

# CIWM

www.ciwm-journal.co.uk

April 2018

THE JOURNAL FOR WASTE & RESOURCE MANAGEMENT PROFESSIONALS

# Local Authority Challenges

Is the weight of austerity getting any easier?

(turn to page 16)



**PLUS:**



Thinking Circular



"Apprentice-ships"



Are Exemptions Masking Illegal Waste?



With exclusive content from

**esa**

environmental  
services  
association



### You are invited...

**Wednesday 18th April, DW Stadium, Wigan**

CIWM's **FREE** 'Cleaner Communities' day will equip both the private sector and local authorities with up to date information on aspects of street cleansing. The day will adopt a relaxed approach, with this event's seminars focusing on procurement, data and fly-tipping.

This niche event is the perfect opportunity to update your knowledge and meet like-minded professionals involved in the world of street cleansing.

### Who Attends?

The day is free to attend for individual delegates, and is relevant to both local authorities and the private sector.

Examples of a range of delegate job titles from 2017 include;

- National Municipal Hire Manager
- Waste & Recycling Manager
- Neighbourhood Operations Manager
- Head of Refuse Division
- Waste Contracts Manager
- Contract Monitoring Officer
- Waste Contracts Manager
- Head of Environmental Services
- Waste Environmental
- Director of Street Scene Services
- Waste Officer
- Waste & Street Scene Manager
- Communities Manager
- Waste Minimisation Officer and Data Analyst
- Environmental Services Manager
- Waste Partnership Manager



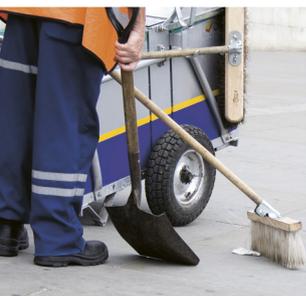
### Exhibitors

This event offers the perfect opportunity for companies to showcase products and services to key decision makers and influencers. Cleaner Communities would be ideal for companies looking to exhibit road sweepers, street cleaning equipment, municipal vehicles, street furniture, street lighting equipment, signage, vehicle hire, bins, waste recycling centres, waste management companies and local community street cleaning projects to name a few!

### Sponsorship and Exhibitions

To discuss how your organisation can get involved in this event, contact our Sales Manager Ginny Hunter on 01604 823346 or email [ginny.hunter@ciwm.co.uk](mailto:ginny.hunter@ciwm.co.uk).

Follow the buzz on twitter [#cleanercommunities](https://twitter.com/cleanercommunities)





The rise of the Teckal company...

18



Euromash... skills exchange across Europe

40



# CIWM

CIWM Enterprises Ltd, 7-9 St. Peter's Gardens,  
Marefair, Northampton NN1 1SX, UK  
t: +44 (0)1604 620426  
www.ciwm-journal.co.uk

Editor: Ben Wood

e: ben.wood@ciwm.co.uk

Deputy Editor: Darrel Moore

e: darrel.moore@ciwm.co.uk

Designer: Hamish Strachan

e: hamish@ciwm.co.uk

Sales Team Manager: Ginny Hunter

e: ginnny.hunter@ciwm.co.uk

Advertising Sales: Emma Simpkin

e: emma.simpkin@ciwm.co.uk

Subscriptions: Vickie Galer

e: publications@ciwm.co.uk

Technical Manager: Tina Benfield

e: tina.benfield@ciwm.co.uk

Membership Enquiries: Gabriel Mancho

e: gabriel.mancho@ciwm.co.uk

ISSN 1751-5602.

Printed monthly by Stephens & George.

Reproduction of this publication in part or in full is prohibited.

The opinions expressed in the CIWM Journal do not necessarily represent those of the Chartered Institution of Wastes Management. CIWM is published for the Chartered Institution of Wastes Management and the Environmental Services Association by CIWM Enterprises Ltd.



When you have finished with this magazine please recycle it.

## NEWS

- 04 News from the last month in the waste and resources sector, including a review of CIWM's Resource Conference Cymru.

## CIWM

- 08 Chris Murphy looks closely at the legislative proposals set out in the EU's waste package.  
12 CIWM President, Prof David Wilson, looks at China's waste journey over the last 40 years...  
46 ISWA National Committee member, Prof Ian Williams, reviews a joint centre 2016 New Member Network event...

## ESA

- 09 ESA chairman, Stewart Davies, highlights the power of competition when it comes to generating the best value-for-money outcomes for councils.  
10 The ESA Policy Pages.  
53 FCC Environment's Paul Taylor says Sir David Attenborough has succeeded where many of us in the sector have failed...

## OPINION

- 48 What doesn't kill you, makes you stronger, says Bristol City Council's waste lead.  
56 Lara Ayris says there are growing concerns that exemptions are being used to disguise illegal waste activities...

