

Delivering Sustainable Growth

How the Resource and Waste Management Industry Benefits People, the Environment and the Economy

Chairman's Foreword



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The Resource and Waste Management Industry has undergone significant change over the last 20 years. There has been a shift from treating waste as a dirty problem solved only by disposal, to approaching it as a rich opportunity to better manage our resources. This shift in perspective has placed us at the forefront of promoting a more Circular Economy; one in which the value of resources is maximised by keeping them in circulation for as long as possible. The industry has increased the UK's recycling from near zero in the early 1990s to almost 45% today. We recover energy from waste which cannot be economically recycled, supplying the UK with 12% of its renewable electricity. We have also worked to reduce our own emissions by 70% since 1990.

In doing so, our sector contributes to economic growth that is sustainable in both senses of the word: we add value to the economy year on year, whilst also valuing the UK's natural capital. On top of this, the more innovative methods of treating waste in order to turn it back into a resource have created thousands of new green jobs across the country and across all skills levels.

The industry is working hard to fulfill its ambitions of a more Circular Economy that is beneficial both for the environment and for GDP. This report sets out our achievements and ambitions for delivering sustainable growth within our industry and for the whole nation.

However, there are certain barriers to reaching our full potential where Government intervention is crucial, and in many cases, increasingly urgent.



Household waste volumes are once again rising, putting a huge burden on local authority finances. Our industry is also currently experiencing immense challenges with the drop in commodity prices putting pressure on the economic viability of recycling. This unstable outlook has had knock-on implications for investment in waste infrastructure. Combined, these factors are making the likelihood of the UK reaching its target of 50% household recycling by 2020 ever smaller. On top of this, the problem of waste crime is undermining legitimate business and costing the Exchequer hundreds of millions of pounds each year.

We believe that with the right policy climate, not only can immediate threats be averted, but our industry can contribute even more to a thriving workforce, a flourishing environment, and a prosperous economy.

In particular, we would like to see:

1

The development of more resilient recovery markets for waste-derived products

2

The introduction of a new framework for producer responsibility which transfers resource ownership from local authorities to product supply chains

3

More efficient use of waste collection systems and infrastructure

4

Waste crime driven out of the sector

We believe that tackling these areas will unlock much needed investment in our industry, which would help deliver economic growth, thousands of new jobs, and a greener, cleaner Britain.

Peter Gerstrom, ESA Chairman





The Resource and Waste Management Industry: Who Are We?

We help create a Circular Economy...

The UK produces over 200 million tonnes of waste each year.¹ As a nation we discard approximately 40% of our Domestic Material Consumption.² Households alone produced almost 27 million tonnes of waste in 2014.³ The resource and waste management industry transforms this waste back into valuable resources, helping the UK move towards a circular economy. By collecting, sorting and treating the UK's waste, we recover materials to create a more sustainable place to live, mitigate climate change, and help build a resilient economy.

...While contributing to economic growth...

There has been a real shift in approach within the sector from not just dealing with the problem of waste, but treating it as a valuable resource for the economy.

- In 2012, we added £41 of GVA for each tonne of waste treated, and exported £5bn in recovered materials.⁴
- An estimated £447.4m of electricity was generated from waste in 2013.⁵
- Landfill Tax alone contributes over £1bn to the Treasury annually.⁶
- The industry supports 106,000 jobs across the country.⁷
- Together the industry has an annual turnover of over £11bn, with a GVA of almost £5bn.⁸

Based on industry estimates, we believe that a further £10bn investment in the sector would create 50,000 new jobs for the economy and boost GDP by £3bn.⁹

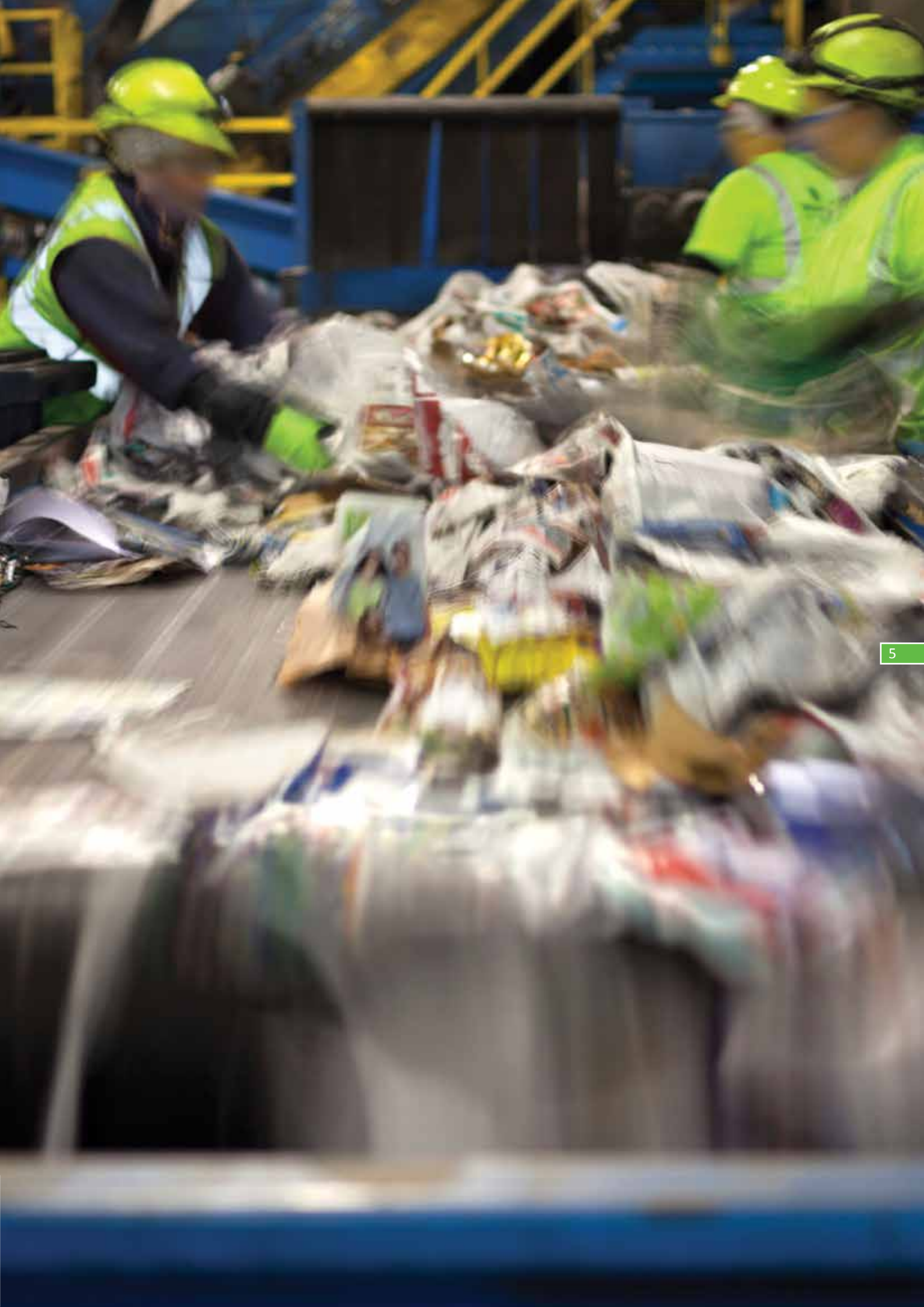
...Across regions, business sizes and skill levels.

