BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

HRH THE PRINCE OF WALES ROYAL FOUNDING PATRON

LIFTING THE LID ON WASTE

A guide to recycling, waste management and resource productivity for business

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

HRH THE PRINCE OF WALES ROYAL FOUNDING PATRON

CONTENTS

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

ROYAL FOUNDING PATRON

LIFTING THE LID ON WASTE: A GUIDE TO RECYCLING, WASTE MANAGEMENT AND RESOURCE PRODUCTIVITY FOR BUSINESS

This guide sets out the opportunities that rethinking resource and waste transformation can bring, explaining how to eliminate avoidable waste and turn 'waste' into 'wealth'. For any business that recognises its responsibility to change, this is the starting place.

CAMPAIGNING TO ELIMINATE WASTE

Business in the Community's Waste to Wealth campaign brings together business, government, academia and civil society to unlock opportunities to double the nation's resource productivity and eliminate avoidable waste by 2030. Over 160 organisations have already joined the campaign by signing up to the Waste to Wealth Commitment[1] or becoming our Waste to Wealth Partners.

The Lifting the Lid on Waste Guide aims to help everyone involved with material resources and waste – landlords, tenants, property managers, facilities managers, procurement teams and employees – to understand how to eliminate avoidable waste and turn any 'waste' created by your business into 'wealth' through reduction, reuse and recycling. It focuses specifically on reducing and better managing waste as part of a wider circular economy strategy, recognising that waste is value leaking from our economy.

THE WASTE TO WEALTH COMMITMENT

1. Set targets to improve the productivity of resources that are key for our business
2. Work collectively to double the nation's resource productivity and eliminate avoidable waste by 2030, contributing in the way that is most relevant to our business
3. Redesign how resources are used in our products, services and operations
4. Collaborate across our organisations, value chains and sectors
5. Reconvene and report on progress annually to share learning and demonstrate results

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

ROYAL FOUNDING PATRON

The guide draws on the experience of some of the UK's leading resource management companies, BITC's Circular Economy Taskforce and signatories to the Waste to Wealth Commitment.

It describes a range of opportunities for turning waste into wealth and the processes needed to realise these, including:

- Identifying opportunities to reduce, reuse and recycle waste
- Understanding the benefits for business, society and the environment
- Establishing your starting point, prioritising actions and deciding on your level of ambition
- Engaging internally with senior management and employees, and externally with suppliers, landlords and other tenants

The guide is designed to be relevant to all organisations, large and small, and from all sectors – from professional services to retailers, manufacturers and construction companies.

WASTE TO WEALTH

#WasteToWealth

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

HRH THE PRINCE OF WALES ROYAL FOUNDING PATRON

FOREWORDS

On a daily basis we are all now confronted with the immense challenges that climate change, resource scarcity and environmental pollution can bring. In the face of these problems, BITC brought together business, government, academia and civil society – and together we pledged to double the nation's resource productivity and eliminate avoidable waste by 2030. Those challenges became our motivation.

We have seen over 160 signatories to our pledge and with this came exciting possibilities for innovation, job creation and prosperity. More broadly, so many of our members have stepped up to meet the biggest challenge facing our planet. We have had businesses committing to the daunting task of ensuring zero waste goes to landfill, to aiming for 100% reuse and recycling of their products; that's hundreds of thousands of products worldwide that could otherwise end up in landfill.

This guide demonstrates all these impressive achievements and examples of collaboration and creativity that would not be possible without our world-leading network of members committed to action. We hope that by lifting the lid on waste, it will inspire many more businesses to see the opportunities that resource and waste transformation can offer – an opportunity to transform our future.

Amanda Mackenzie OBE, Chief Executive, Business in the Community

Recently we have seen a sea-change in public awareness of the negative consequences of our 'throw away' economy, and a strong desire for a less wasteful and more circular culture. This is mirrored by awakenings in business and governments about value creation, and an increase in levels of innovation and ambition. It is more challenging to turn this into practice: doing things differently can be difficult, if it is not prioritised.

Recognising that we all have a responsibility to change is the starting point. Many businesses have targets for zero waste to landfill and have successfully increased recycling and reduced waste. But collectively we must go further and faster if we are to reverse the damage we are doing, reduce resource use and turn waste into wealth. This requires a change in business model and a shift in our supply chain management, from the tradition of waste being someone else's responsibility, towards giving it some value. We also need to 'lift the lid on waste' to increase understanding and dispel myths about what happens to our resources after we use them. Negative media reports about recyclable waste being shipped to other countries or ending up in landfill can mask the many positive reuse and recycle stories and create confusion about the best path of action.

Some of the steps are relatively simple, for example improving our understanding of current resource and waste flows or better educating employees. Some are more complex, requiring longer term investment, partnerships and infrastructure. By coming together to address our collective challenges, share stories and lessons learnt, and collaborate at a very practical level, we surely will go further and faster. As this guide demonstrates, there are very significant benefits – environmental, financial, social and reputational – to be reaped.

Guy Grainger, Chair of the Circular Economy Taskforce and Chief Executive Europe, Middle East and Africa, JLL

We look forward to working together to see what we can achieve.

SETTING THE SCENE

TIME TO RETHINK RESOURCE USE AND WASTE

Material resources are at the heart of our society, allowing us to meet our human needs, as well as generate economic growth and social value. Until recently, we have largely depended on a linear 'take-make-use-dispose' system in which natural resources are extracted, turned into products and then discarded at the end of their 'useful' life. Our attitudes towards resources and waste are changing profoundly as we recognise that, quite simply, we use too much and are too ready to throw things away, often after a single use. This brings many negative consequences, including the depletion of natural resources, environmental pollution and the emission of greenhouse gasses.

Waste has traditionally been viewed as something to get rid of – via a simple service at the cheapest price – and as a cost to business. While procurement and operations have often been scrutinised for ways of increasing productivity, achieving environmental benefits, reducing costs and improving resource efficiency, waste has tended to be consigned to waste management contracts – with responsibility for reuse, recycling or disposal passed on to someone else.

It is time to rethink resource use and concepts of 'waste', to reduce and where possible design out 'waste', and to understand the opportunities for turning waste into new 'wealth'. For this, we need to go beyond incremental improvements and apply fresh thinking and innovation, recognising that business as usual will only get us so far.

We use too much and are too ready to throw things away, often after a single use.

HOW IS BUSINESS RESPONDING

Leading UK businesses have for some time recognised the importance of challenging their own consumption and production activities, seeking to 'reduce, reuse, recycle' and, more recently, to introduce circularity to their operations, products and services. Some have set bold targets and ambitions: going zero waste to landfill, eliminating single use plastic, reaching 100% reuse and recycling, and introducing circular procurement requirements and business models. JLL, for example, has a target of achieving zero waste to landfill and a 70% recycling rate across corporate offices by 2020: by 2018, they had achieved 99% diversion rate from landfill for their office and IT waste, with over 75% of all waste recycled.[2] Similarly, Marks and Spencer achieved zero waste to landfill from their operations and construction activities in 2012. They also work across their value chain on key waste streams such as food, used clothing, packaging and carrier bags.[3] PwC also set ambitious targets early: they have been zero waste to landfill since 2012 and have recycled or reused 90% of all waste for several years.

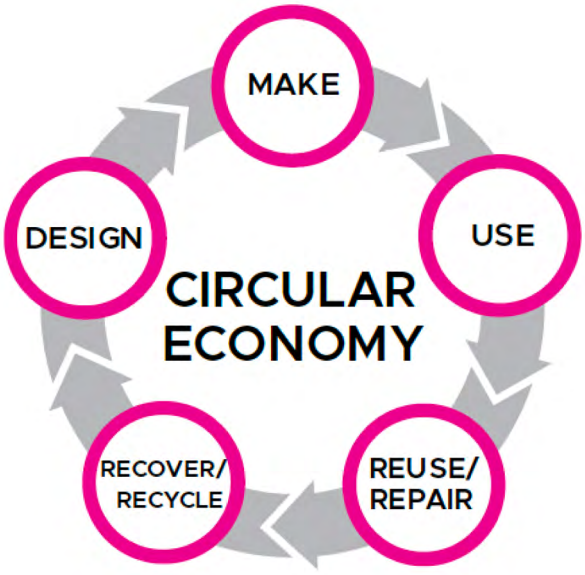
Going forward, all businesses will need to take responsibility for using resources more efficiency and eliminating avoidable waste; following the hierarchy of 'reduce, reuse, recycle and recover' and moving beyond this to a circular approach where resources are kept in use for as long as possible and we extract maximum value from them throughout the life cycle.

IMPACT STORY

Since 1996, **Interface** has reduced waste to landfill across its global business by 92%, by eliminating waste and redesigning processes and products to use recycled and bio-based materials. Over this time, Interface have kept more than 136,000 tonnes of carpet and carpet waste out of landfill. And they have recycled much of that back into new products; recycling or repurposing more than 20 million tonnes of postconsumer carpet brought back from customers through their ReEntry™ programmes worldwide in the last three years alone.