## LOCAL AUTHORITIES

- 16 Sarahjane Widdowson and Adam Read outline procurement challenges faced by councils coming to the market.  
18 Bristol City Council's Simon Anthony takes a look at the future of Teckal companies...  
20 Multi-occupancy properties: with no national standards for waste storage, can recycling rates improve?  
23 A look at the hurdles that lie ahead in reaching the EU 2020 recycling target.  
26 Victoria Hutchin looks at the challenges of two-tier working in local authorities...  
28 Linda Crichton outlines WRAP's collections consistency work.  
30 Paul Frith says at a time when budget cuts are biting hard, councils should be looking 10 years and beyond...  
32 Ricardo reports the early findings from an ESA research project into waste policy...

## EDUCATION & TRAINING

- 34 Refuse Vehicle Solution's Spencer Law shares his thoughts on apprenticeships.  
40 Martin Brocklehurst reviews the 2017 Leonardo skills exchange scheme, and looks ahead to this year's programme.  
43 The UK Sustainable Remediation Forum chairs look at risk-based land management...

## CIRCULAR ECONOMY

- 50 Gev Eduljee continues to look at the origins of the circular economy in the second of this two-part report...

## LEGAL

- 54 Denton's takes a closer look at the Government's 25-Year Plan for the Environment.

## RECRUITMENT & TENDERS

- 62 The pages for classified advertising and the directory.

**Business  
Partner Event**

Fast becoming one of the most-attend events in the waste and municipal sector, the next Southern Municipal Exhibition will take place on Thursday 21 June 2018.

For more information visit [www.municipal-expo.com](http://www.municipal-expo.com)

**Knauf Insulation and Veolia have officially open a new high-tech glass recycling facility in St Helens.** Each year, over 60,000 tonnes of used glass bottles and jars will now be given a new lease of life as the partners join forces to clean, separate and refine household glass, before transforming it into high-performance, energy-saving insulation solutions. Veolia's world-first facility uses the latest technology to sort and separate glass at a micro-level with exceptional accuracy, delivering an ultra-pure glass cullet.

**The Wood Recyclers Association (WRA) has published a guide for wood recyclers and reprocessors explaining how to report hazardous material if it arrives on site in waste wood loads.** The guide is being issued on the back of the on-going work of a waste wood industry group, led by the WRA, which is currently focused on ensuring that waste wood is classified properly at the front end and is processed into appropriate end uses.

**Panda Recycling has announced plans to include paper products coated with Smart Planet Technologies' EarthCoating – available in the UK on the reCUP recyclable cup range – into its existing UK and Ireland recycling operations.** Once collections begin, 100 percent of the recovered cup stock will be diverted from landfill and delivered to paper mills to be reprocessed into new paper items.

## Litter Fund: Government Backs Community Projects

**A RANGE of projects to tackle litter in local communities have been awarded funding by the Government, Environment Minister Thérèse Coffey has announced.**

The first round of funding sees a number of councils, charities, businesses, and public projects awarded almost £125,000 to take innovative steps to tackle littering in their communities.

The successful projects include developing bins to prevent seagulls from scattering litter on beaches and working with river users to reduce plastic getting into rivers, helping to tackle the issue of litter getting into our marine environment.

The funding builds on the Government's wider Litter Strategy for England, as well as the recent launch of the 25-Year Environment Plan, setting out how Government will protect and enhance our natural environment.

Welcoming the new projects, Thérèse Coffey said: "We want to be the first



generation to leave our environment in a better state than we found it and these innovative new projects will help reduce the amount of litter which so often plagues our streets, parks, countryside, rivers and marine environment.

"We have all seen the damaging effects that litter can have on wildlife and the environment, and I encourage people to do their bit, take responsibility for their litter and recycle more." ■

## Financial Health Of Councils Impacting Frontline Services

**THE FINANCIAL health of local authorities across England is getting worse, says a report from the National Audit Office (NAO).**

The report claims that despite greater freedoms to increase council tax bills and one-off short-term funds from government, councils are struggling to juggle higher demands and cost pressures against significant funding cuts of nearly 50 percent since 2010-11.

Central government

funding to local authorities has fallen by 49.1 percent from 2010-11 to 2017-18 – this equates to a 28.6 percent real-terms reduction in spending power.

Many local authorities are relying on using their savings to fund local services and are overspending on services – this is not financially sustainable, the report states. There was a £901m overspend on service budgets by local authorities in 2016-17.

Since 2010-11, 33.7

percent fewer households have their non-recyclable waste collected weekly, the number of bus miles subsidised by local authorities outside London has fallen by 48.4 percent, and the number of libraries has reduced by 10.3 percent.

Amyas Morse, head of the NAO, said: "The Government risks sleep walking into a centralised local authority financial system where the scope for local discretion is being slowly eroded." ■

## New Powers For Wales To Tackle Waste Crime

**NEW POWERS have been introduced by the Welsh Government in a bid to help Natural Resources Wales and local authorities tackle illegal activity in the waste sector – estimated to cost the Welsh economy up to £32m a year, according to the Welsh Government.**

Following a plenary debate, the National Assembly for Wales approved The Waste Enforcement (England and

Wales) Regulations 2018. These regulations are part of a range of measures aimed at tackling waste crime and poor performing waste sites in Wales.