Since waste management facilities are located within close proximity to waste generation, those 106,000 jobs are spread across the UK, boosting local economies. The sector is diverse, consisting of both large multinational businesses and hundreds of SMEs. As we have moved away from a disposal approach to waste towards capturing the most value from raw materials, the sector has created more and more high skilled green jobs, for example in recycling and energy recovery.

ESA

The Environmental Services Association (ESA) is the voice of Resource and Waste Management Industry in the UK. Our Members turn waste into valuable resources while protecting the environment. We represent approximately half of the waste sector—including all the major companies—speaking on their behalf in Britain and in the EU. We help raise industry standards and lobby constructively for a policy framework which enables ESA Members to operate profitably and responsibly for the benefit of the environment.







Creating a Better Place to Live: What We Do

Keeping the UK tidy

Our Members offer a variety of tailored services to help local authorities and businesses manage their waste in a cost efficient way, from collections, Household Waste Recycling Centres (HWRCs) and street cleaning to sorting recyclable material and recovering energy from waste which cannot be recycled.

Case Study: Transforming Household Waste Recycling Centres

Viridor is driving household recycling through one of Europe's largest 'waste' partnerships. Together, Greater Manchester Waste Disposal Authority (GMWDA) and Viridor Laing (Greater Manchester) Limited (VLGM) have created a network of 20 HWRCs. The modern and easy to use site layouts have multiple bays for key recyclates including garden waste in peak seasons, and the ability to recycle 23 different material types. Many of the facilities are seeing diversion rates above 80% and the top performer in Bolton (Hurstwood Court) has an impressive diversion rate of 95.3%.

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Creating a Circular Economy

A Circular Economy is an alternative to the traditional take-make-use-dispose approach to resources wherein no materials are wasted but instead returned to the economy as new products or energy. As waste is pushed up the waste hierarchy, it creates greater resource efficiency and security as it reduces the need to extract and import new raw materials. It furthermore lessens the impact on the environment and the climate from energy-intensive methods used to extract virgin materials, and from the traditional method of waste disposal: landfill.

Figure 1: Waste Hierarchy

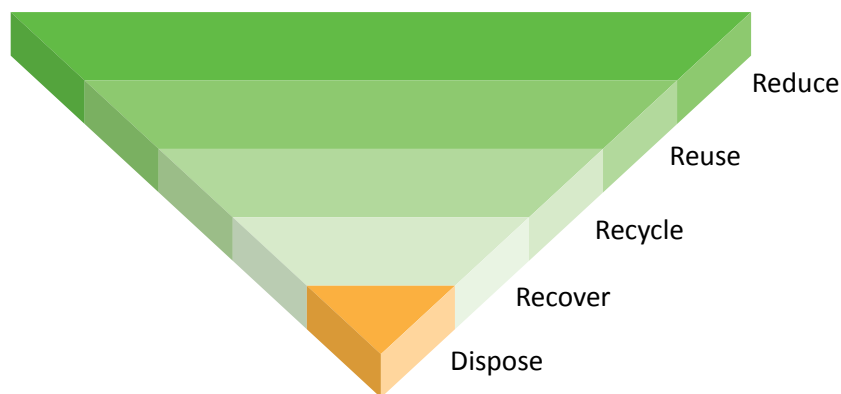
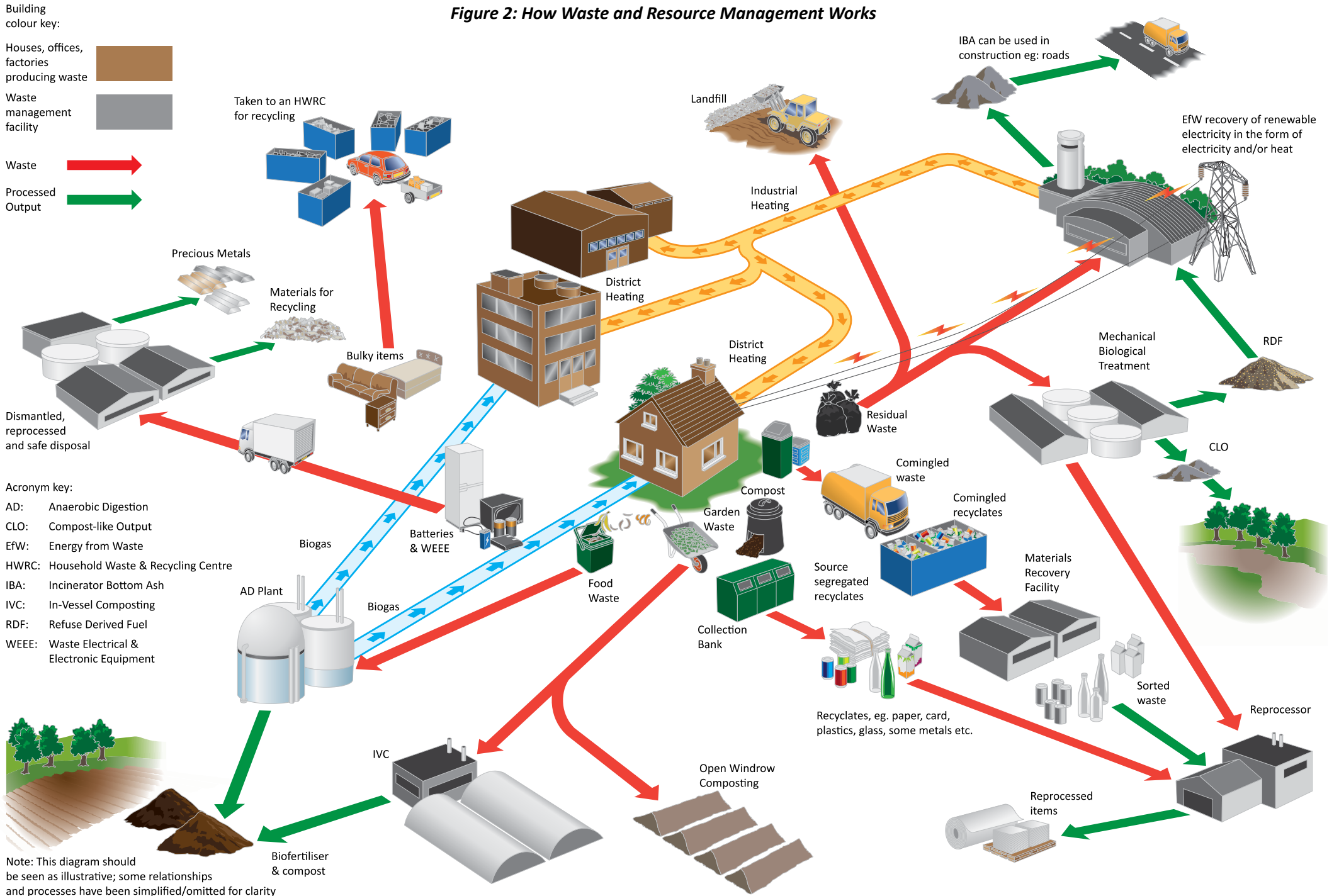


Figure 2: How Waste and Resource Management Works



Note: This diagram should be seen as illustrative; some relationships and processes have been simplified/omitted for clarity

The Resource and Waste Management Industry has a vital part to play in capturing materials at the end of their life and enabling them to be reborn as the same product or something entirely different.