INCENTIVISING AND LEGISLATING FOR CHANGE

In 2018, the UK Government published the Resources and Waste Strategy[4], setting out its plans to preserve material resources by minimising waste, promoting resource efficiency and moving towards a circular economy in England.



The strategy's aims include: leading the world in using resources efficiently, reducing the waste we create by keeping resources in use for as long as possible, unlocking the value in waste by managing it more smartly, and making sure that those responsible for creating polluting products pay for the costs of that pollution – enshrining the 'polluter pays principle' throughout the strategy. At the same time, the Government promises to minimise the damage caused to our natural environment by reducing and managing waste safely and carefully, and by tackling waste crime. Likewise, the Scottish and Welsh Resources and Waste Strategies also contain significant programmes of change to enable more recycling and greater resource efficiency.

Importantly, these strategies set the direction of travel for producers of all municipal and commercial waste streams, as well as for councils, regulators and service providers. Many smart businesses have stayed ahead of the curve. Now all businesses will need to be aware of new legislation that will tighten requirements to recycle more, to maintain their Duty of Care by working with responsible waste management companies, and to ensure that waste producers are responsible for the full life-cycle costs of the materials they put onto the market. (See page 16 for more detail about Duty of Care).

'This is our blueprint for eliminating avoidable plastic waste over the lifetime of the 25 Year Environment Plan, doubling resource productivity, and eliminating avoidable waste of all kinds by 2050. We want to be ambitious. Where existing legislation cannot match our ambitions, we will take new powers to strengthen it.' **Defra, (the UK Government Department for Environment Food and Rural Affairs), Resources and Waste Strategy for England 2018**

GOOD PROGRESS BUT MORE TO BE DONE

Minimising the amount of waste produced is the first step towards achieving better resource productivity. Businesses can often improve their own efficiency by considering waste prevention first, including integrating waste reduction into design of products and services and into the operations of their work premises.[5]

Over the last 20 years, the UK has made real progress in moving away from disposing of commercial and industrial waste in landfill towards a balance of higher levels of recycling and recovery. For example, we've gone from a recycling rate of packaging waste of near zero to almost 65% today. Bioenergy, which includes energy recovered from waste that cannot be economically recycled, now supplies the UK with 17%[6] of its renewable electricity capacity. These achievements reflect huge investment in recycling and recovery infrastructure and services and have enabled the resource management sector to reduce their greenhouse gas emissions by over 70%.[7]

'Momentum is clearly building around the circular economy. It's crucial that the quality as well as quantity of the materials we collect and send for recycling continues to improve. Producer responsibility reform must place strong incentives on producers to design their packaging for recycling, and businesses must do their bit too. The resources and waste sector will work tirelessly with business and governments to ensure resources are properly stewarded whilst boosting the economy and providing green jobs.' **Jacob Hayler, CEO Environmental Services Association**

Yet we have a long way to go and plenty of hurdles to overcome. The complexity of the material streams produced by UK businesses and households makes providing a 'one size fits all' recycling service very challenging. Good resource management is also complicated by relentless consumer demand, lifestyles centred around convenience, and by volatile global markets for materials – making secondary markets vulnerable.

Furthermore, there is growing public and political concern about the UK's dependency on exporting waste materials for reprocessing, particularly following China's decision to restrict the import of materials (especially paper and plastics) for recycling, and increased mindfulness of the problems associated with exporting low quality materials to countries with differing levels of waste regulation enforcement.

There are several reasons for our reliance on exporting, including a strong demand from overseas manufacturers, the complexities of a global economy, a lack of infrastructure and required investment in new recycling and waste facilities, and patchy UK demand for secondary materials. Yet there are significant opportunities to be gained from keeping more 'waste' or secondary materials in the UK. It is estimated that reshoring 50% of wastepaper, 30% of scrap metal, 30% of plastics and 10% of secondary textiles (relative to current practice) could generate £646 million of additional GVA per annum by 2030.[8]

Collaboration is essential if zero waste to landfill and 100% reuse and recycling targets are to become a reality.

Addressing the shortfall in infrastructure and secondary markets in the UK will require commitment and collaboration between

businesses as 'waste' producers and the resource management sector – to design products/services for reuse and recyclability, to improve reuse and recycling technology and infrastructure, and to stimulate the demand for secondary materials.

The UK has made progress but still has a long way to go.

WASTE IN THE UK – PROGRESS TO DATE

- **Waste generation** The UK produces over 200 million tonnes of waste each year. Construction, demolition and excavation activities account for 59% of all waste and commercial and industrial waste for 14%.[9] Waste generation is generally linked to economic cycles and population growth, as well as material productivity and consumption patterns, and has stayed broadly stable over the past decade.
- **From landfill to recycling and recovery** While the use of landfill has reduced dramatically, it remains the second most used waste treatment in the UK, with 24% (52 million tonnes) of waste disposed of at landfill in 2016.[10]
- **Recycling levels** Recycling rates (all waste streams combined) are plateauing at around 45%, although rates for packaging waste are highest at 71%.[11]
- **Carbon** The waste and resources sector has achieved dramatic cuts in greenhouse gas emissions since 1990, mainly due to more recycling and diversion of material away from landfilling. The sector now accounts for around 4% of total UK emissions[12], and the challenge is to go further.

THE HIDDEN CHALLENGE OF WASTE CRIME

Waste crime is a serious problem in the UK. Criminals and unscrupulous operators recklessly and illegally dump and export waste, with waste-related crime costing the UK economy at least £600 million every year (including clean-up costs and unpaid landfill tax)[13], in addition to harming the environment and causing distress to communities. Tackling waste crime is a complex and long-term task. Environmental regulators are working with the police, HMRC and business, but all businesses need to be aware and should choose their waste management provider carefully.

Even well-intentioned businesses can often overlook their legal Duty of Care and unwittingly employ waste companies operating at the fringes of the law. Responsible businesses can always check the relevant licences and credentials of their service provider and ask for details of the end-destinations of their recycling and waste collections, before placing the order. (See page 16 for more about Duty of Care).

The UK's responsible recycling, resources and waste management sector, via its trade and professional associations working with the Government and regulators such as the Environment Agency, is seeking to raise standards across the sector and give a stamp of assurance to service users, similar to the farming industry's Red Tractor scheme. Most responsible service providers will already be accredited to relevant BSI standards such as ISO 9001 and 14001.

The sector has also championed the 'Right Waste, Right Place' campaign, with online resources, webinars and events helping businesses and raising awareness of Duty of Care compliance requirements and the simple actions required to ensure good practice.

56% of UK businesses are not fully complying with their Duty of Care and waste regulatory requirements.

94% of non-compliant businesses are SMEs with under 250 employees.[14]

Visit rightwasterightplace.com for guidance and case studies on compliance, recycling and responsible waste management.

FROM CLIMATE CHANGE TO EMPLOYMENT –THE IMPORTANCE OF TURNING WASTE INTO WEALTH

At a macro level, there are very significant benefits to be gained from turning waste into wealth. In combatting climate change, beyond renewable energy and energy-efficiency measures, tackling the remaining 45% of emissions associated with making products is key. It is estimated that when applied to four key industrial materials (cement, steel, plastic and aluminium), circular economy strategies could help reduce emissions by 40% in 2050.[15]

From an economic perspective, more than 100,000 people are directly employed in the waste and recycling industry with many more employed indirectly through the supply chain and in the construction sector. Increased investment in new waste and recycling facilities will bring additional employment opportunities. It is estimated that five to ten jobs are created for every 1,000 tonnes of material recycled, compared to 0.1 jobs for landfill. Furthermore, larger waste management projects can be expected to generate up to 300 jobs during construction.[16] At least 50,000 new UK jobs (30,000 in recycling and 20,000 in supply chains and the wider economy) could be created by 2025 if we make the changes necessary to reach the target of recycling 70% of our waste.[17]

Increased recycling and minimising waste are good for the economy and the environment. Defra analysis shows that 65% recycling would result in £2.5 billion in waste sector savings, £4.9 billion in social savings and £2.4 billion (44 MtCO2e) greenhouse gas emission savings by 2030.

It's also clear that the UK public wants to recycle more – its consistently in people's top two environmental concerns, and recycling is 'personally important' to 94% of people.[18]

There are many opportunities for businesses to improve their own productivity and performance by reassessing their products, services and processes. For example, WRAP estimates that longer lasting, repairable and modular products would enable new business models leading to £4.4 billion in financial benefits over the next eight years for the UK alone, while preventing a million tonnes of waste and saving 14 million tonnes of CO2 emissions annually.

FIVE TO TEN
Jobs created for every 1,000 tonnes of material recycled.

0.1
Jobs created for every 1,000 tonnes of material for landfill.

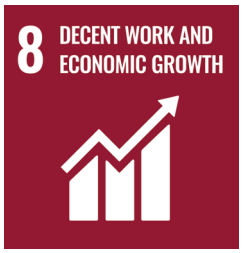
HOW WILL YOU BENEFIT FROM TURNING WASTE INTO WEALTH?

Responsible waste management can bring a wide range of financial, environmental and social benefits to your organisation.