Natural Resources Wales will now be able to act "quicker at problematic waste sites", for example, by locking the gates to stop more waste entering the site in order to prevent a risk of serious pollution or to stop pollution from continuing. ■

## Weightmans

### Draft EU Withdrawal Agreement

**THE DRAFT agreement with the EU concerning the UK's withdrawal from the EU was published the end of March.**

The only mention of waste and resources related concerns (other than radioactive waste) was in the protocol concerning the arrangements between Northern and Southern Ireland.

The crucial point to note is the date for the end of the transition period – 31 December 2020 – has now been agreed. That means from 29 March 2019 we will have a little over 20 months of the ongoing application of a hybrid mix of EU law and control.

The text of the agreement continues to provide that the CJEU shall have ongoing supremacy over the UK until the end of the transition period. Note the relevant articles in the draft agreement were put forward by the EU and are subject to change.

The UK and EU have agreed that any EU law introduced prior to the expiry of the transition period (unless expressly excluded) will apply to the UK. The UK's own Withdrawal Bill provides that any EU law in existence and which applies to the

UK on the date of departure will be flipped into UK law from the date of departure in order to maintain the status quo. The result is that UK will undoubtedly be subject to the package of circular economy measures shortly to be introduced by the EU. The EU Parliament is due to approve the package in mid-April. It will then be rubber stamped by the EU Council before being published in the official journal and coming into effect 20 days later. That would mean an approximate implementation window of December 2019 to May 2020.

The EU Circular Economy Package will form a benchmark below which the UK government should not dip. The difficulty is in the absence of the EU Commission post Brexit, unless we get a new EU Commission like watchdog, we will not have anyone to hold the Government to account over the targets contained in the Package. ■

*Simon Colvin, partner, head of environment team  
Weightmans LLP – the law firm of choice for  
businesses in the waste & resources sector*

+44(0)161 233 7356

[Simon.Colvin@Weightmans.com](mailto:Simon.Colvin@Weightmans.com)

@envlawyer

[www.weightmans.com](http://www.weightmans.com)

## £20m Funding For Plastic Waste Innovation

**IN HIS Spring Statement, Chancellor of the Exchequer, Philip Hammond, has launched a consultation on how the tax system might be used to reduce the waste caused by single-use plastics.**

He also announced £20m funding for businesses and universities to develop new technologies to help achieve the target of eliminating “avoidable plastic waste” by 2042. Mr Hammond (pictured) first announced plans in the November Budget to use the tax system to help deliver the target.

Mr Hammond said: “Single-use plastics waste is a scourge to our environment. From crisp packets to coffee cups, each year the UK produces millions of tonnes of waste which is neither recyclable nor biodegradable.

“We are determined to create an environment that is fit for future generations. By working with industry, innovators and the public I am confident we can bring about real change.”

Responding to the launch by the Chancellor of the Government's consultation



on single-use plastics, CIWM has said this is an important opportunity to explore how we can turn the tide on unnecessary plastic waste, but any proposals must be linked into a wider review of resources and waste policy.

“Plastics have many important functions and are part of modern life – but we have to stop using this versatile and highly durable material in single-use applications that squander a valuable resource,” said CIWM chief executive, Dr Colin Church. ■

**Allerton Waste Recovery Park has been declared fully operational in North Yorkshire and will set out to transform an annual 320,000 tonnes of waste from households in North Yorkshire and York into enough power for at least 40,000 homes.** This, however, could potentially be as many as 60,000 homes, based on Ofgem's most recent figures for a typical UK household's usage. It will also reduce landfill and increase recycling. The three-year build programme by infrastructure firm Amey reached its final construction milestone on 1 March when it formally moved into its 25-year operational phase following a period of rigorous independent commissioning and testing.

**Ending the UK's involvement in the EU chemical framework REACH could have serious consequences, says the Environmental Policy Forum.**

The Forum said the effective regulation of chemicals is critical for the economy, public health, environmental protection, the economy and animal welfare, and ending the UK's involvement in the EU chemical framework REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) could have serious consequences.

**Renewi plc, the international waste-to-product business announced that it is in discussions with Dumfries and Galloway (D&G) Council and other stakeholders to initiate the termination of its loss-making PFI operating contract.** The D&G PFI project is unable to address the needs of Zero Waste Scotland (ZWS) legislation that sets demanding new requirements regarding landfill diversion and recycling from 2021. Renewi has been working with D&G Council but a workable solution compliant with ZWS has not been found.

scriba

sponsored by

news in brief

**China intends to make manufacturers of electric vehicles (EV) responsible for collecting and recycling spent batteries as part of its efforts to tackle mounting waste in the sector, according to new rules.** China aims to become a “dominant global producer” as it bids to curb vehicle emissions, boost energy security and promote high-tech industries. But with lithium battery production already up by half in 2017 and waste set to hit as much as 170,000 tonnes this year, the government’s aim is to improve its recycling capabilities.