The industry has undergone a complete transformation in the past 25 years as it has moved away from disposing waste towards turning waste into valuable commodities. In 1996, the UK were sending 90% of household waste to landfill.¹⁰ The introduction of the Landfill Tax that year drove a transition in the industry so that by 2005, England's municipal recycling rate was 26%¹¹ and UK landfill had reduced to 72 million tonnes per year.¹² Now the recycling rate is just shy of 45%¹³ and about 34 million tonnes of waste goes to landfill.¹⁴

Figure 3: Waste Management at the Heart of the Circular Economy

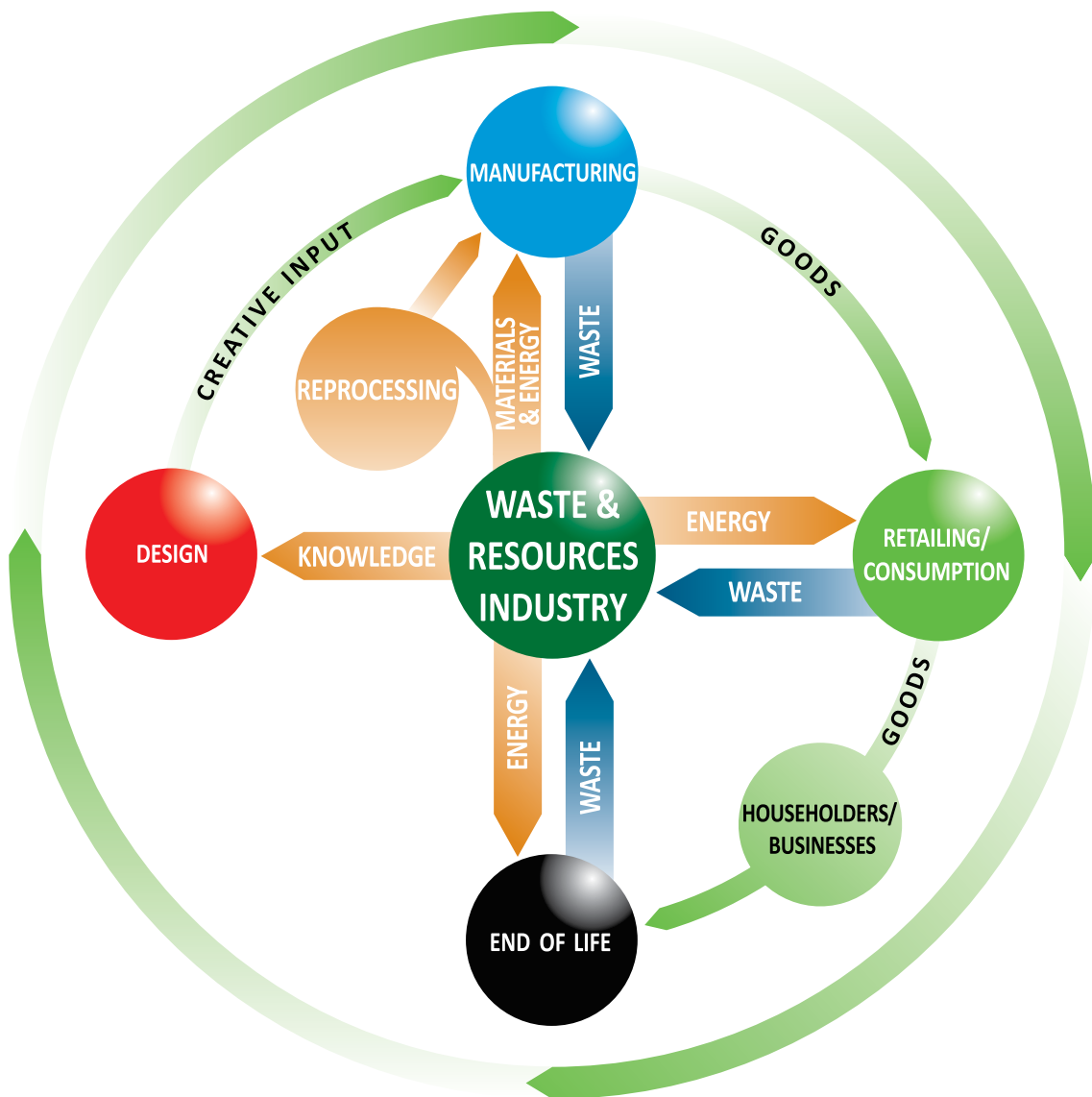
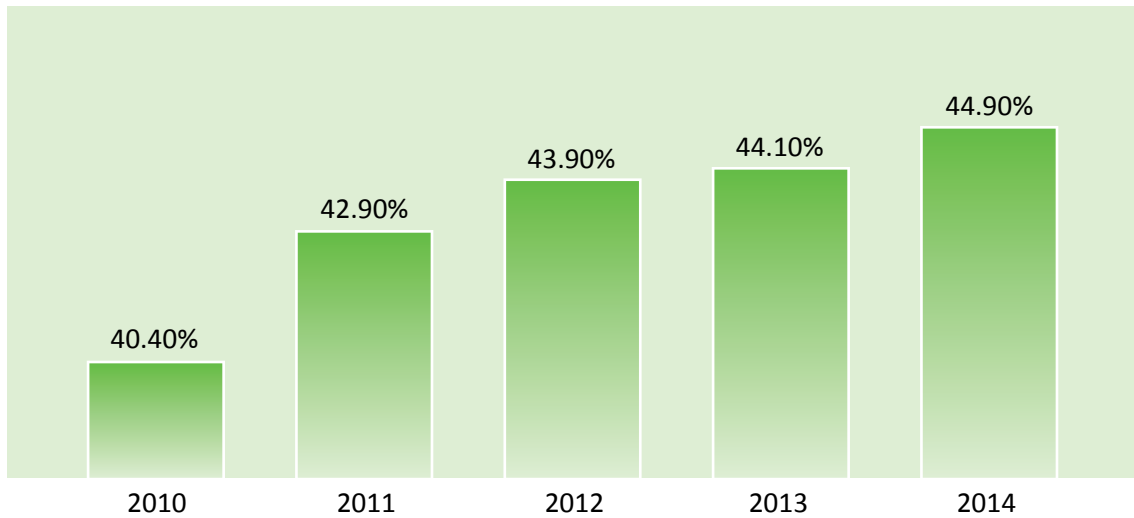


Figure 4: UK Household Recycling Rates 2010-2014¹⁵



This has only been possible through the innovation deployed by the industry which has led the way in changing attitudes to resources.