THE GLOBAL GOALS

Launched in September 2015, the Global Goals, also known as the Sustainable Development Goals, provide a powerful aspiration for improving the world by 2030. For business, the Global Goals present a robust framework to inform the design, delivery and communication of sustainable and responsible business practices.

Collaborating to ensure good resource and waste management and to eliminate avoidable waste will specifically contribute to goals 6, 8, 9 and 12, (with the specific targets being 6.3, 8.4, 9.4, 12.2, 12.4, and 12.5), and with many benefits to achieving other goals.



SAVING COSTS AND INCREASING RESILIENCE

Increasing resource productivity and eliminating waste make your business more efficient and reduce costs. Defra estimates that UK businesses could benefit by up to £23 billion per year by introducing quick-win resource efficiency measures.[19] In addition, diverting waste from landfill will bring cost savings through reducing landfill tax payments. Torbay and South Devon NHS fund drove down costs by 5% by increasing recycling and giving 50% of their waste new life.[20]

Professional services firm PwC has seen multiple cost benefits over its twelve-year programme.

'Better waste management has commercial benefits as well as being better for the environment. For example, switching end-of-life treatment from landfill to best-in-class solutions can deliver carbon footprint savings of between 20% and 110% depending on the waste stream. It can also deliver up to £75 per person annually in cost savings or new revenues.

You also save money by reducing consumption and remanufacturing items. Between 2007-2019 we saved over £25m in energy and offset costs, and £4.5m in paper costs. By remanufacturing our task chairs, we reduced costs and the carbon footprint of items by around 60%. And by sending off our laptops to be remanufactured we generate around £500m in any year.'[21] **Bridget Jackson, PwC's Chief Sustainability Office**

Reducing resource use will also increase resilience to raw material shortages and price volatility.

INNOVATION AND NEW REVENUE

Innovating to turn 'waste' into new products can create new market opportunities and revenue streams. Paninis, a wholesale sandwich supplier, worked with WRAP to identify a lucrative revenue stream turning discarded bread into breadcrumbs to sell on to other catering companies. They recommended action that would increase Paninis' recycling rate from 25% to 85%, reduce disposal costs by £8,000 per annum, and create a new revenue stream worth up to £130,000 per year.[22]

A drive to innovate in order to avoid waste is likely to produce financial and other business benefits. James Cropper is a paper innovator based in the English Lake District, supplying paper products to brands, art galleries and designers. Their 'CupCycling™' process, which turns disposable coffee cups into paper and packaging, is helping to reduce the amount of single-use coffee cups entering the waste stream. Several national coffee shop chains and retailers have signed up to be either material providers or purchasers of the recycled product and more than 60,000,000 cups have already processed.[23]

IMPACT STORY

Zero Waste Scotland supports acceleration to a more circular economy in Scotland in a number of ways.

One project, the Edinburgh Circular Economy Mapping and Opportunities Identification undertaken by **Zero Waste Scotland, the City of Edinburgh Council, Chamber of Commerce** and **Jacobs** identified several opportunities for materials to be recovered in the city for reuse and repurposing with significant environmental and economic benefit, including:

- Refurbishing ICT equipment with a saving per annum of £13m-£140m and reduction of between 15,000 and 39,000 tonnes of CO2 equivalent (tCO2e) from reuse and repair
- Using alcohol by-products as inputs into, for example, high-quality protein feeds with an annual saving of £760,000 and tCO2e reduction of 800 from energy recovery associated with the spent grains
- Decreasing single use plastics and reusing props for Edinburgh's festivals with an annual saving of over £180,000, and tCO2e of over 70
- Integrating a circular approach into the management of facilities – offices, university and public sector property – for example, with an annual saving of over £800,000 and tCO2e saving of 100[52]

Better resource management is often the most direct and positive impact a business can have on its carbon and environmental footprint

ENVIRONMENTAL VALUE

Along with energy and water management, better resource management is often the most direct and positive impact a business can have on its carbon and environmental footprint – from reducing landfill to using fewer material resources. Waste can be overlooked as a contributor to a business's carbon footprint, particularly where biodegradable waste ends up in landfill and creates methane, which is about 27 times more potent than CO2 as a greenhouse gas.

CREATING SOCIAL VALUE

Turning waste into wealth can lead to skills and employment opportunities within organisations and externally in reuse and recycling activities – this can all contribute towards delivering social value objectives. Redistributing unwanted goods such as furniture, food or carpets can also bring important benefits to charities and communities. Crown Workspace (who acquired Premier Sustain in 2018) employ 20 full-time staff in the repair, refurbishment and remanufacturing of office furniture and IT at their Renew Centre. In 2017-18 they facilitated the donation of 1,516 items of furniture through their Giving Back initiative. Similarly, Greenstream Flooring works in partnership with Interface and others to provide affordable used flooring to low-income Housing Association tenants.

IMPACT STORY

Costain, in partnership with **Skanska**, delivered **National Grid**'s £324 million London Power Tunnels scheme, creating 32km of new electricity superhighway deep below London, helping to ensure safe and reliable electricity supplies.

Over 400,000m^3 of material was to be excavated (enough to fill the Albert Hall twice over), presenting a significant logistical operation and creating an enormous amount of waste. The team explored options to minimise spoil going to landfill and identified an opportunity to reuse the spoil within National Grid's network of disused gas holders that required remediation. This approach prevented 340,000m^3 of excavated spoil and 97.6% of all other waste from going to landfill. Moreover, 4,838 heavy goods vehicle (HGV) journeys were eliminated from local roads, reducing mileage for logistics by an estimated 71,000 miles, saving 1,049 tCO2e and circa £2.94 million.[24]

Crown Workspace's Renew Centre where the team repair and remanufacture IT equipment and office furniture, donating items through their Giving Back initiative

IMPACT STORY

Recruiting experienced individuals is a common problem in the recycling and waste industry. **Amey** was struggling to find candidates with relevant experience in recycling electrical and electronic equipment from its Household Waste Recycling Centres (HWRC) in the south east. In response, **Recycling Lives**, a recycling contractor that creates social alongside environmental and financial value from it's activities, opened an HMP Academy in partnership with Amey and **HMP Dovegate**, giving offenders the opportunity to recycle television sets from Amey's HWRCs. In the first nine months, 133,000 television sets were recycled comprising: 441 tonnes of glass, 220 tonnes of metal, 172 tonnes of plastic, 68 tonnes of flat panel display (FPD) panels and 67 tonnes of circuit boards. The experience and skills which offenders gain support their rehabilitation and make them strong candidates for employment upon release. There are now plans to scale up the partnership, opening more HMP Academies in prisons operated by Amey.[25]

INCREASED EMPLOYEE ENGAGEMENT

Introducing culture and behavioural change around resource/waste management within organisations requires different stakeholders to be brought together – senior management, employees, suppliers and sometimes landlords and other tenants. This engagement can create a sense of a common purpose, engendering a sense of pride and helping to build relationships.

Waste is everyone's business, making it a good place to start in supporting the increasing desire from employees to get involved in environmental action at work.

Resource management and waste are firmly set in public consciousness.

DEMONSTRATING THAT YOU ARE A RESPONSIBLE BUSINESS

Employees, customers and investors increasingly scrutinise how companies operate. Resource management and waste are firmly set in public consciousness and waste is a visible and symbolic issue in the workplace. Setting bold public targets and demonstrating good practice in waste management sends a powerful message. It shows that a company assumes responsibility for the resources it uses and waste it generates and demonstrates leadership and forward-thinking.

PwC recognise that good waste management is fast becoming part of a company's social license and affects its ability to attract young talent. As one employee said, 'I want to do my bit for the environment, so it's important that I can recycle at work.'[26]

80%

Of young people (aged 18-22) entering the workforce ranked tackling single use plastics as important for employers, ahead of reducing electricity and water consumption.

37%

Of young people said that they would consider a potential employer's environmental responsibility when looking for a job. [27]

GETTING AHEAD OF LEGISLATION

From basic compliance to producer responsibility, businesses need to understand existing legislation and prepare for new. All businesses, regardless of size, have what is known as Duty of Care (see table below), meaning that they must ensure all trade waste produced is sorted, stored, transported and disposed of correctly. Failure to do so could lead to heavy fines or imprisonment.

Moving forward, the Resource and Waste Strategy for England (and those in Wales, Scotland and Northern Ireland) makes it very clear that better waste management is a must and that the Government plans to take action, including where necessary legislating, to ensure that businesses present recycling and food waste separately from residual waste for collection, and publish or make available information on what is recycled.[28]

DUTY OF CARE REGULATIONS

Businesses need to ensure:

- Waste stored is safe and secure, and held in containers with lids to stop waste escaping
- Each container is clearly labelled with the type of waste contained within
- Different types of waste don't contaminate one and other
- Waste is passed/transported by a licensed waste carrier
- A waste transfer note is created every time waste leaves your premises
- Waste is disposed of at a licensed waste disposal facility

For more information visit: **www.gov.uk/managing-your-waste-an-overview**

IMPACT STORY

In the first of three phases of 'Going Circular', **PwC** set a goal to eliminate landfill by reducing the amount of waste generated and replacing desk-side bins with a centralised segregated recycling hub. Anything that could not be recycled was sent to a 'waste to energy' provider to generate electricity, reducing the need for energy produced from virgin fossil fuels.