**The UK’s anaerobic digestion (AD) industry has welcomed the endorsement of EU ambassadors for the four legislative proposals of the European Union’s waste package, and called for the UK to sign up to the targets included in the proposals irrespective of its future relationship with the EU.** The agreed legislative proposals establish binding waste reduction targets and updated rules to decrease waste generation in all EU countries, including a target for member states to recycle 65 percent of municipal waste by 2035.

**The Welsh Government has announced over £7.5m to support local authority improvements in recycling services in 2017/18.** The funding will be administered under the Collaborative Change Programme, which provides specialist support to local authorities by awarding capital grants where councils want to change services to improve overall performance and to align services better with Welsh Government policies. The money is used to make improvements to the collection and sorting of recycling in order to help councils reach recycling targets.

## UK Overestimates Plastic Recycling By A Third – Eunomia

**A NEW Eunomia report claims the UK “consistently overestimates” how much of the plastic packaging waste it produces actually gets recycled.**

Official Defra statistics published recently suggest that in 2015 UK households and businesses produced 2.26m tonnes of plastic packaging waste and recycled almost 39 percent, well above the current EU target of 22.5 percent.

However, by analysing what is known about the composition of waste in the UK, the new Eunomia report “Plastic Packaging – Shedding Light on the UK Data” claims that the real amount of plastic packaging waste produced is much higher – around 3.5m tonnes.

Assuming that the amount reported as

recycled is correct, it seems the real recycling rate may be 9-10 percentage points lower than the Government claims, Eunomia says.

If this is the case, the UK may well have failed to meet its recycling targets under the EU Directive in the years 2008-2012.

The report goes on to identify where problems occur in the system. One major issue highlighted is that when material is “placed on the market” it is clean, dry and free from extraneous material such as labels. However, when the quantity collected for recycling is measured, the weight is likely to be inflated by the inclusion of moisture and contaminants.

That might be the source of some of the over-reporting, Eunomia says. ■

## UK Failed To Meet Household Battery Collection Target

**PROVISIONAL FIGURES, published recently by the Environment Agency highlight the UK’s failure to meet its 45 percent collection target for household batteries in 2017 – a shortfall of 0.12 percent.**

Robbie Staniforth, policy manager at Ecosurety,

saying it is “extremely disappointing” the UK has for the second year running missed its target.

“The small producer exemption, which has always existed, means no-one is responsible for recycling these batteries.

“Until this issue is resolved, the UK will

continue to miss the targets set. There was a fairly even mix of household versus non-household batteries collected last year, which is a step in the right direction, however, these figures still mean that, overall, battery recycling in the UK is in decline, which is concerning.” ■

## Government Rejects Latte Levy In Favour Of Voluntary Action

**THE GOVERNMENT has “refused to take any decisive action” on the complex issue of coffee cups and has instead chosen to rely on voluntary commitments, the Environmental Audit Committee (EAC) says.**

The EAC has also announced that it has asked the National Audit Office to inquire into the Government’s oversight of the packaging recovery note scheme, to further scrutinise UK recycling policy.

EAC chair, Mary Creagh MP, said: “The UK’s throwaway culture is having a devastating impact on our streets, beaches and seas. Our report recommended practical solutions to the disposable packaging crisis. The Government’s response shows that despite warm words they plan no real action.”

The Committee’s key recommendation was the introduction of a 25p levy on the use of disposable coffee cups, to reduce their use and help to fund recycling measures.



The Government response suggests that coffee shops should offer discounts for customers with reusable cups, instead of a levy on disposable cups. In its inquiry, the Committee heard that a charge – such as that introduced on plastic bags – was the most effective way to change consumer behaviour.

During the inquiry, the Environment Minister Dr Therese Coffey MP said Defra’s Voluntary and Economic Incentives working group would examine coffee cups for their next project, but the Government response to the report makes no mention of this. ■

# Wales To Consider 80% Recycling Target By 2035

**THE WELSH** Government could set a target for councils to recycle 80 percent of its municipal waste by 2035, according to Hannah Blythyn AM, Welsh Minister for Environment, speaking at the CIWM Resource Conference Cymru in March.

The event had as its theme "The Welsh Green Economy" and in her keynote address the minister spoke about Welsh Government's current plans to maintain progress towards a more sustainable future and the development of the Welsh green economy through the new Economic Action Plan.

She told delegates how Wales will retain a focus on generating high-quality recycle to "get our own house in order", and that the country will also be looking into the potential impact of the Chinese waste import restrictions on Wales.

The Minister (pictured) announced the Welsh Government is also working on an "enhanced" behaviour change project to help further reduce the amount of waste that is recyclable being sent to landfill, and that it will this year publish an independent evaluation of its waste strategy in order to "take stock".