Case Study: Bag 2 Bag

Veolia has been working with local authorities to give new life to used plastic bags by turning them into refuse sacks. They collect used bags from Household Waste and Recycling Centres and their Materials Recovery Facilities (MRFs) to process into pellets which are made into bin bags. The bags are then delivered back to residents in the area from which the used bags were collected in the first place, demonstrating a truly circular approach to resources.

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Case Study: FCC Environment Re-use Initiatives

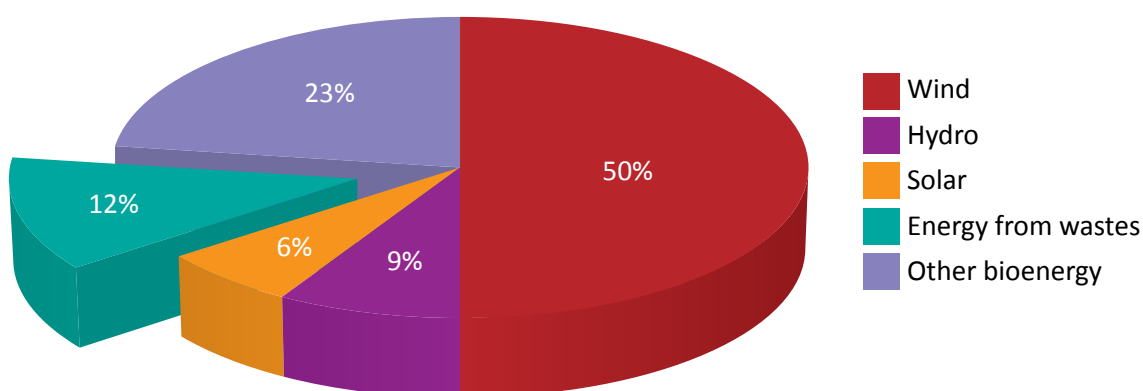
Re-use is a well established principle within the waste hierarchy. In 2015, FCC Environment opened a new re-use shop in the East Riding of Yorkshire following a £400,000 investment. Working with the local Hull City Council and East Riding of Yorkshire Council, FCC run the re-use shop which sells products that have been rescued from recycling centres operated by the company across the region. Some of the money raised by the shop is donated to several local charities. The project has been the catalyst for a series of other re-use stores across the country with the latest opening in Suffolk earlier this year. As with other FCC re-use stores, it is run in partnership with a local charity as well as the local authority, with profits helping to support local children and the homeless. The project is the first of its kind in Suffolk.



Producing clean energy

As the Resource and Waste Management Industry has moved away from landfill, it has sought new innovative ways of treating waste. Material that cannot be recycled is still a valuable resource from which we can recover energy. Energy from Waste (EfW) makes further use of these materials by providing the UK with a reliable, affordable and domestic source of energy. Due to the high organic content of the waste, it also contributes to the UK's renewable energy targets. In 2014 8,000GWh of renewable electricity was generated from waste¹⁶ which represents over 12% of the UK's total renewable electricity.¹⁷

Figure 5: UK Renewable Energy Mix 2014



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It is estimated that even as we meet our EU recycling targets, EfW has the potential to provide 15% of our renewable electricity by 2020.¹⁸

Case Study: Cory Environmental's Riverside Resource Recovery plant

The Riverside Resource Recovery Energy from Waste plant operated by Cory Environmental in the London Borough of Bexley, uses waste which would otherwise be thrown into a landfill as a resource to generate electricity. It is one of the largest and most efficient plants in the country having been awarded the coveted R1 status which means it is classified as an energy recovery operation rather than a waste disposal operation. The facility is permitted to accept 785,000 tonnes of waste a year, making a significant contribution to the capital's green energy needs, producing enough electricity each year to power around 110,000 homes.



Case Study: Biffa's Anaerobic Digestion Facility at Poplars

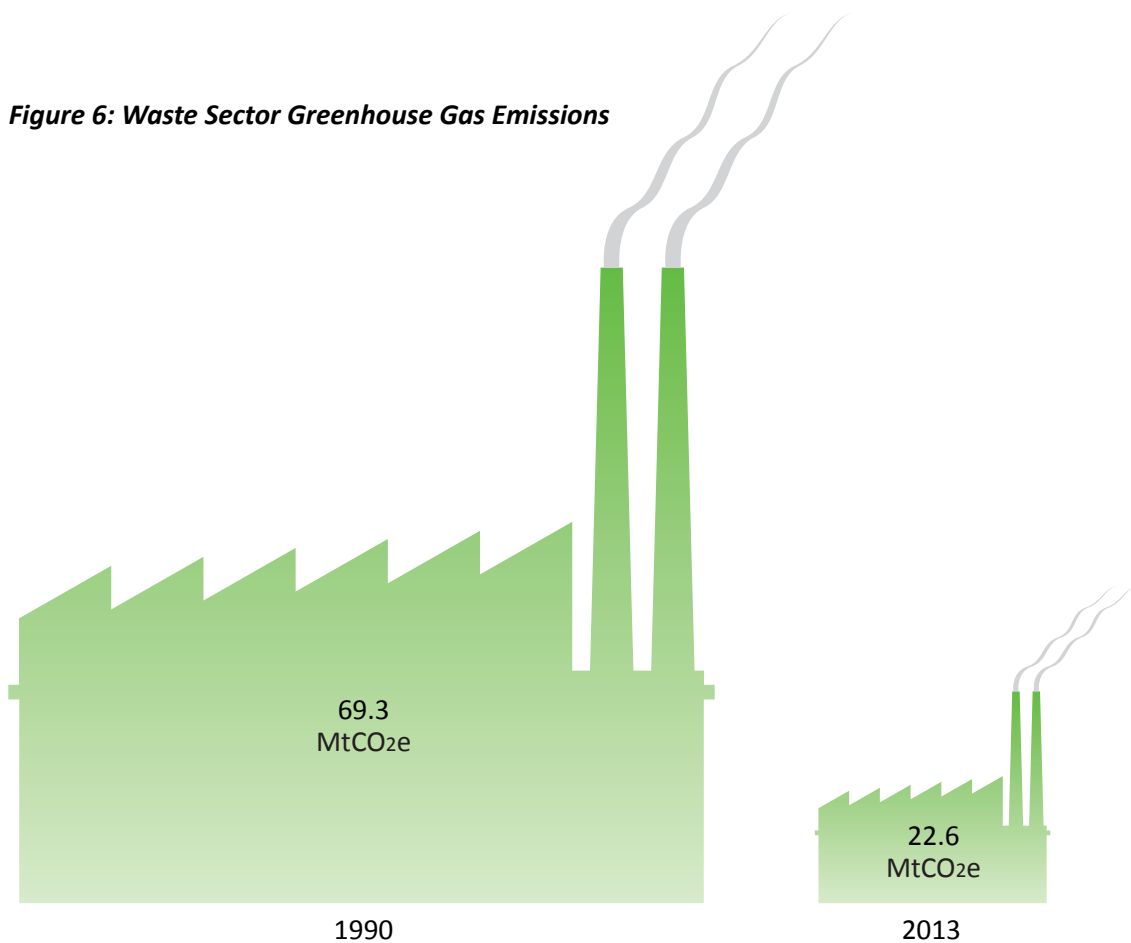
Biffa operates one of the biggest and most efficient Anaerobic Digestion plants in Europe. Located in Cannock, Staffordshire, the Poplars AD plant has the capacity to process 120,000 tonnes of food waste per year, generating enough energy to power 15,000 homes.