PwC sought to reduce the amount of materials used, such as paper. Multifunctional devices replaced desk-side printers, double-sided printing was set as default and a password was needed to collect documents: all helping eliminate unwanted printing (while improving information security). PwC also sent old archive files to be securely shredded and converted into paper handtowels, stocked in their washrooms. Then, in 2016, their confidential paper waste was securely shredded and recycled into new printer paper which PwC buy back for their offices. This allows the fibres to be recycled around 20 times – three times more than the industry average.

Key to success was collaboration with their national waste management provider, Suez Recycling and Recovery UK, to improve their methods for estimating waste volumes and weights, and to source appropriate collection and recycling services for their more than 25 offices in the UK. This included food waste from in-house restaurants and the practice floors being sent to anaerobic digestion or composting. Recently, PwC went even further, establishing collections of composite materials, such as crisp packets, pens and highlighters, for recycling by TerraCycle.

By the end of the first five years, in 2012, PwC achieved zero waste to landfill, reduced the amount of waste generated by 30% (minus 49% in the twelfth year of the programme, in 2019), and increased their recycling rate to 75% (90% in 2019).

PwC has measured the carbon footprint associated with their waste since 2010 and estimate that at that time it accounted for 8% of their total carbon footprint. By 2019, their actions had delivered a 52% reduction.

Lessons learnt

Setting up good waste practices takes effort, time and money. It is possible to demonstrate a positive business case for it, especially as landfill tax means that general waste incurs over £90 per tonne in gate fees. And reductions in materials procured can free up cash to allow new solutions to be implemented. For example, PwC estimate a cumulative saving of around £4.5m by reducing printer paper bought over the last 12 years – funds used to set up their recycling facilities.[29]

PwC replaced desk-side bins with centralised segregated recycling hubs

TURNING YOUR WASTE INTO WEALTH: QUESTIONS, ACTIONS AND STORIES

Since each organisation differs, so too will the opportunities to eliminate avoidable waste and turn remaining waste into wealth. Following the hierarchy of waste prevention, reduction, reuse and recycling – and then considering energy recovery and disposal – provides a good structure for prioritising action. Remember too to get the basics right – always check your Duty of Care, legal compliance and the credentials of your waste service providers.

WASTE PREVENTION AND REDUCTION

Design can play an important role in eliminating waste, by reducing material input and reducing waste from overspecification. In construction projects, for example, around 35% to 45% more steel is used than is strictly necessary. Tailoring products better to specific uses and ensuring they are fit for purpose can also help to prevent waste in use. For example, the average European car is parked 92% of the time and when the car is used, only 1.5 of its 5 seats are occupied.

When it comes to supply chains, waste can be reduced by focusing on the amount of material lost during production. Half the aluminium produced each year does not reach the final product but becomes scrap, while some 15% of building materials are wasted in construction[30].

80%

Of the impact of waste on the environment can be avoided if more thoughtful decisions are made at the production stage.[31]

Despite advances in technology in recent decades, the average life span of many products we buy and use in daily life is lower than it was 20 years ago.

The ideal starting point for companies is to identify opportunities to prevent or reduce waste being created. Unilever are producing 37% less waste than in 2008 and have achieved around €234 million in cumulative cost avoidance. They recognise that eliminating or reducing waste at source is the best way of cutting their environmental impact and creating savings. For instance, at many of their manufacturing sites, they require suppliers to use returnable pallets and containers, thereby limiting the amount of waste they need to manage.[32]

REUSE

Reusing products not only saves costs, but also helps to conserve the embodied energy and other valuable resources used to manufacture products, components, and materials. Furthermore, greenhouse gas (GHG) emissions associated with new material production and end-of-life treatment are reduced or avoided. As an example, a Splosh shampoo container can be reused more than 20 times, lowering material usage by more than 95%, and significantly reducing the energy required for packaging production. For clothing, doubling the amount of time items are worn has the potential to avoid 44% of GHG emissions by not letting valuable garments go to waste.[33]

In the UK nearly 33 million corporate garments are provided for use and around 90% (15,000 tonnes) goes to landfill or incineration each year[34]

There are a whole host of opportunities for businesses to remanufacture or refurbish and then reuse products such as furniture, IT and carpets themselves, or to donate them to charities or other organisations.

IMPACT STORY

Barts Health NHS Trust, in partnership with **Skanska**, worked with **Crown Workspace** to create a repair and reuse platform within the Trust, repairing furniture items that would otherwise have been disposed of. Crown Workspace collect furniture monthly, working closely with the estates and facilities teams to ensure reusable items are segregated and sent to Crown Workspace's Renew Centre. The scheme has helped to create a closed loop repair system, maximising the usable life of furniture items, and delivering cost and carbon savings. Over 2,000 items of furniture have been diverted for repair and reuse within five hospitals and the scheme has saved £20,500 in waste skip movements and £200k in procurement costs.

RECYCLING

Recycling requires much less energy input than the production of virgin materials. Steel recycling for example uses 10-15% of the energy required in the production of primary steel, while using 40% of recycled cullet in glass making reduces energy consumption by 15% and carbon emissions by 20%. Recycling one tonne of plastic could reduce emissions by 1.1–3.0 tonnes of CO2e compared to using virgin fossil feedstock.[35]

Recycling today should be all about quality. As with most industrial processes, the principles of 'quality in, quality out' applies. Most modern recycling facilities deploy a mix of high and low-tech sorting equipment, as well as manual picking lines for quality control.

It is therefore essential that clear, convenient and effective recycling systems, with separate bins and supporting communications, are established in the workplace – whether office or shop floor. Problems occur when recycling bins include items that they are not supposed to, such as food mixed with paper, or plastics mixed with food:

- Recycling materials that are spoiled will often be sent for disposal instead
- The quality of the materials can be affected, making it harder to process and reducing value
- The sorting process can be dramatically slowed down
- Equipment used for sorting items can be damaged.

The effectiveness of the workplace separation and collection system and the purity of waste and material streams are a strong determinant of the type of new products that can be produced, and of the on-going viability of recycling markets.

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

HRH THE PRINCE OF WALES ROYAL FOUNDING PATRON

IMPACT STORY

The award-winning 'Right Stuff, Right Bin' campaign was developed by **Viridor** working with **Greater Manchester Waste Authority.** It is still being adopted by local authorities and businesses across the UK to engage people at home and in the workplace with simple, effective and positive recycling messages. Campaigns have significantly increased participation levels and improved quality of recycling collections, even in 'hard to reach' communities. Searching online for 'Right Stuff, Right Bin' provides simple graphics and guidance for any workplace campaign.

It's worth being aware that, despite its many benefits, recycling of some materials often remains a challenge even to experienced waste service providers due to the patchy provision of recycling facilities in some areas and the volatility of secondary materials markets. As with virgin material markets, secondary markets are subject to peaks and troughs due to supply and demand variations. This is a rapidly evolving area, and new technologies and tighter regulation (such as Extended Producer Responsibility) should help markets and services to improve in the coming years.

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

HRH THE PRINCE OF WALES ROYAL FOUNDING PATRON

IMPACT STORY

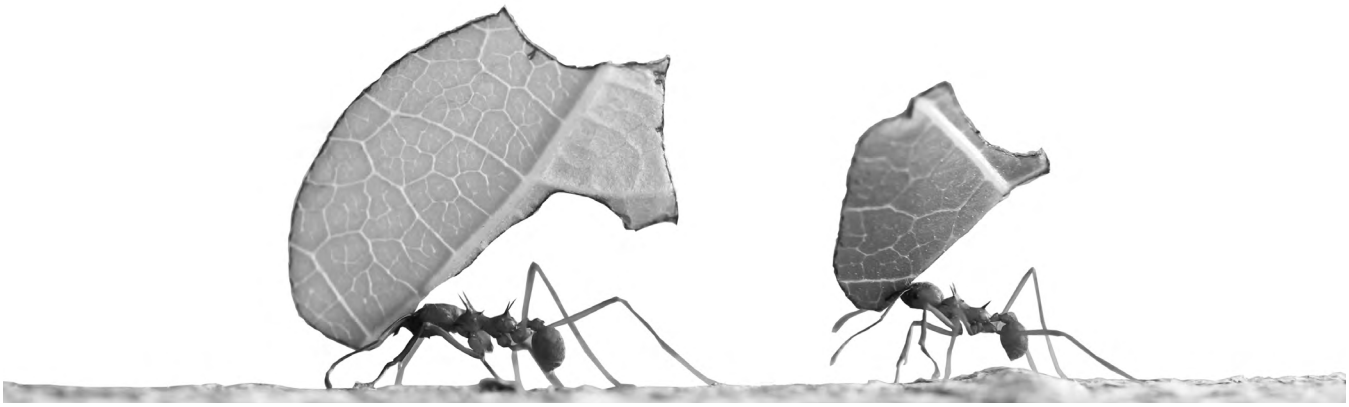
In 2017, **Knauf Insulation** began work with **Veolia** to create a state-of-the-art facility that gives a new lease of life to over 60,000 tonnes of used glass bottles and jars annually, as it cleans, separates and refines them into high purity raw materials to be used in the manufacturing of Knauf's energy-saving insulation solutions. Veolia's facility uses the latest technology to sort and separate glass at a micro-level with exceptional accuracy, delivering an ultra-pure glass cullet to ensure the highest possible quality of insulation. The machinery includes vibrating screens for size sorting, magnets to extract ferrous materials and eddy current separators for non-ferrous materials. The partnership has enabled Knauf to secure their glass supply and to maintain the recycled materials content in the Manufacture of their Glass Mineral Wool insulation solutions up to 80%.

