recycle correctly, in order to reduce emissions associated with waste disposal and put the Borough on a pathway to achieving 65% recycling rate by 2035. This includes the substantial engagement around food waste collections that will be essential to ensuring the successful implementation of this new service by March 2026.

Communications and marketing

The Authority currently runs a Waste Awareness Campaign, which incorporates the key recycling message Wash, Squash and Recycle and has been running since 2013. During this period key messages and targeted interventions have changed to help the Authority tackle contamination issues and enable it to meet service demands such as the introduction of alternate weekly collections. This ongoing education campaign recognises positive behaviour change and offers advice and information on how residents can minimise the waste they produce. It is hoped by continuing to educate residents, everyone will recognise that waste is not an Authority problem alone, but reflects personal choices, and that by minimising waste, residents and organisations across the Borough can help tackle climate and air pollution, reducing the materials that are processed by the Authority and the associated environmental and financial costs.

This work is currently delivered by the charity Groundwork through roadshows, events, targeted door-knocking, the promotion of rewards schemes, and a schools campaign including assemblies and other activities.

Alongside this in-person engagement, the Authority runs significant communications and marketing to support the Waste Awareness Campaign. A slide deck appended to this Report provides examples of materials published throughout the year across the Authority's website, through the Our North Tyneside residents magazine, on social media, distributed at events and placed across the Borough on road signage, recycling wagons and recycling points. This includes the A to Z of rubbish and interactive recycling map.

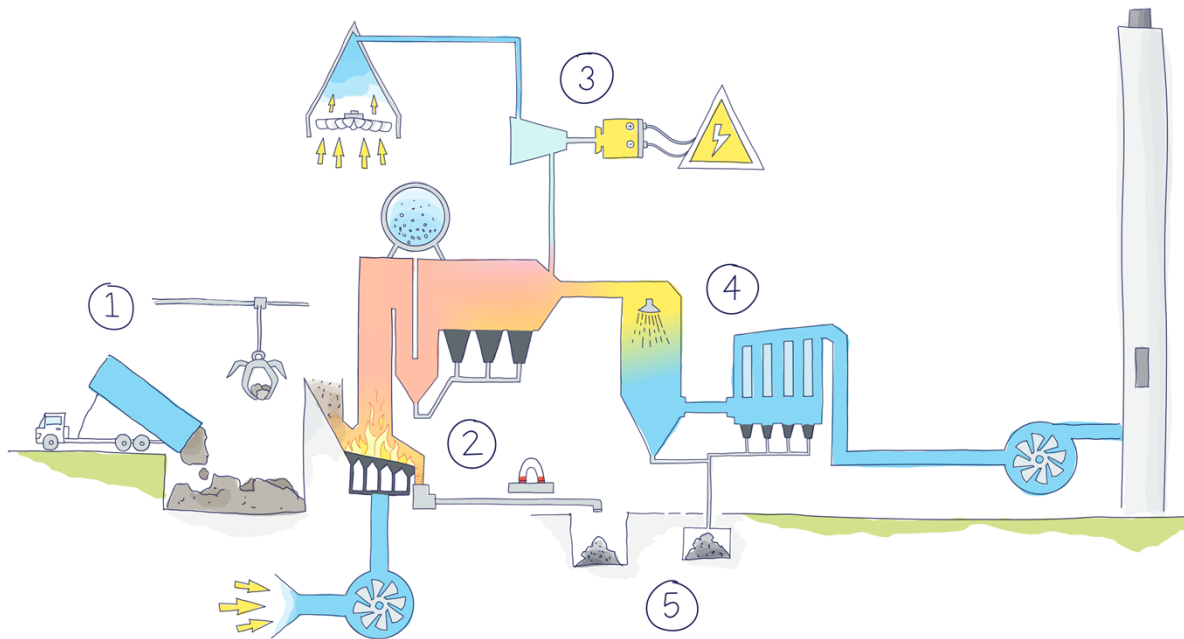
The Sub Committee is invited to provide feedback on the current communications and marketing, and propose and discuss recommendations to improve the current outreach to support the Authority's efforts to reduce residual waste, improve recycling rates, involve residents in upcoming service changes and ensure these materials are relevant and accessible.

4. Appendices

Appendix 1 Energy-from-Waste facility and process

Appendix 2 Waste Awareness Campaign materials examples

Appendix 1: Energy-from-Waste facility and process



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Source: <https://www.suez.co.uk/en-gb/our-offering/communities-and-individuals/education-tools-and-resources/what-happens-to-waste/general-waste/energy-from-waste>

Collection: Waste collection vehicles enter the reception hall of our energy-from-waste facility and discharge their waste into a bunker. A grab crane operator mixes the waste to ensure an even burn in the furnace. Water sprays and induction fans in the reception hall reduce the levels of dust and odours.

Incineration: The crane loads the mixed waste into a feed hopper, and it travels down a chute into the furnace. Inside the furnace, a series of grate bars move the waste through the furnace where it dries and burns at temperatures of around 1000°C. Burning the waste creates a hot flue gas – which is used as a source of renewable energy – and incinerator bottom ash, which can be used in construction.

Energy generation: The hot flue gases travel through a boiler, heating water that runs through boiler pipes. This turns into steam that drives a turbine, generating electricity.

Emissions: The gases from the burned waste are cleaned thoroughly. Lime is used to neutralise acidic gases and carbon to remove dioxins and heavy metals. The gas then passes through a fine fabric filter to capture any remaining particles before it is released through a chimney.

Other by-products: The incinerator bottom ash from burnt waste drops into a quench tank and then passes along a conveyor to a storage pit. Magnets above the conveyor extract ferrous metals from the ash for recycling. The ash then goes to an ash recycling plant, so it can be used as an aggregate replacement in construction materials.

Appendix 2: Waste Awareness Campaign materials
See attached Powerpoint presentation