Cleaning our own industry

Not only is the industry helping the UK transition towards clean energy, it is also helping to tackle climate change by reducing its own emissions. So far, the industry has reduced its greenhouse gas emissions by 70% since 1990,¹⁹ and is working to continue the downward trend.

This has largely been down to the reduction in landfill, but on top of that, modern landfills are able to capture much of the methane they produce and convert it into electricity. Furthermore, EfW facilities have to comply with strict emissions limits so that in the whole of 2011, emissions from all EfW plants in the UK were less than those produced on Bonfire Night.²⁰

Figure 6: Waste Sector Greenhouse Gas Emissions



Giving back to communities

As well as contributing to the economy, providing jobs and protecting the environment, our companies give back to their communities.

The Landfill Communities Fund was established to enable landfill operators to claim tax credits on the landfill tax they pay to fund projects in local communities. Since it began in 1996, over 50,000 projects have received a total of £1.2 billion funding. Projects range from biodiversity projects to restoration of old buildings and community initiatives.

Case Study: Biffa Award

Biffa Award is a multi-million pound fund that helps to build communities and transform lives through awarding grants to community and environmental projects across the UK, as part of the Landfill Communities Fund. Since its formation in 1997, Biffa Award has supported more than 3,200 projects with a combined value of over £156 million.

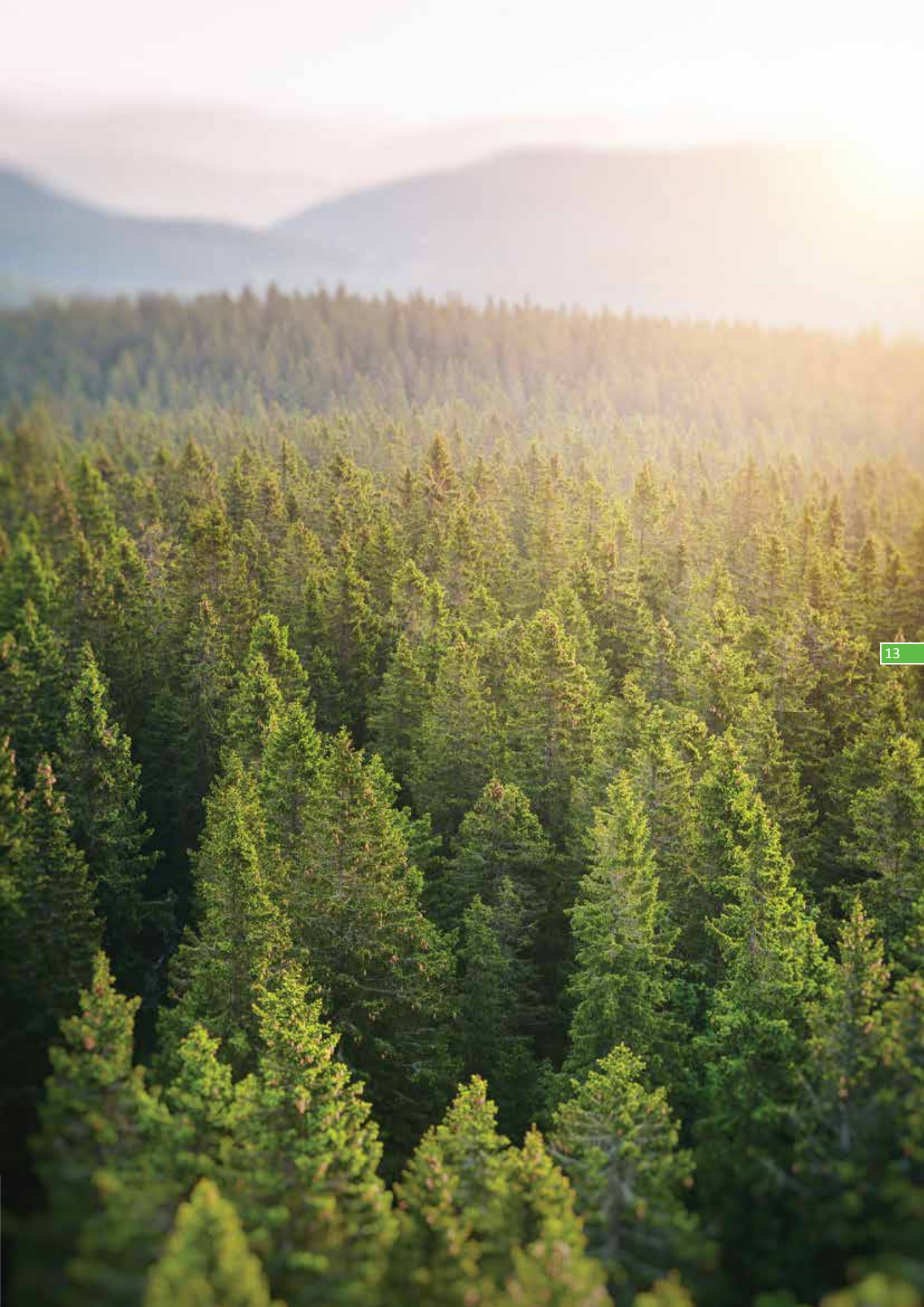
Almost 500,000 hectares of land have been improved for biodiversity—an area almost the size of Norfolk—and a recent impact assessment showed that Biffa Award funding has touched the lives of an estimated 1 in 5 people in the UK. Biffa Award projects make up an eclectic community across the country; with projects ranging in size and scale from a £500 to £1.6 million. This variety is one of the greatest strengths of the Biffa Award community, and something to be celebrated. In the past five years alone funding has installed double glazing in scout huts and provided a state of the art home for ThrustSSC, the fastest car ever made. Biffa Award has fixed sprinkler systems in a bowls club, installed practice nets in numerous cricket clubs, and brought beavers back to Britain for the first time in 400 years.