ENERGY RECOVERY

Energy recovery facilities play an important role in the UK's waste and resource management mix. Some materials and waste streams cannot currently be recycled due to economic, environmental or logistical constraints (including on-going gaps in infrastructure and capacity in some areas).[36] Energy from waste provides a safe, efficient and cost-effective method of treating residual (non-recyclable) waste – converting waste into vital (and largely renewable) electrical power and heat for housing and business use, and into by-products, such as incinerator bottom ash, which are recycled for use by the construction industry.

LANDFILL DISPOSAL

Economic and regulatory drivers (including UK Landfill Taxes and legal limits or bans on landfilling of some waste streams) continue to discourage the use of landfilling for waste disposal, and as a result UK landfill capacity is becoming scarcer. However, there is currently a significant capacity gap in the provision of energy recovery facilities in the UK, and export options are limited. Landfill disposal therefore continues to provide a vital service for the disposal of residual waste in areas where there is no viable alternative, and for certain waste streams (i.e. asbestos) that can't be treated in any other way.



A BUSINESS GUIDE FOR GREATER RESOURCE PRODUCTIVITY AND RESPONSIBLE WASTE MANAGEMENT

1. GET INTERNAL BUY IN

Support at all levels, including senior managers, is essential to enable you to achieve your goals, and new recycling and waste programmes are often part of wider sustainability or business improvement programmes and policies.

It may help to link into existing wider initiatives, such as BITC's Waste to Wealth commitments,[37] building standards such as BREEAM or local recycling or environmental business networks. This can help you and your business feel part of a wider movement, build a clear business case (including social, environmental and business productivity benefits) and draw from the experience of others. Make sure you've identified the right people internally, such as your facilities managers, operations supervisors, caterers, etc. to ensure practical and lasting improvements.

Setting up a part of the business as a test environment, where you can assess employee reactions to changes (such as new waste hub configurations) and analysing impact and benefits before roll-out, will help in introducing new initiatives at scale. It also allows you to establish measurement mechanisms and estimate volumes of each new waste stream, which will help in discussions with new providers as you set up reuse and recycling arrangements.

2. UNDERSTAND YOUR WASTE STREAMS

Alongside getting buy-in, begin to undertake a waste audit. This will give you a detailed understanding of your waste streams, including where waste is being generated, how often and where it ends up. Measuring both the volume and weight of each material (paper, plastic, metals, etc.) provides a window into the composition of your waste and will help you to identify where you can have the greatest impact.

From there, you can work with your procurement teams and waste management company to identify where those waste streams are coming from and going to. You'll need to look 'upstream' to identify whether you can reduce the quantity of the original product (in quantity and size), or potentially switch to a different more durable product; and downstream to ensure that your 'waste' is being kept at its maximum value.

Sainsbury's has developed a robust methodology for measuring and reporting their operational food waste by weight. The new approach allows them to analyse unsold food at a product level in near real time. This gives them a better understanding of why and where food waste is generated, allowing them to take timely and appropriate measures to reduce food waste.[38]

3. DEVELOP A COHERENT WASTE STRATEGY WITH BOLD GOALS AND TARGETS

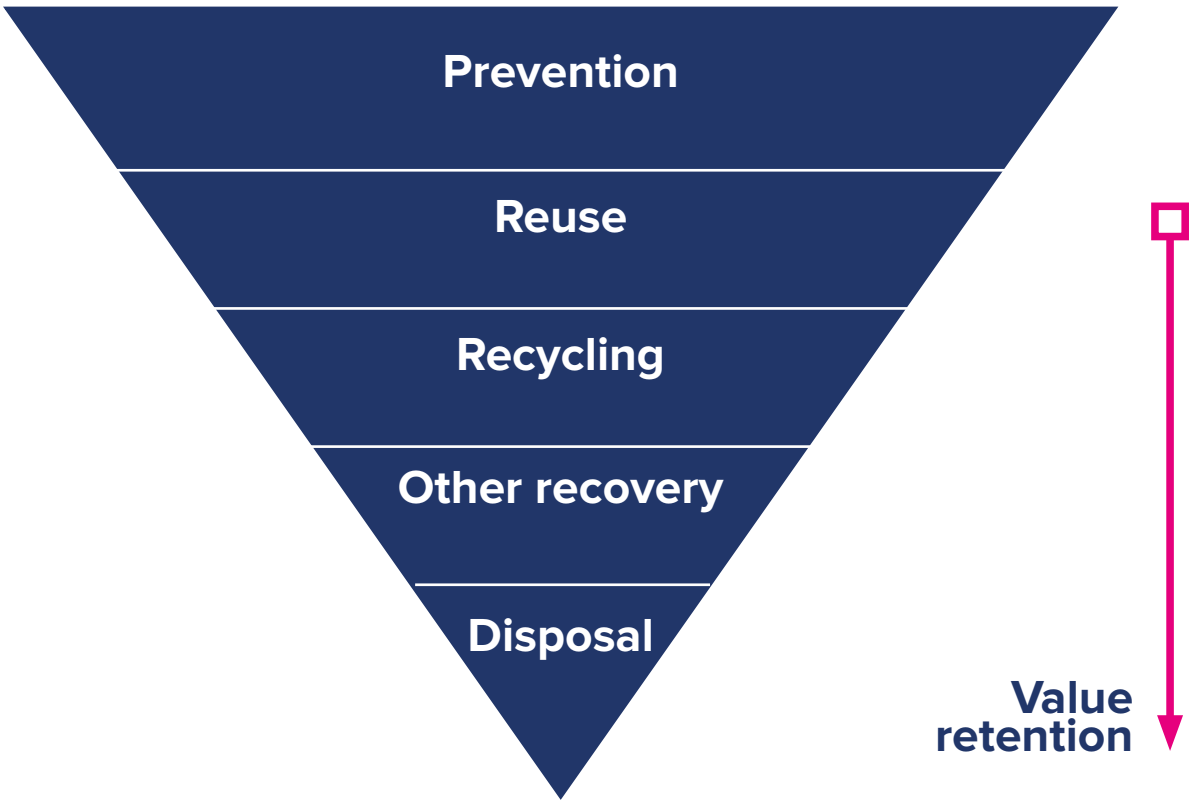
You then need to develop a coherent waste strategy to tackle the most significant waste streams and maximise your early results. Try and ensure that your strategy reflects the waste hierarchy, prioritising reduction then reuse and recycling.

Set yourself targets to help focus your organisation and colleagues on action and empower individuals to find solutions. You may find it helpful to set modest goals for the short term, whilst you test what's possible, and then increase the level of ambition. PwC began with a zero waste to landfill target for 2012 before setting a target of 100% reuse and recycling for 2017 and most recently sourcing circular solutions by 2022.

The Co-operative Bank has set an ambitious strategy to achieve zero waste to landfill by the end of 2020. Their aim is to recycle and recover as much material as possible, and then send anything not recycled to generate energy through incineration. By 2022 they aim to go further, by reducing the amount of waste they produce and eliminating incineration wherever possible.[39]

Sky are aiming to achieve zero waste to landfill at their main offices by 2020 by, for example, reducing the amount of paper used at their sites by increasing the use of multifunctional devices and paperless transactions and using 100% recycled office paper, recycling 100% of food waste at their main offices by composting and anaerobic digestion methods and being best-in-class with the efficient use of natural resources across their operations.[40]

THE WASTE HIERARCHY



4. WORK WITH YOUR WASTE MANAGEMENT SUPPLIER

A good recycling and waste management company will work with you and advise on what can be achieved with your business. Like any good supplier, they should be open and transparent when it comes to costs, available services, standards of service and end destinations of waste streams. Importantly, they should share your ambition.[41]

Asking the right questions can help to challenge your business and your supplier to begin to progress from waste to wealth.

1. How can I reduce the amount of waste my business creates?
2. Can you work with us on a waste audit to identify best opportunities to reduce, reuse and recycle?
3. Can we monitor/track what waste we are creating and where it is going for recycling or treatment?
4. How can you work with us to increase our recycling rates? Do you offer incentives to maximise recycling?
5. How many types of waste do you currently recycle?
6. Do your services include staff education, training and communications support?
7. Can our staff visit your Material Recycling or Recovery Facilities?
8. What accreditations do you hold?
9. What are you doing to minimise and reduce carbon emissions, and can you provide us with a carbon footprint of our waste management options?
10. Can you help me to work with my landlord/other tenants?