This review will include looking at a potential target for councils to recycle 80 percent of municipal waste by 2035, and will also look into alternative targets around carbon and specific wastes. The Minister announced the Welsh Government will also be looking at potentially updating current local authority recycling targets to align with the new EU definition of municipal waste.

The Minister also spoke about Wales' recent recycling success and how it is investing in recycling services to enable local authorities to continue to deliver improvements:

"In Wales we take our duty to achieve sustainable development very seriously. We've extended our lead as the best household waste recycling nation in the UK to 12 percent above the UK average, putting us second in Europe and third in the world."

"I also recently confirmed I am



awarding over £7.5m pounds to support improvements in recycling services throughout Wales, which will help achieve our goal of zero waste by 2050."

## Extended Producer Responsibility

One of the hot topics for the day was Producer Responsibility, starting with Wales' Plastics Route Map and exploring what actions Welsh local authorities can take to drive the circular economy. Insight from expert speakers from WRAP and the plastics industry was complemented by practical approaches for local authorities from Nigel Wheeler, director of highways and streetcare services at Rhondda Cynon Taf CBC.

Looking at opportunities for Wales to further develop its own environmental legislation, particularly in the context of Brexit, the second session explored the role of extended producer responsibility (EPR) and how Wales might use fiscal measures to incentivise more sustainable product design and stewardship.

EPR should "shift" the financial burden from taxpayers to producers and consumers – not necessarily increase it – and also incentivise design and use of recycled content, said Dr Chris Sherrington, head of environmental policy and economics,

Eunomia. He said EPR can't reduce consumption and prevent waste... to do that you need a tax.

The future of residual waste was next, with a session exploring whether Wales has sufficient infrastructure for the future, the potential impact of Brexit on waste RDF exports, and how the new Landfill Disposals Tax will work in practice.

Stuart Hayward-Higham, technical development director, SUEZ R&R UK spoke about the need to consider resilience around residual waste, and Jenna Harris from the Welsh Revenue Authority answered tough questions about what will happen to the money generated from the new Landfill Disposals Tax – details regarding the communities scheme that will distribute the money will be published soon, it was revealed.

The day finished with two interactive workshops. Gearing up for new regulations expected under the Environment (Wales) Act 2016 Part 4 (Collection and Disposal of Waste Regulations), the first looked at best practice in segregation and separate collection from businesses, while the second focused on planning, capacity and decision making in the face of current uncertainty about the future. ■

# The Complete Package?



CIWM Fellow and deputy chief executive, **Chris Murphy**, looks at the four legislative proposals of the waste package, as recently endorsed by EU ambassadors

In late February the EU ambassadors endorsed the provisional agreement on the four legislative proposals of the waste package previously reached with the European Parliament prior to Christmas 2017. The ambassadors believe the waste package will lead to more recycling of waste and contribute to the creation of a circular economy. It will improve the way waste is managed, as well as encourage the reuse of valuable material embedded in waste.

This, in effect, started the process of amending the Waste Framework Directive and introducing a more circular economy approach to resource and waste legislation. This endorsement was quickly followed by unanimous approval from the EU Environment Committee and, in the next two or three months, the revisions are likely to be adopted by the European Parliament and, finally, by the European Council before summer recess.

The proposals include legally binding targets for waste recycling and the reduction of landfilling with fixed deadlines. These targets will increase the share of municipal and packaging waste, which is recycled, with specific targets for the recycling of materials used in packaging. The rules also include targets for reducing the amount of municipal waste that is landfilled. In general terms, none of the above is particularly new and already exists separately in the Waste Framework, Landfill and Packaging and Packaging Waste Directives. What is new are some of the targets and the change of focus from "end-of-pipe" to "top-of-hierarchy", circular thinking and resource efficiency, rather than entirely on waste collection and treatment and/or disposal.

## Further Scrutiny

SOME TARGETS bear further scrutiny in that they either appear less challenging or they are less prescriptive than previously. There is a specific landfill reduction target and the peculiar statement that member states "shall endeavour" to ensure that as of 2030, all waste suitable for recycling or other recovery, in particular in municipal waste, shall not be accepted in a landfill, except where landfill delivers the best environmental outcome.

Mindful of the large differences that exist between member states, with respect to their waste management performance, particularly as regards recycling of municipal waste, the

changes include a more flexible approach to target setting. Member states which, in 2013, had a recycling rate of less than 20 percent of their municipal waste or landfilled more than 60 percent of their municipal waste, should be allowed to decide to extend the time for complying with the preparing for reuse and recycling targets established for 2025, 2030 and 2035.

This pragmatic approach reflects the average annual progression rates observed in member states over the past 15 years, those member states in the above bracket would need to increase their recycling capacity at levels that are well above past averages to meet the stated targets.

So to ensure that steady progress towards the targets is made and that implementation gaps are tackled, member states that are given additional time should meet interim-targets and establish an implementation plan based on detailed criteria. This may lead to a two-tier EU, but it does adopt a realistic approach and continues the practice of derogation from existing directives.