One such project was a Multi Use Games Area in Bilbrook, West Midlands. A grant worth £47,000 from Biffa Award provided new ground works, fencing and dugout shelters, football goals and basketball hoops, along with a multi-use sports court. Local children were involved from the beginning, so not only is the site designed to their specification, but there is a real sense of community ownership.

Case Study: Furniture Re-use Partnership between SUEZ and Doncaster Refurnish

SUEZ and Doncaster Refurnish have found an innovative way of reducing bulky waste going to landfill, providing goods to low income households and developing skills amongst people experiencing long-term unemployment. This is all done by collecting and upcycling unwanted furniture in Doncaster. In 2010/11, the partnership diverted 587 tonnes of bulky waste from landfill which saved approximately £33,000 in landfill tax, provided recycled furniture to 10,200 low income households and created five new jobs as well as 175 voluntary training schemes.







Our People: How We Do It

Overview of workforce

The Resource and Waste Management Industry could not carry out its vital work without the people it employs. The 106,000 jobs that the sector supports are spread out regionally, providing employment across the country. In 2012, the aGVA per hour worked was approximately £31 per hour, above the UK whole economy average of £27.8 per hour.²¹

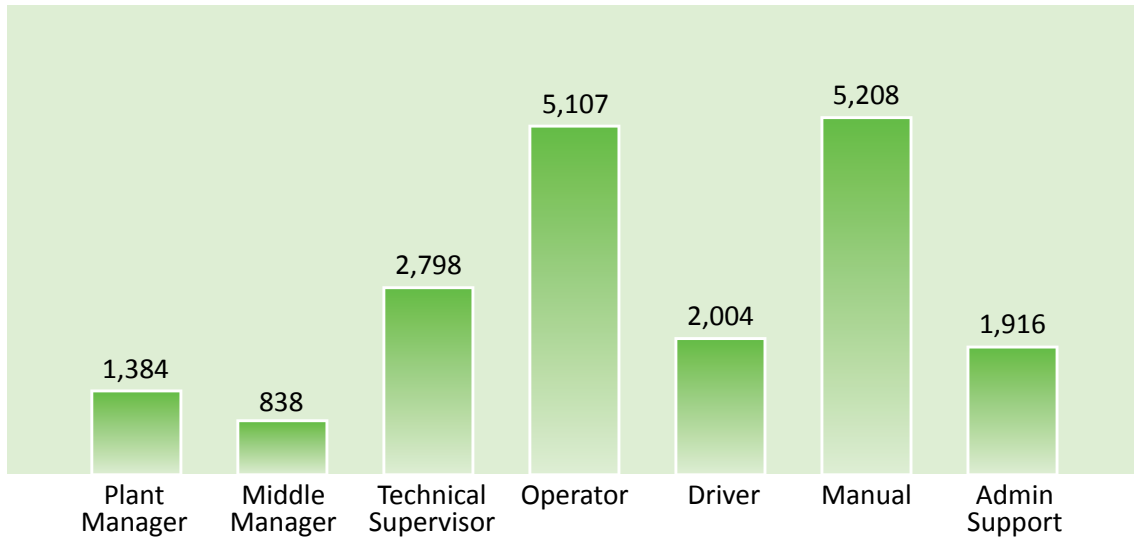
The increasingly innovative methods of treating waste and returning resources to the economy are creating new roles across the sector at higher skills levels. As we move towards a more circular economy, the Resource and Waste Management Industry will continue to play a leading role in generating green jobs and tackling unemployment in the UK. WRAP and the Green Alliance estimate that a more Circular Economy could create over 200,000 net jobs in the UK by 2030.²² The Resource and Waste Management Industry will significantly contribute to this. SUEZ estimates that investment in new waste infrastructure could create as many as 36,000 new jobs directly and potentially a further 48,000 jobs indirectly by 2020. The tables below show the potential for job creation across treatment type and job type.²³

Figure 7: Potential Jobs by Treatment

Treatment Type	Number of Direct Jobs	Number of Indirect Jobs
Energy from Waste	4,800-5,500	6,500-7,500
Materials Recycling Facilities	7,500-12,000	9,000-16,000
Organic Treatment	4,000-6,000	6,000-8,000
Niche, Specialist, Dismantling etc	3,000-12,500	3,500-16,500
Total	19,000-36,000	25,000-48,000



Figure 8: Potential Jobs by Type



Developing our workers

As more advanced waste technologies emerge and develop, the industry requires increasingly higher levels of skills. Through apprenticeships and training courses, the industry is developing its workers to help them fulfill their potential and provide valuable skills for the sector.

Case Study: The Energy & Efficiency Industrial Partnership

Many of our Members signed up to the Energy & Efficiency Industrial Partnership which set out to facilitate employers to attract talent and develop skills among their workers. The Partnership had four key aims:

- Setting the agenda: a raised positive profile for the sector with greater influence on national policy
- Solving skills shortages: fill critical gaps with a younger, more diverse and productive workforce
- Pioneering new approaches: enhance quality arrangements and develop assessments that are fit for purpose and recognised industry wide
- Greater investment in talent: ownership and participation in skills by more employers and their supply chains

During the two years of the programme, £500,000 of additional funding has supported nearly 1,500 learners in the waste and recycling industry. The majority of training was for upskilling programmes to raise the skills of the existing workforce, as well as apprenticeships. Through the programme, a number of employers in the industry engaged with Apprentices for the first time. Trailblazer Apprenticeships for Utilities Engineering Technicians and Maintenance Engineering Operations Technicians were developed, especially tailored to the needs of the waste and recycling industry.



Case Study: WAMITAB

The Waste Management Industry Training and Advisory Board (WAMITAB) is a Government regulated awarding organisation and charity that develops qualifications and certificates for those working in the waste and resource management sector. Annually WAMITAB certifies the competence of some 7,000 candidates over a range of qualifications from the level 1 Award in Waste and Resource Management to the level 4 Diplomas required for statutory competence. Uniquely, WAMITAB returns any surplus it earns to the industry that set it up in the form of bursaries and donations. One large local authority that WAMITAB has worked with reported seeing a 12% increase in productivity as a result of the organisation's work.