IMPACT STORY

Extentia partners with **Go Green** to work towards their target of zero waste to landfill. Go Green provides waste audits and reviews on an ongoing basis and offers a portal to enable clients to access their waste data, including recycling/recovery figures. Through working with Go Green, they have: made significant progress towards achieving their zero waste to landfill target, going from 75% to 99% of waste diverted from landfill; skilled their work force and supply chain in how to eliminate avoidable waste and prolong the life cycle of products; gained insight into repurposing products and materials with local community projects.[42]

What to look for in a recycling and waste management provider – more information online here: **www.viridor.co.uk/siteassets/document-repository/brochures/vd041465-ebook-opt.pdf**

IMPACT STORY

BT Openreach was experiencing service delivery problems with the collection of spoil and tarmac skips from across more than 60 sites - turnaround times were too slow resulting in overweight skip loads and missed visits. A lack of accurate data reporting also meant Openreach didn't have information to analyse and improve on these inefficiencies.

To address this, **Recycling Lives** conducted site audits to identify areas for improvement and introduced an online portal, enabling Openreach to book all exchanges, track all skip deliveries in real-time and download all compliance documentation for every waste movement – providing visibility of the services. Addressing key issues with no skips overweight, no missed visits and all exchanges delivered on time saved Openreach the equivalent of more than £2m a year on its waste spend, while increasing recycling rates to c.100% and reducing CO2 emissions.[43]

5. COLLABORATE TO CREATE WEALTH FROM WASTE

Once you have identified what needs to be done within your business, the next step is to identify the people that can help you push forward change and best practice.

Working with colleagues

Moving to a reduction and recycling-led system for your business waste will require support and engagement from people in specific roles, such as facilities or estates management, procurement, finance and cleaning teams. But there are also opportunities for wider employee engagement across the business. For example, engaging the right employees internally on waste, recycling, or material-specific (i.e. single-use plastics) audits and involving employees in the subsequent design, communication and implementation of waste management strategies, can improve broader employee engagement and maximise the chances of successful change.

Increasing staff awareness or nominating 'recycling champions' as part of your wider sustainability programmes can have a huge, positive impact on changing waste culture by getting staff involved in designing waste management in the workplace.

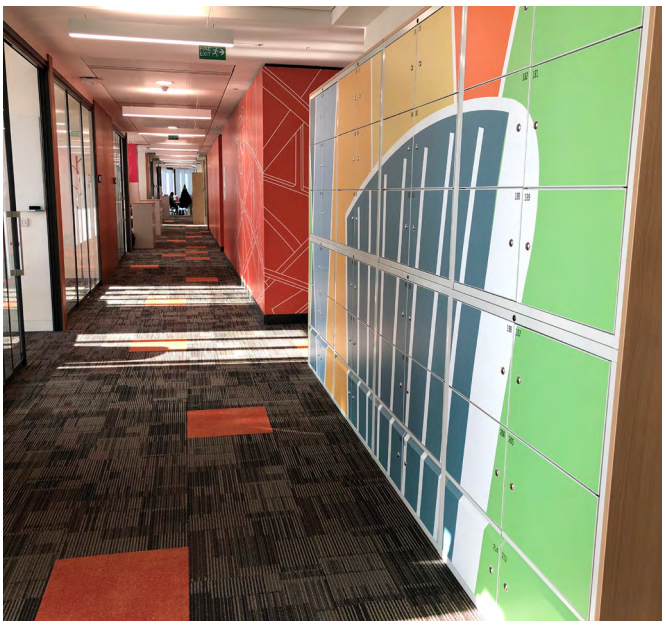
As part of its efforts to reduce waste, Interface established the QUEST programme, focusing employee teams on reducing waste in their factories using team learning and sharing best practices. Setting aggressive targets tied to compensation, and encouraging teams to share knowledge, and the best ideas globally led to sustainability taking hold across the entire business. It also paid dividends financially. The cumulative impact of the QUEST programme halved Interface's manufacturing waste cost and saved millions in avoided waste cost. Grundon Waste Management provides waste services to water filter cartridge specialist BRITA UK and between 2015-18 has recycled over 700 tonnes of BRITA's waste material. An early success was the setting up of a Green Team of waste champions. Five years on, the BRITA Green Team is still going strong helping with further savings. Every year the company holds an annual waste training day for staff, which has included visits to Viridor's Energy Recovery Facility and award-winning education centre at nearby Ardley, Oxfordshire.

Working with suppliers

As part of your responsible supply chain activities, engaging with suppliers to enable and encourage better waste prevention, reuse and recycling should be an important part of your waste to wealth plans.

As part of their Going Circular programme, PwC has collaborated with suppliers to buy items that are designed for disassembly and suppliers to remanufacture them. For example, in 2018, they teamed up with KI Europe to convert 2,200 old filing cabinets into new day storage lockers, reusing around 50% of the original materials, retaining 71 tonnes of steel and saving around 40% of the cost of buying new ones. Similarly, they have procured task chairs from OrangeBox for many years, enabling this staple of the office to be easily refurbished at the end of its first ten years, restoring it to excellent condition and re-guaranteeing it for a further ten years at a fraction of the cost of buying new ones.

PwC has also been working with Tier One asset management for over a decade, who securely data cleanse and refurbish their old laptops once they are no longer suitable for the firm's purposes, and resell them in the market, providing PwC with a revenue of up to £500,000 per year.[44]



PwC's Going Circular - KI Europe converted old filing cabinets into lockers, reusing around 50% of the original materials and saving around 40% of the cost of buying new ones

Working with communities

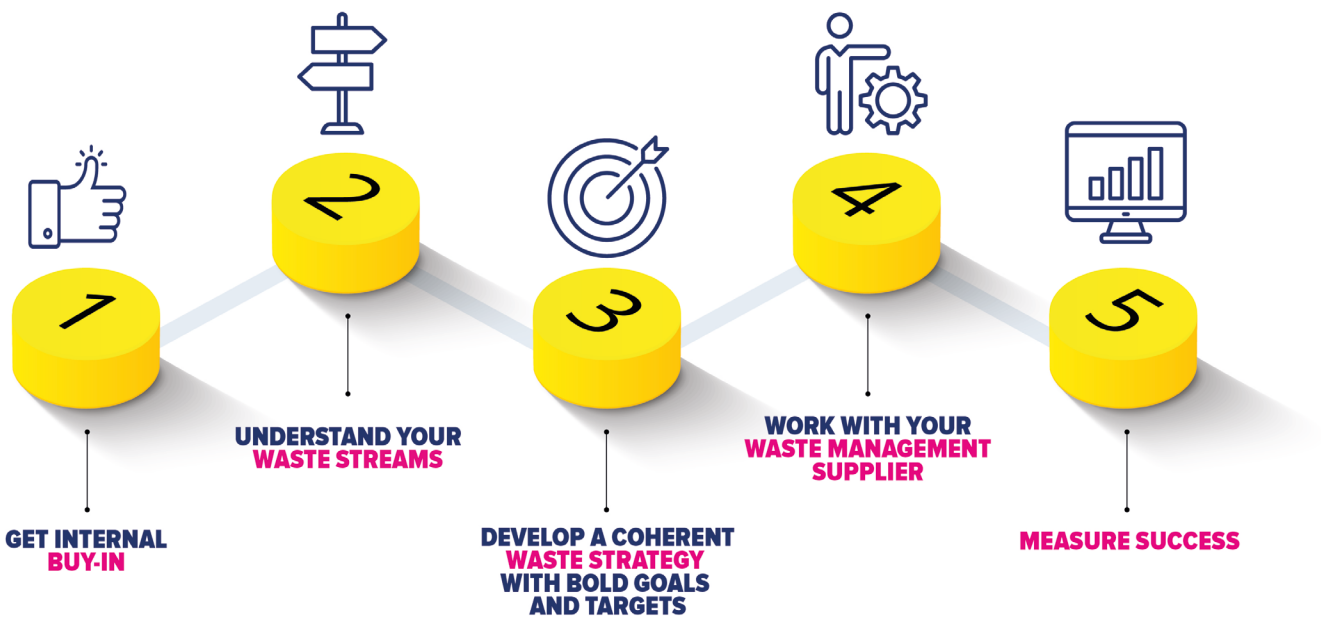
Getting involved in community recycling initiatives may help gain traction and engagement for your in-house recycling and waste management programmes. For example, linking up with local charity shops or enterprises may enable your employees to bring in pre-loved goods (such as toys, clothes, small electronics, or bric-a-brac) for reuse or resale (check that your scheme doesn't compete with local authority household recycling collections). Alternatively, there may be local business networks focusing on specific materials, such as office furniture refurbishment.

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

ROYAL FOUNDING PATRON

THE ROUTE FROM WASTE TO WEALTH



IMPACT STORY

Following the success of their 'Square Mile Challenge' to improve coffee cup recycling in London, **Hubbub** teamed up with **Leeds City Council** and leading businesses under the #LeedsByExample initiative. In a year they collected 1.2 million single-use coffee cups (as well as hundreds of thousands of plastic bottles and drinks cans) from workplaces, coffee shops, universities, shopping centres and yellow on-street cup bins. Instead of the cups going to waste they were delivered to **James Cropper** for upcycling and recycled into papers and packaging. A host of major brands, such as such Asda, Caffé Nero, Coca-Cola GB, Costa Coffee, McDonald's, Pret a Manger, Starbucks and Shell, have joined Hubbub's #LeedsByExample initiative to date.