There are many other issues addressed in the draft that are worthy of support – some have a clearer direction than others, but at least they are being considered rather than ignored or left to member state interpretation. Among that number there is some clarity around definitions of municipal waste, end of waste, by-products, recovery, extended producer responsibility and my favourite, recycling.

They propose to lay down more precisely the rules according to which member states should report what is effectively recycled and prepared for reuse and can be counted towards the attainment of the targets. The calculation of the recycling targets should be based on the weight of municipal waste that enters the recycling operation. Perhaps, with such precise rules and definitions, we will truly be able to consider comparative figures across the EU.

Other issues included in the draft, which for reasons of space I won't expand upon now, include: facilitation of food donation, reducing food losses, encouragement for remanufacturing, prevention of waste, fighting litter and fly-tipping as well as plastic in the marine environment.

If you think this is all a little late given UK/EU relationships and Brexit, then relax... the UK Government has indicated that the revisions to the Waste Framework Directive *are* likely to be implemented post-Brexit. ■

# The Power Of Competition



ESA chairman, **Stewart Davies**, introduces the Association's new campaign, which looks to highlight the power of competition to generate the best value-for-money outcomes for councils...

This month ESA has launched a new campaign, "Delivering best value through competition". This challenges some of the myths which have built up around the outsourcing of waste services and highlights the advantages that councils can gain when they use the power of competition to generate the best value-for-money outcomes. In particular, the market is best placed to deliver cost savings, innovation and increased flexibility in service delivery for councils, in contrast to the perception within many local authorities.

It is no surprise that councils across the country are examining all their options during a period of unprecedented financial challenges for the local government sector. Councils are under severe pressure to maintain service levels for their residents, improve recycling performance, whilst reducing spending. ESA agrees that councils are best-placed to decide how they want to manage these trade-offs, but we believe that it is the market which is best placed to deliver value for money.

There are two main reasons that some local authorities are looking at in-sourcing their services, either directly or through a "Teckal" exemption from the Public Procurement Directive: savings and flexibility.

Up-front savings are gained by avoiding the need to go through a procurement process with associated advisors' fees, while it seems self-evident that not having to pay a contractor's profits would also generate ongoing savings for a council. This however ignores the efficiencies which a market-led solution will deliver over the life of a contract.

Projected savings from in-house and Teckal solutions not exposed to competition are often an illusion. They don't account properly for risk transfer under an outsourced solution, and the assumptions used to benchmark against the market comparison are often inaccurate. The only way to genuinely test solutions against the market is through an open tender process, the bid costs for which can be recovered from the winning bidder when factored into the procurement process.

A big reason many local authorities are looking at in-sourced/Teckal services is that these offer greater flexibility.

The fixed (often up to 10 years) term of a contract combined with the continuously changing nature of waste legislation makes an in-house option appear attractive as the authority would retain greater control of the services.

But the biggest constraint to changing services is the fixed investment which must be made in collection vehicles. An authority with an in-house service is equally, if not more, constrained by its vehicle investment. An experienced contractor with a portfolio of multiple contracts is able to take advantage of economies of scale to push down costs and has the flexibility to move resources, including vehicles, between its contracting authorities to adapt to changing requirements.

ESA's members are keen to work in partnership with the local government sector and to offer positive solutions to councils' biggest concerns and challenges. The increasing pace of change and high levels of uncertainty facing the waste and resource management sector mean that councils are often right to be hesitant before entering into long-term fixed arrangements.

Our members are keen to address these concerns and to explore more flexible contracting arrangements. These could include shorter fixed contract terms with options for extension as the contractor delivers the authority's specified outcomes. Or two-way symmetrical options for no-fault contract termination after a minimum term and suitable notice period.

The market for waste services is constantly evolving. It provides a great opportunity for councils to explore innovative new solutions to procuring and contracting, which can meet their pressing needs if designed well through a partnership approach.

ESA's members have a wealth of specialist experience in delivering waste and recycling services for councils under varying local conditions around the country. By learning from similar arrangements provided for councils elsewhere, they are able to innovate and drive efficiency in their service provision. By working together, the public and private sectors can find the innovative solutions councils need to meet the unprecedented challenges they face. Let's work in partnership to deliver best value through competition. ■



# Policy Round-Up

## ESA Executive Director's Update: Jacob Hayler

**B**y the time you read this, the National Infrastructure Commission (NIC) may have published its research into potential pathways for residual waste infrastructure. This is due to include an analysis of the possible impacts on residual waste which would arise from greater separation of organic material, and also of plastics.

It seems likely that the NIC will recommend to the Government that more plastic should be separated from the residual waste stream. The main driver of this would seem to be the assumption that fossil-based plastics should not be sent for energy recovery due to negative carbon impacts. Of course, during the assessment's long timeframe alternative models could develop, such as a largescale shift towards bio-based polymers for which energy recovery would be the best option, or the development of alternative treatment technologies for plastic which do not require upstream separation.