Case Study: Mentoring at Shanks

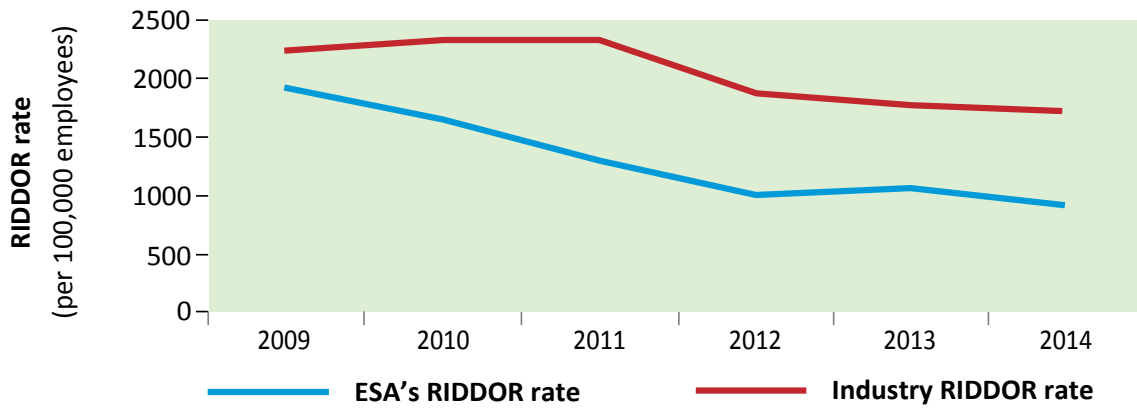
Shanks has established a mentoring scheme that now covers over a third of its senior management, and it is looking to extend the scheme across the company. Shanks has seen significant benefits from the scheme, not least financially; during a mentoring placement in the UK, the Managing Director of Shanks' Vliko business in the Netherlands, Louis Sciarli, put his enterprising skills to work by selling old equipment otherwise destined for landfill. This resulted in a massive and unexpected saving of £150,000, in this case putting a very real price on the value of the scheme.

Looking after our workers

With more innovative approaches to waste management involving increasingly advanced technologies also comes more risk. In the past, the industry has had a poor reputation for health and safety. However it has made significant improvements in recent years. Health and safety for workers is a top priority for ESA Member companies. In 2004 ESA launched an Accident Reduction Charter with Health and Safety Executive which has seen incidents decrease by 52.3% since 2009 under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). This is mirrored by a 23.7% industry-wide decrease.²⁴



Figure 9: Comparison of ESA's Accident Rate against the Waste Industry as a Whole



While there is still some way to go until we reach zero harm, ESA Members are leading the way in promoting health and safety standards, which we hope will be shared across the whole industry.



4

How Can We Continue to Thrive?

As we have seen, the industry has a lot to celebrate. The sector has the potential to grow further and faster, bringing more benefits to the economy, employment and the environment. As pointed out previously, with £10bn investment the industry has the potential to deliver a further 50,000 jobs and boost GDP by £3bn each year, while raising recycling rates and maximising the value we capture from our waste.

However, the market is currently under pressure from rising costs and depressed commodity markets. After eight years of decline, household waste volumes are once again rising, while recycling rates are under pressure, and there is a projected waste capacity gap which is exacerbated by new waste treatment facilities not coming on stream quickly enough to replace closing landfills.²⁵ And the whole industry is being undermined by a weak regulatory system which has allowed waste crime to flourish.

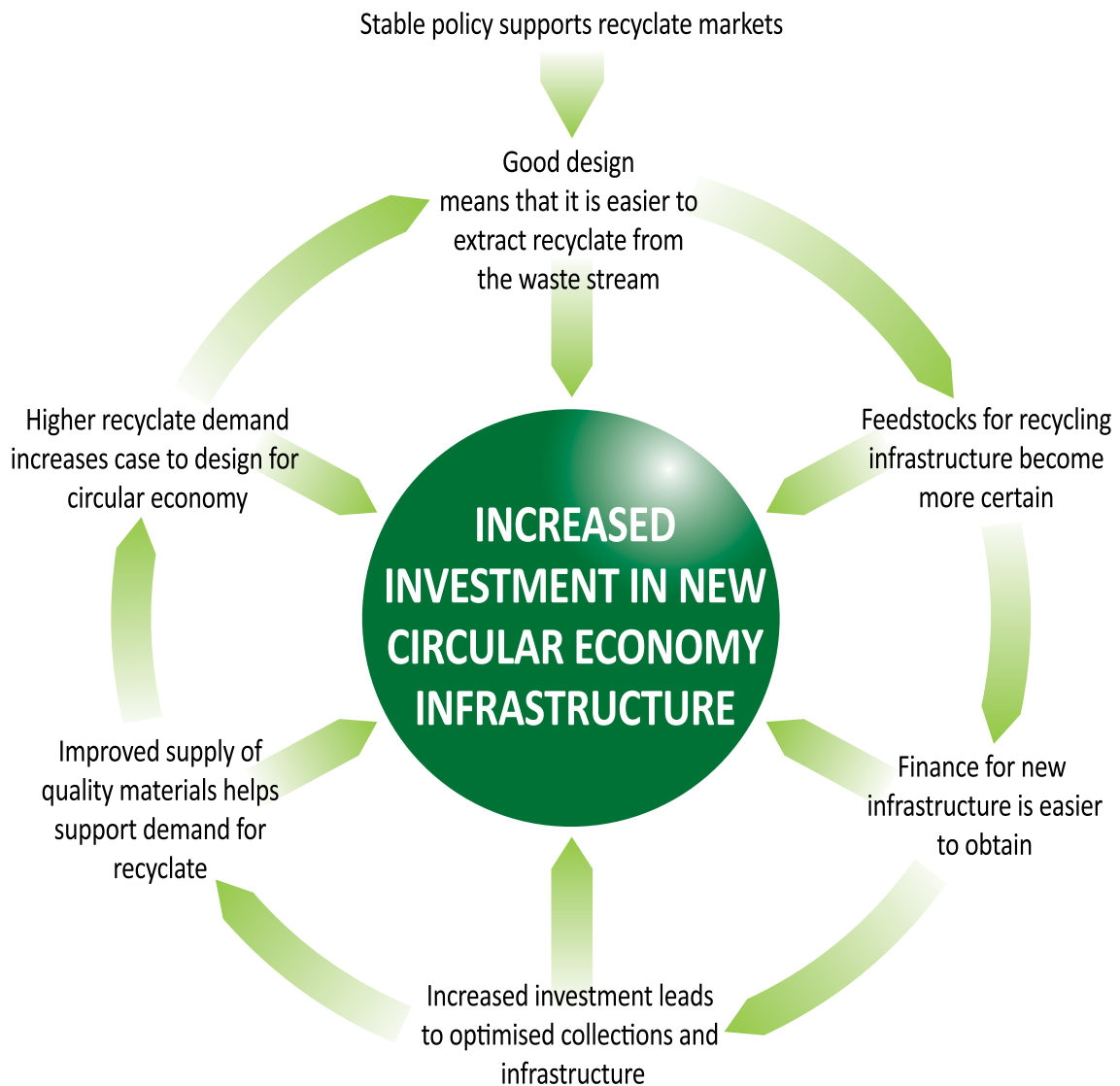
We believe that the UK has a fantastic opportunity to become a world leader in the recycling and recovery of its waste resources. If we act now to reform the fragmented and disjointed systems which are currently in place for managing our waste, then we could realise £2 billion in annual savings to public authorities and businesses, unleash private sector capital for investment and save the UK economy £500 million per annum from addressing waste crime.



