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A net-zero greenhouse gas emissions strategy for the UK recycling and waste sector

Executive Summary

A collage of four images related to recycling and waste management. Top right: A worker in an orange high-visibility jacket and blue hard hat looking at a mobile phone in a recycling facility. Bottom right: A white recycling truck with its rear door open, showing a load of sorted waste. Bottom center: A worker in an orange high-visibility jacket and blue cap standing on a street, gesturing towards a recycling truck. Bottom left: A large pile of sorted recycling materials, including plastic bottles and metal cans.

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Executive summary

From the packaging keeping our food fresh, to the tyres on our cars keeping us on the road, we all rely on a vast range of products and packaging. But many of the things we use and consume every day have limited lives and eventually become waste. Alongside efforts to avoid and reduce waste wherever possible, recycling and treating the remaining waste in a responsible way is crucial for the health of the planet and its ecosystems. However, this important waste management process creates GHG emissions, which contribute to climate change.

The recycling and waste management sector is proud of its emissions reduction record and we have halved the GHG emissions associated with our activities over the past thirty years by dramatically phasing out landfill and increasing recycling. But as the climate emergency grows ever more pressing, managing the UK's waste still accounts for eight per cent of total UK GHG emissions, so reducing our sectoral emissions further is an urgent issue if the UK is to achieve net zero GHG emissions by 2050.

This strategy therefore sets out our collective ambition to not only become a net zero GHG emission sector, but to achieve this by 2040 – a full decade ahead of the UK's legally binding target. Meeting this stretching ambition requires joint action from our sector, government, our supply chain and our customers – working together to protect the environment, deliver investment in new infrastructure, and create green jobs.

We have reduced emissions more than almost every other sector across the economy since 1990 – but we want and need to do more and to achieve net zero as quickly as possible, but will need the support of others to meet this challenging objective. This strategy sets out what we, the wider sector and our stakeholders can do to help achieve net zero emissions for the recycling and waste sector.

Our sector's critical value to the UK

The recycling and waste management sector performs an essential public service and is part of the UK's critical infrastructure. We manage 221 million tonnes of waste produced in the United Kingdom each year, or over three tonnes per person, keeping our streets clean and preventing pollution, while also extracting value from waste materials that would otherwise be lost.

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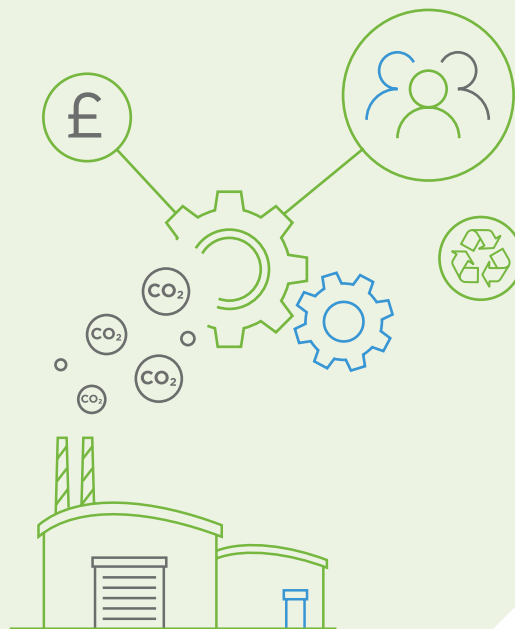
A net zero greenhouse gas emissions strategy for the recycling and waste management sector in the United Kingdom – Executive summary

Everything our sector does is driven by the waste hierarchy. Of course, waste is best avoided in the first place, and we must repair and reuse what we can, before recycling and then recovering energy from anything that cannot be recycled – with landfill disposal the option of last resort. By driving waste up the hierarchy and away from landfill we play a key role in conserving resources and reducing the GHG emissions associated with society's waste. In 2018 alone, our sector's activities resulted in nearly 50 million tonnes of avoided CO₂e emissions across the economy, equivalent to taking 10 million cars off British roads. Sorting and recycling operations alone helped avoid around 45MtCO₂e in 2018.