IMPACT STORY

Grundon Waste Management worked with a leisure complex to tackle waste through engaging everyone involved in the waste process, including staff and managers at the leisure facilities and tenant occupiers. Grundon embarked on an education campaign with the centre's facilities management company and its cleaning staff, in addition to individual retailers and helped to streamline disposal and tackle contamination.

The ongoing awareness campaign is critical to future success. Grundon's team visits every single retailer at the complex on a regular basis, looking at their premises, what bins and waste bags they are using, carrying out waste audits and devising a simple handbook for each. This helps them understand how they can better manage and segregate their waste.

Grundon also runs training days for cleaners, taking them on a tour of the centre and showing them how important it is to search through bins to identify potential areas of contamination which can affect recycling rates.[45]

WHAT CAN AND CAN'T BE RECYCLED

It's worth liaising with your service provider to understand the best way to retain the value of the waste you have – whether through reuse or recycling. Whilst your recycling contractor may not be able to take all types of waste, there may be other specialist opportunities for those that are harder to recycle.

REUSE OPPORTUNITIES

- Carpets (for example visit www.interface.com/EU/en-GB/campaign/reentry/reentry-en_GB)

- Electronics – computers, mobile phones
- Food – for example, food past its 'sell-by' date, but still good for human consumption
- Office furniture – chairs, desks, tables, cupboards, filing cabinets, etc.
- Well-designed crates and pallets

RECYCLABLE
(Some require specialist treatment)

- Aluminium – highly valuable in most forms
- Cardboard – clean corrugated board (or 'Kraft grade') holds the highest value, whilst coated, mixed and used packaging diminishes in value
- Electrical items – if obsolete or damaged, these products contain highly valuable component parts and recyclable metals (and less valuable plastics)
- Food containers – pots, tubs and trays
- Food and organic waste - if kept separate and uncontaminated can be composted or used for energy recovery via anaerobic digestion
- Glass – major energy savings in recycling. Glass should always be separated by colour to maximise value and opportunities for 'remelt' recycling into new containers. Specialist glass products (such as toughened glass, windows and Pyrex) are less commonly closed-loop recycled due to its higher melting point.
- Hard plastics – such as buckets, non-returnable or broken crates, hard hats, car parts and plastic furniture components
- Plastic bottles - including for soft drinks and milk
- Paper – clean 'white' office paper holds the highest value, whilst heavily printed, glued or mixed grades are generally of lower value

(Make sure you are familiar with the legal requirements for different types of reuse - for more visit: www.gov.uk/government/publications/legal-definition-of-waste-guidance)

HARDER TO RECYCLE
(But possible if you find specific companies that can deal with them with clear environmental and economic benefit)

- Coffee cups
- Tetra packs
- Crisp packets, pouches and flexible packaging
- Pens

CURRENTLY UNRECYCLABLE

- Bubble wrap, cling film, non-'scrunchable' wrapping and most composite packaging (due to poor design for recyclability, glues, layering and mixed materials)
- Specialist waste – including medical items such as syringes and blood bags and sanitary products. (If mixed with recyclables, these will cause the whole load to be rejected – they are also potentially harmful for staff at recycling facilities)

USEFUL INFORMATION ON THE RECYCLABILITY OF COMMON GOODS AND MATERIALS

- www.gov.uk/government/publications/legal-definition-of-waste-guidance
- www.recyclenow.com/what-to-do-with
- www.wired.co.uk/article/recycling-myths-busted
- www.which.co.uk/reviews/recycling/article/how-to-recycle-in-the-uk

NB: these guides are aimed at householders, but provide good general guidance on the recyclability or otherwise of common goods and materials

PRIORITY WASTE STREAMS FOR A MORE CIRCULAR ECONOMY

The most carbon intensive common waste streams include food waste, textiles, metallic wastes, equipment, plastics and paper[46]. Any business waste strategy or programme could therefore look to reduce, reuse, recycle and recover these materials as a priority to work towards a positive impact.

FROM WASTE TO WEALTH: FOOD

In the UK, an estimated 10 million tonnes of food and drink are currently wasted post-farm gate annually, worth around £20 billion. Moreover, a fifth of UK greenhouse gas (GHG) emissions are associated with food and drink, mostly created during production (agriculture and manufacturing), but also from post-consumer waste.[47]

Sainsbury's developed the first store to be powered entirely by their unsold food. A quarter of their unsold food that is not suitable for donation to good causes is used as animal feed, with the remainder being sent for anaerobic digestion. Of this, the majority is backhauled to the depot before being sent to the UK's largest anaerobic digestion plant, run by Biffa in Cannock, Staffordshire. This facility turns food into biomethane gas, which is then used to generate electricity.

A 1.5km cable has been installed linking the plant to one of Sainsbury's nearby superstores allowing them to receive electricity directly from the plant. Sainsbury's is the first business to make use of this link-up technology and to close the loop. The Cannock power link is a small but pioneering contribution to decarbonizing the grid and means that this store will receive a guaranteed low cost and sustainable supply of renewable energy for the foreseeable future.[48]

'In 2013 we set ourselves the goal of achieving zero food waste to landfill and in working towards this ambition have been working with farmers and growers to reduce food waste in our supply chain, sending surplus food waste from our stores to our charity food donation partners and recovering energy from our waste. We have been inspired by stories of other companies' successes. In a similar vein, we hope that accounts of our own approach will encourage others to take action of their own. We recognize that our progress represents a step on the journey, but it is a journey on which we want others to join us.' **Mike Coupe, Group Chief Executive Officer, Sainsbury's**

FROM WASTE TO WEALTH: PLASTICS

We use many grades of plastic in our businesses, industries and households. Some of it is simple to recycle and reuse, such as clear plastic bottles and production off-cuts. Other types require more specialist treatment, such as plastic that is coloured, composite or contaminated with food or chemicals. What's more, plastic can take up to 500-1000 years to decompose if it 'leaks' into the environment. Finding a way to unlock its potential as a resource is an important step on the road to reducing its environmental impact.

Many leading companies, brands and recyclers have signed up to the UK Plastics Pact, led by WRAP, with its four clear targets to 2025:

1. Eliminate problematic or unnecessary single-use packaging through redesign, innovation or alternative (reuse) delivery model.
2. 100% of plastics packaging to be reusable, recyclable or compostable.
3. 70% of plastics packaging effectively recycled or composted.
4. 30% average recycled content across all plastic packaging.

Recycling and resource management company Viridor is set to open the UK's largest multi-polymer plastic recycling plant in Avonmouth, near Bristol, which will utilise energy and heat generated from its adjacent energy recovery facility currently in commissioning on the same site.

The new plastics recycling plant is a £65 million investment and will process 81,000 tonnes of PET, HDPE and PP plastic bottles, pots, tubs and trays from local authorities and commercial collections in its first year of operation, rising to 89,000 tonnes in year three. This will produce 60,000 tonnes of recycled polymers – in the form of quality flake and pellets - in its first year of operation, rising to 63,000 tonnes in year three, from 1.7 billion bottles, pots, tubs and trays. Viridor has teamed up with leading brands including Unilever, Procter and Gamble, Klockner Pentaplast, and others, in long-term supply deals to ensure a greater proportion of UK plastic packaging is kept within a more circular economy. Importantly, the new facility will incorporate an education and innovation centre and will form the focus for further research and development collaborations in plastics recycling.

FROM WASTE TO WEALTH: PAPER

Paper and card-based packaging still make up significant proportions of most municipal and commercial waste streams; and paper and cardboard recycling systems and markets are among the most established and mature of any material. Paper and card-based packaging, for example, has a recycling rate of between 70-80% in recent years. However, global paper markets remain volatile and quality is key to successful recycling.

However, millions of tonnes of wastepaper are still sent to landfill or incineration each year. This means that the industry has to continue to import fibre to meet its needs, with the associated environmental and economic impacts.

At BITC, all paper waste is shredded and collected by Paper Round, who process it locally and turn it into 100% recycled copier paper, which BITC repurchase. Similarly, a German paper mill, Steinbeis, turns PwC's paper waste into new, office grade paper which PwC buys back allowing it to be recycled around 20 times – three times more than the industry average.

Around 50 million tonnes of waste from electronics and electrical equipment is produced each year

FROM WASTE TO WEALTH: ELECTRONICS

E-waste (Waste Electronics and Electrical Equipment - WEEE) is the fastest-growing waste stream in the world with around 50 million tonnes produced each year, equivalent to all the commercial aircraft ever built.[49] Around 2 million tonnes are produced each year in the UK.[50]

Large appliances (e.g. ovens, fridges, washing machines) currently make up over 40% of WEEE but there are large volumes of other equipment such as IT equipment (mainly computers), TVs (over two million discarded each year), small appliances, electrical tools, digital watches, electronic toys and medical devices.