The UK's waste has the potential to act as a feedstock for our industrial and chemicals sectors. It can be used as a flexible fuel, which could fit into the decentralised energy systems of the future, while planning for collections and logistics will need to be integrated into the development of smart cities' approaches to life and work in an increasingly urbanised and resource-constrained world of the future.

To fulfill all of this we need the stability enabled by a long-term, coherent waste and resource strategy, illustrated in the below diagram.

Figure 10: Derisking Investment



Recommendations

There are four main areas we would like to see better supported by UK policy. These would improve incentives along the supply chain, drive efficiency, lower costs—particularly to the local government sector—and deliver private investment much-needed to ensure our recycling and landfill diversion rates do not go backwards.

Recommendation 1

Develop more resilient recovery markets for waste-derived products

Recycling, historically cheaper than alternative forms of treatment, is currently struggling to remain profitable, with costs rising due to falling commodity prices. Higher recycling levels have increased the industry's exposure to global commodity markets beyond its control. Lower prices for recycled materials make it all the more essential that the quality of materials is maximised and contamination is kept to a minimum.

Pressures on local government finances are forcing councils to reduce household service levels and leading to increased material contamination. This is leaving the recycling industry facing a combination of falling input quality, rising processing costs, and falling output prices. A continuation of these factors will all but guarantee the UK missing its 2020 and 2030 recycling targets.

We would like to see greater attention given to the quality of the recyclate and the demand for recycled material. In particular we suggest:

- Greater harmonisation of collection systems to deliver more consistent outputs and lower contamination
- Stronger green public procurement rules to lever public sector spending power for waste-derived materials and energy
- Stronger tax incentives for the use of recycled materials
- Better information to enable consumers to choose resource efficient products

By stimulating demand for recycled content, the UK can continue to invest in green growth and transition to a Circular Economy.



Recommendation 2

Introduce a new framework for producer responsibility which transfers resource ownership from local authorities to product supply chains

Transferring responsibility and funding of collection systems from local authorities to product supply chains would create incentives for producers to be involved in the design of collection systems which deliver materials that meet their own requirements, whilst reducing the financial burden on local authorities. As a result, this would create a climate for greater investment in reprocessing facilities which feed UK manufacturing.

Extended Producer Responsibility is integral to this. Existing schemes are failing to produce secondary materials of consistent quality, and a review is much needed to see how they can better encourage recyclability and use of recycled content.

New schemes should incentivise producers to:

- reduce waste – both from their production processes and from the post-use arisings from their products
- design products and packaging which are easier to recycle
- design products and packaging which use higher quantities of recycled materials

This would help produce secondary materials of consistent quality which would drive resource efficiency, strengthen competitiveness, stimulate long-term investment and would make the system resilient to changing market pressures and drivers.

Recommendation 3

Improve the efficiency of waste collection systems and infrastructure

The current patchwork of local authority waste management delivery creates wide-spread duplication and therefore there is significant scope for efficiency savings. The Government's devolution and cities agenda presents an opportunity to create a more joined-up approach to waste management between local authorities, which would increase economies of scale and yield an overall reduction in system costs.

In particular, we would like to see:

- Harmonised systems, at greater than local authority level, to manage household, commercial and industrial waste streams together
- A review of current waste-related targets and incentive schemes to ensure that the value from waste is maximised and we do not inadvertently favour lower value options
- Resource flows mapped with industrial demand for the potential outputs from post-recycling residual waste, including power, heat, transport fuels and chemicals



Recommendation 4

Drive Waste Crime out of the Sector

Waste crime is a serious problem for the industry as it undermines legitimate business. It is estimated that the public sector loses £568 million each year through unpaid landfill tax and clean-up costs.²⁶ Illegal exports also make up a significant portion of the problem. ESA welcomed the £20 million HM Treasury has ring-fenced for the Environment Agency to tackle waste crime over the next five years and the additional funds for HM Revenue & Customs announced in the 2016 Budget Statement.

Alongside this funding, a new settlement for regulation of the sector should be introduced which increases penalties for those who flout the law, while reducing burdens on legitimate operators. We would like to see:

- A review of legacy permits and exemptions so that all material that is stored and processed is accounted for in the legitimate system
- A greater emphasis on innovation, rather than the precautionary principles, to stimulate technological solutions to environmental challenges
- More stringent requirements on permit holders, combined with more stringent powers for the regulator to stop activity in breach of its permit
- The introduction of more rigorous application of Duty of Care to ensure that (i) all waste is picked up by a registered waste carrier and (ii) those registered carriers deliver waste to a permitted site

By rooting out unscrupulous operators, compliant businesses will be able to thrive

We believe that by implementing these policies, the Government will enable us to create a system which is resilient, builds UK competitiveness and makes the UK a world leader in environmentally and economically sustainable waste and resources management.



Notes:

- ¹ <http://appsso.eurostat.ec.europa.eu/nui/show.do> [accessed 23rd March 2016]
- ² Defra, *Digest of Waste and Resource Statistics* – 2016 Edition (revised), p.11
- ³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487916/UK_Statistics_on_Waste_statistical_notice_15_12_2015_update_f2.pdf, p.2 [accessed 23rd March 2016]
- ⁴ Defra, *Resource Management: a catalyst for growth and productivity* (2015), p.4
- ⁵ Ibid, p.5
- ⁶ <https://www.uktradeinfo.com/Statistics/StatisticalBulletins/Pages/BulletinArchive.aspx?viewname=Landfill+Tax+Archive, October 2015 release, sheet 2> [accessed 23rd March 2016]
- ⁷ UK Non-Financial Business Economy (Annual Business Survey): Section A-S, Section E [accessed 31/03/2016]
- ⁸ UK Non-Financial Business Economy (Annual Business Survey): Section A-S, Section E [accessed 31/03/2016]
- ⁹ ESA, *Going for Growth: A Practical Route to a Circular Economy* (2013), p.2
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- ¹¹ <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables, Local Authority collected and household waste statistics 2005 to 2006, table 3> [accessed 23rd March 2016]
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- ¹⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487916/UK_Statistics_on_Waste_statistical_notice_15_12_2015_update_f2.pdf, p.2 [accessed 23rd March 2016]
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- ¹⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437937/Renewable_energy_in_2014.pdf, p.49 [accessed 23rd March 2016]
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- ²¹ Defra, *Resource Management: a catalyst for growth and productivity* (2015), p.6
- ²² Green Alliance and WRAP, *Opportunities to tackle Britain's labour market challenges through growth in the circular economy* (2015), p.3
- ²³ SUEZ, *Driving Green Growth* (2012), p.24-25
- ²⁴ ESA, *Aiming for Zero Harm in the Waste and Recycling Industry* (2016), p.10
- ²⁵ Green Investment Bank, *The UK Residual Waste Market* (2014), p.19
- ²⁶ Environmental Services Association Education Trust, *Waste Crime: Tackling Britain's Dirty Secret* (2014), p.4





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