These sorts of options will be considered in the third wave of the Industrial Strategy Challenge Fund announced last month, in which a bid is being developed (and led by the Natural Environment Research Council) to drive innovation in a circular economy for plastics. But, rather than looking at alternative long-term futures, the NIC has instead focused narrowly on tweaking the PRN system in a bid to drive up shorter term recycling rates for plastic packaging, and has held industry workshops to assess how this might be done.

The NIC's 2050 timeframe is too long term to consider in one hit. Instead, the NIC needs to think about our immediate treatment infrastructure gap and recommend that the Government provides the stability to support investment in new energy recovery facilities. Only in this way can we hope to close the capacity gap and prevent significant quantities of waste ending up without a home.

Once we have addressed our current infrastructure

shortfall, we can then think about a post-2030 world where we might transition to innovative new technologies for recovering plastics from our waste.

Elsewhere in the Journal (page 16) this month, Ricardo Energy & Environment discusses research it has recently conducted for ESA

into the interventions and costs required to drive recycling rates up to the levels envisaged in the EU Circular Economy Package. As part of this research, Ricardo held a workshop last month which included participants from across the local government landscape, as well as operators and regulators.

Unsurprisingly, the consensus view was that 65 percent municipal waste recycling would be an extremely challenging target, which would necessitate heavy and potentially costly intervention to be achieved. The main questions and ambiguities are around how high recycling rates can go before punitive additional costs kick in, and where those costs might fall.

This is important research for Defra to pick up as it prepares its Resources & Waste Strategy, a key element of which will be whether the UK signs up to longer term weight-based EU recycling rates, or signals a transition towards something smarter which focuses on quality and value.

It is clear in my mind that this is an opportunity for a Brexit win, which benefits the UK both economically and environmentally. Arbitrary weight-based targets distort behaviour and lead to poor outcomes. We must be able to come up with something better. ■



## Changes To Landfill Tax legislation

LANDFILL TAX legislation contains notorious ambiguities that have resulted in a number of disputes, many of which have centred on whether or not waste that is used within a landfill for structural and engineering purposes should attract the tax. This is clearly in no-one's interest. It is costly and time-consuming for both parties, and waste management companies want a clear tax regime that enables them to achieve compliance and operate business with a degree of certainty.

Back in 2016, HMRC consulted on introducing changes to the legislation that would improve clarity and certainty for taxpayers. The main change was to move away from a description of "waste" towards classifying all material disposed of at landfill site as taxable, unless it is listed as exempt.

Alongside this, HMRC has also consulted on bringing illegal waste sites under the scope of the landfill tax legislation so that following a conviction, criminals will have to pay tax on their illegal disposals on top of a fine.

A number of delays ensued, but earlier this year, the draft legislation was published for consultation for introduction on 1 April 2018. ESA members welcomed the changes as a step in the right direction, particularly in relation to illegal waste sites, but believe that much of the ambiguity around taxable disposals remains.

One remaining issue is that the tax status of "fluff" layers used for engineering purposes is still unclear. This could be helped by explicitly listing this material as either exempt or taxable. Given that this has been the subject of a number of disputes, it remains to be seen whether the changes to the legislation will have the desired effect. ■

## Waste planning In London

THE MAYOR of London recently consulted on proposals for a revised London Plan, the spatial development strategy for the Greater London region. Commenting on the waste and recycling policies of the draft Plan, ESA broadly commended the aspiration to set out an ambitious, long-term framework for the sustainable management of London's waste, but noted a number of policy areas which would benefit from review and strengthening in the final, published Plan.

Residential encroachment continues to pose challenges for the waste management industry and with space at a premium in London ESA Members report that new housing development is being built (or planned) closer to existing waste management facilities (or allocated sites) than ever before. ESA therefore welcomed supportive plan policies for the safeguarding of waste sites.

However, ESA questioned the data assumptions used to underpin some key areas of policy. Forecasted waste arisings and Borough apportionment targets fail to account for London's *total* waste (contrary to national planning policy guidance), which in practice could lead to an under-estimate of the waste management capacity required to be delivered by local plans. Furthermore, the Plan's 65 percent recycling target is not only at odds with industry assumptions but could exacerbate regional imbalances in residual waste treatment capacity.



While the policy approach to planning for EfW is less hostile than that adopted by the Mayor in the draft Environment Strategy, the Plan nonetheless remains noticeably silent on the framework needed to deliver the associated heat network infrastructure if EfW is to fully realise the benefits of CHP.

ESA would welcome stronger recognition of the strategic and essential role of waste management in supporting London's predicted housing, population and economic growth and with that in mind there is scope within the Plan to more closely integrate waste policy with other such policy areas. ■

## ESA Opposes Reductions In 2018 Weee Collection Targets

RESPONDING TO a consultation in early March, ESA expressed strong opposition to proposals from Defra to reduce the 2018 WEEE collection targets by an average of 14 percent compared to those set in 2017, down to a level only two percent higher than the total recorded as collected in 2017.