Our significant transformation to date

Over the past two decades our sector has taken far-reaching steps to reduce emissions – investing billions of pounds in world-class, modern waste management facilities. The results are clear and we calculate that our actions have reduced the industry's GHG emissions by 46% since 1990 – the third largest sectoral emissions reduction over this period, behind heavy industry and the energy sector. We have done this by diverting waste from landfill, increasing recycling, and improving the technologies and processes used in waste management, as well as investing in research and training.

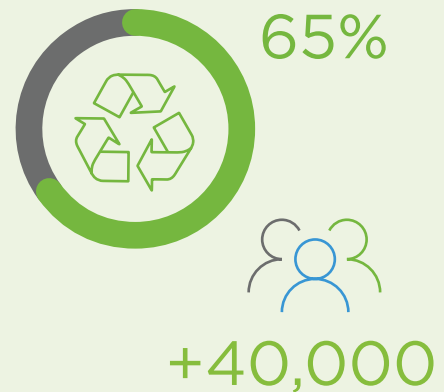
Worth £7.8 billion, our sector also makes a significant contribution to the UK economy and employs 123,000 people, while our investments in innovative solutions for managing waste support new jobs and skills the length and breadth of the UK.



Taking action to deliver impactful change

We know that achieving Net Zero emissions for the sector by 2040 will be challenging and will require everyone involved in the sector to act – including our customers and government at all levels. With the right regulatory and policy framework, we can reduce the impact of society’s waste on the climate and drive positive change across every community in the UK. We have outlined a clear roadmap detailing how we plan to achieve this target, but the key priorities for decarbonising our sector will be:

1 Investing a forecasted £10bn in recycling infrastructure over the next decade to make the recycling process more efficient, reduce associated emissions, meet the government’s 65% municipal recycling target and create 40,000 permanent jobs



2 Decarbonising non-recyclable waste treatment by removing organics from landfill by 2030 and plastics from energy recovery facilities, while working with government to enable carbon capture, utilisation and storage (CCUS) technology to mitigate remaining emissions



3 Transitioning vehicles and fuel use to zero emission sources



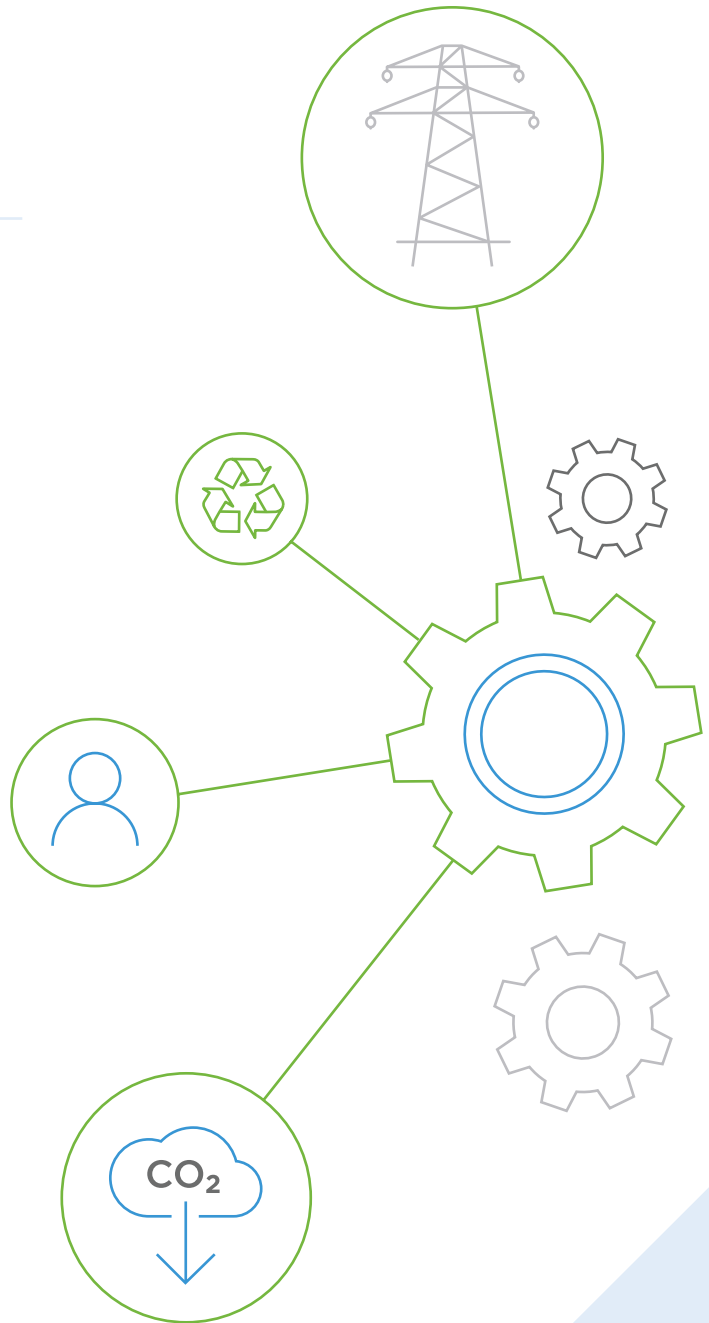
A number of targets and commitments are associated with each of these priorities and are outlined further in this document. We will review these every five years against progress, policy changes and market shifts to ensure they are both achievable and consistently ambitious. We will also review and report performance against this strategy annually via the ESA’s Annual Report.