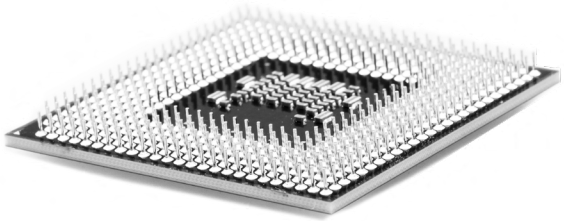
Such items contain a wide variety of materials e.g. an average TV contains 6% metal and 50% glass, whereas a cooker is 89% metal and only 6% glass. Other materials found include plastics, ceramics and precious metals.

As a result of this complex mix of product types and materials, some of which are hazardous (including arsenic, cadmium, lead, mercury and certain flame retardants) WEEE recycling poses a number of health risks that need to be adequately managed.

There are several steps businesses can take including looking for opportunities to repair and reuse equipment. BITC purchases its IT equipment from a specific brand and usually choose the same model which allows it to use parts from non-working laptops to prolong the life of laptops with minor faults. Regent Street Management Direct, a part of JLL, partnered with Crown Workspace to refurbish redundant computers and monitors to donate them to Centrepoint, a charity providing support for young homeless people.

Veolia have state-of-the-art facilities that can give flat screens and monitors a second, third or even a fourth life. At their RoboTele facility in Bridgnorth, Shropshire, they dismantle and recycle over half a million screens every year. The process uses robots to remove each screen without damaging the surrounding case. A second robot safely traps the mercury inside the tubes by injecting a wax mixture, before they are cut and removed for further recycling.

Using a shredding line, Veolia can extract non-ferrous metals, such as copper and aluminium, and any plastics are segregated by hand and sent to a recycler to be turned into plastic granules to make new TV frames. Finally, the circuit boards containing gold, silver and platinum are removed by hand and sent to a specialist third party to extract the precious metals and make new circuit boards for new TVs and computers. All of which enables Veolia to go full circle, closing the loop again and again.[51]



CONCLUSION

THE TIME IS NOW

With the UK Government's Resource and Waste strategy shifting responsibility for waste to producers and the Environment Bill making its way through Parliament this year (2020), the need for business to get ahead of the curve is accelerating. The drive is only likely to ramp up as public concern grows daily (85% of people are concerned about climate change).

Now is the perfect time to accelerate action to boost material productivity and eliminate waste. The benefits are significant with cost savings, employee engagement, brand enhancement and innovation all ensuing. This guide sets out the business case and gives practical steps to making rapid progress. And with so many case studies to inspire businesses, it should be possible to do so more quickly than ever before. Together we can turn waste into wealth. We look forward to hearing your stories.

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

HRH THE PRINCE OF WALES ROYAL FOUNDING PATRON

ACKNOWLEDGEMENTS

CONTRIBUTORS

We would like to thank Dan Cooke and Lewis Dyson from Pennon and Viridor for leading on researching and writing the Lifting the Lid on Waste Guide, drawing on their own expertise and bringing together the stories of many different organisations into one place. Particular thanks go to BITC members for their contributions – Martin Curtois from Veolia, Ann Beavis from Crown Workspace, Bridget Jackson from PwC, Kate Upton from Recycling Lives, Judith Batchelor from Sainsburys, and to Anthesis, Environment Agency, Environmental Services Association, Recycling Lives and WRAP.

ABOUT BUSINESS IN THE COMMUNITY

BITC is the oldest and largest business-led membership organisation dedicated to responsible business. We have a vibrant membership of hundreds of businesses, large and small, connected by the conviction their success is inextricably linked to society's prosperity.

ABOUT THE CIRCULAR ECONOMY TASKFORCE

BITC's Circular Economy Taskforce comprises a group of CEOs and other senior executives committed to delivering a high impact programme to bring the circular economy to life. Taskforce members include: Amey, Anglian Water, Anthesis, Arup, The Cooperative Bank, Environment Agency, European Metals Recycling, Interface, JLL, Lloyds Banking Group, Crown Workspace, PwC, Recycling Lives, Ricoh, Veolia, Viridor, Walgreen Boots Alliance and WRAP.

The Taskforce is drawing on the strength of the BITC network to implement an action plan focused on leadership, collaboration and practical action. The action plan is centred around three core areas of activity:

- Raising awareness and inspiring action
- Building a programme of practical collaborative action and innovation
- Promoting the policy frameworks and support needed to unleash opportunities

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

ROYAL FOUNDING PATRON

ENDNOTES

1 www.bitc.org.uk/make-the-waste-to-waste-commitment

2 www.jll.co.uk/content/dam/jll-com/documents/pdf/other/JLL-Building-A-Better-Tomorrow-2018-Full-Progress-Report.pdf

3 corporate.marksandspencer.com/sustainability/business-wide/waste-and-circular-economy#cc29d6cfd4d64f6d8c9592483192da03

4 www.gov.uk/government/publications/resources-and-waste-strategy-for-england

5 Government's Waste Prevention Programme for England, 2013 assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/265022/pb14091-waste-prevention-20131211.pdf

6 Digest of UK Energy Statistics (DUKES) 2019

7 Defra Digest of Waste and Resources Statistics May 2018

8 A Resourceful Future – Expanding the UK Economy. Eunomia Research & Consulting, for Suez. 2016.

9 Defra Digest of Waste and Resources Statistics 2018

10 assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784263/UK_Statistics_on_Waste_statistical_notice_March_2019_rev_FINAL.pdf

11 Defra Digest of Waste and Resources Statistics 2018.

12 Source: BEIS (2019) Final UK GHG Emissions 1990-2017

13 Rethinking Waste Crime: ESA and Eunomia 2017

14 www.rightwasterightplace.com/

15 www.ellenmacarthurfoundation.org/assets/downloads/Completing_The_Picture_How_The_Circular_Economy-_Tackles_Climate_Change_Executive_Summary_V3_26_September.pdf

16 www.green-alliance.org.uk/resources/More%20jobs%2C%20less%20carbon_%20why%20we%20need%20landfill%20bans.pdf

17 Friends of the Earth

18 Green Alliance: A New Direction for UK Resource Strategy 2017

19 www.esauk.org/application/files/5415/3589/6448/20170411_Planning_for_a_Circular_Economy_FINAL.pdf

20 Viridor

21 www.pwc.co.uk/corporate-sustainability/going-circular/pwc-going-circular-fourth-edition.pdf

22 WRAP

23 www.jamescropper.com/sustainability

24 Costain, 2019

25 Recycling Lives

26 PwC

27 ncass.org.uk/mobile-catering-home/articles/4-in-5-generation-z-workers-expect-employers-to-tackle-single-use-plastics/

28 UK Government Recourse and Waste Strategy

29 A c.30 page document that covers all three stages of PwC's journey, including detailed lessons and cost-benefit analysis is available at www.pwc.co.uk/goingcircular

30 UK Statistics on Waste, Defra, March 2019

31 www.wrap.org.uk/sites/files/wrap/Embedding%20sustainability%20in%20design%20%20-%20final%20v1.pdf

32 www.unilever.com/sustainable-living/reducing-environmental-impact/waste-and-packaging/going-beyond-zero-waste-to-landfill/

33 www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report.pdf

34 www.hubbub.org.uk/blog/corporate-unifomrs

35 www.ellenmacarthurfoundation.org/publications/completing-the-picture-climate-change

36 Government's Waste Prevention Programme for England, 2013 assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/265022/pb14091-waste-prevention-20131211.pdf

37 www.bitc.org.uk/make-the-waste-to-waste-commitment/

38 www.about.sainsburys.co.uk/making-a-difference/environment/waste

39 www.co-operativebank.co.uk/news/2019/our-strategy-to-achieve-zero-waste-to-landfill

40 static.skyassets.com/contentstack/assets/bltdc2476c7b6b194dd/blt9d8be1dee4d71382/591ab222a2dda6382f3c422f/environment-targets-to-2020.pdf

41 www.viridor.co.uk/siteassets/document-repository/brochures/vd041465-ebook-opt.pdf

42 Extentia

43 Recycling Lives

44 For more details see: www.pwc.co.uk/refresh-restart-reuse; www.pwc.co.uk/lockstockbarrel www.pwc.co.uk/goingcircular

45 Grundon

46 Zero Waste Scotland Waste Carbon Metric 2015 & Defra Digest of Waste & Recycling Statistics 2018

47 data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environment-food-and-rural-affairs-committee/food-waste/written/38003.html

48 Sainsbury's

49 www.itu.int/en/ITU-D/Climate-Change/Documents/GEM%202017/Global-E-waste%20Monitor%202017%20.pdf

50 www.hse.gov.uk/waste/waste-electrical.htm

51 Veolia

52 Jacobs, 2019

BUSINESS IN THE COMMUNITY

The Prince's Responsible Business Network

HRH THE PRINCE OF WALES ROYAL FOUNDING PATRON

Business in the Community
137 Shepherdess Walk
London N1 7RQ

www.bitc.org.uk