Working together to reduce emissions for the long-term

To achieve our ambitious decarbonisation plans and help the UK meet its net zero target, we need the government to step up and deliver some of the vital technology and infrastructure required. This involves:

- Delivering a zero-emissions grid to power infrastructure processing the waste that we can recycle.
- Introducing regulatory and policy drivers which enable carbon capture technology for our energy-recovery facilities – helping to reduce emissions from the waste we cannot recycle in the shorter term and, in future, unlocking the potential for negative emissions by removing more carbon dioxide from the atmosphere than we emit.









We have set ourselves a bold and ambitious challenge, but this is a huge opportunity to put the UK on the road to Net Zero. Working alongside our customers and government, we are confident that we can meet this challenge – creating new jobs across all skill levels; investing in new green infrastructure; supporting local supply chains and communities and ultimately helping the UK become a world-leader in the fight against climate change.



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The UK recycling and waste management sector at a glance

- Employs more than 123,000 people (2018)
- Operates from 6,761 permitted facilities (2018)

<p>2,861 facilities (42%)</p>  <p>Transfer Station</p>	<p>376 facilities (6%)</p>  <p>Composting</p>	<p>1,016 facilities (15%)</p>  <p>Material Recovery Facilities</p>	<p>369 facilities (5%)</p>  <p>Landfill</p>
<p>1,731 facilities (26%)</p>  <p>Recycling</p>	<p>109 facilities (2%)</p>  <p>Thermal Treatment</p>	<p>127 facilities (2%)</p>  <p>Anaerobic Digestion</p>	<p>158 facilities (2%)</p>  <p>Physicochemical Treatment</p>

- In 2016, the UK produced around 221 million tonnes of total waste¹ (over 3 tonnes per capita)
- Of which:
 - 62% came from construction, demolition and excavation
 - 18% came from commercial and industrial operations
 - 12% came from households
 - 8% arose from other sources
- In 2018, UK households produced 26.4 million tonnes of waste, of which 11.9 million tonnes was recycled (45%)
- In 2019, UK waste management facilities processing organic and residual waste generated 10,330 GWh of renewable electricity, which accounts for approximately 9% of UK total renewable energy²

1 DEFRA (March 2020) UK statistics on waste - March 2020 update

2 BEIS (July 2020) Digest of UK Energy Statistics 2020 - main chapters and annexes A to D dataset, table 6.4