In its consultation response, ESA argued that the main reason for the shortfall in WEEE collections in 2017 compared to the 2017 targets was the continuing significant leakage of WEEE from the system which goes unrecorded. In ESA's view, much of this leakage is accounted for by illegal activity, including illegal exports of EEE and WEEE. Another source of leakage is WEEE that is discarded and subsequently prepared for reuse. If

properly checked and certified, this is a good outcome, but the tonnages concerned often go unrecorded.

In the view of ESA and its members, the correct response to this situation is not to reduce WEEE collection targets to the level of 2017 collections, as proposed by Defra, but to hold 2018 targets at broadly 2017 levels while tackling the problem of illegal leakage and non-recording of WEEE. The tonnage of discarded EEE (WEEE) that is legitimately being dealt with through reuse (either in the UK or exported) should be clarified so that regulators can concentrate on the balance which is the illegally exported material.

ESA's consultation response urged Defra to use the proceeds of the 2017 Compliance Fee to fund a national campaign to tackle the problem of WEEE leakage caused by illegal activity.

ESA has consistently argued that the WEEE Compliance Fee should be set at a level which incentivises PCSs to meet their obligations by collecting more WEEE, rather than by paying the fee. Otherwise there is no realistic prospect of the

UK meeting the higher WEEE collection target for 2019.

In ESA's view, unless there is consistency of WEEE collection targets, investment into current WEEE treatment facilities and new developments will be limited due to the uncertainty this creates. There would be a risk that the UK would have insufficient capacity to recycle the desired amount of WEEE to meet the EU-derived WEEE targets for 2019 and beyond (assuming they are kept in place after the UK leaves the EU).

A final decision by Defra on the 2018 WEEE collection targets is expected before the April edition of the *CIWM Journal* is due to be published. ■

### Why Not Join ESA?

If you are interested in becoming a member of ESA, either Full or Associate, please contact Toni Waters, ESA Membership Officer, on 0207 591 3206, or [t-waters@esauk.org](mailto:t-waters@esauk.org), and she will be happy to discuss the benefits of ESA membership, and the options that are available to you.





# China: Coming Full Circle

**CPD  
APPROVED**



In the wake of the current China-induced recycling crisis in the West, CIWM President, **Professor David Wilson MBE**, recounts his personal perspective on China's journey in waste management and recycling over the last 30-40 years and moving forward...

I have been an avid China-watcher since I lived in Hong Kong in 1982-83, when I led a consultancy team developing the decision support system used in the preparation of their first waste disposal plan. I was a regular visitor to Hong Kong, and occasionally to mainland China, for the next 20 years, and since 2000 have supervised numbers of Chinese Masters students at Imperial College London on their projects.

So, when I was invited as CIWM President to an East Anglia Centre Open Meeting on the current "China recycling crisis", I offered to give some informal opening remarks based on that personal perspective. I found myself challenged when that turned into a full presentation on "40 years in China:

past, current and future perspectives". This took time to research, including data from the invaluable online collection of China Statistical Yearbooks, so I was pleased to be able to reuse it at a North West Centre Open Meeting, and to prepare it for reuse in this column.

We all know that China has developed rapidly over the last sixty years. Up to 1980, less than 20 percent of the population was urban, which rose to 50 percent by 2010, and will reach 70 percent by 2030. Under Mao, economic development was slow, but began to pick up through the 1980s. The baseline year for official statistics is 1978; GDP doubled over the following 10 years, after which agriculture continued growing steadily, increasing fivefold by 2014. In

contrast, growth in both industry and services “took off” from about 1990, showing more than 40-fold increases by 2014; while GDP per capita increased 20-fold.

## Waste Management Up To 1985

A KEY constraint to growth under Mao was identified as raw material shortages. One response was to set up a network of state-run material recovery companies in every city. These achieved very high rates of recycling, covering a huge range of products – including several thousand tonnes per year of human hair in both Beijing and Shanghai, used as an organic chemical feedstock. People separated anything saleable at home, and sold it to itinerant buyers or direct to redemption centres (of which there were 400 in Beijing).

The 1970s system of municipal solid waste (MSW) management has been described as “garbage farming”. With near-maximum recycling rates, the residual waste was largely organic, with high ash content particularly in Northern China in the winter. The waste was taken to local transfer points and transported into the countryside, with 2,282 deposit/composting points around Beijing, from which local farmers collected material for use after further composting and/or maturation.

If the 1970s Chinese system of resource and waste management really did work like this, then maybe it could be viewed as an early example of a circular economy.

My first direct experience came in 1985, when I was invited by the Shanghai Sanitation Bureau, which employed 30,000+ people, to give their senior staff a one-week training course in “modern” solid waste management. I found a system in transition. MSW was collected in bicycle carts or small vehicles, and discharged directly into barges at transfer points before being taken into the countryside. I was absolutely not allowed to visit any of these, which I

believe were rapidly becoming uncontrolled dump sites. I was told that fewer farmers wanted the compost, as new subsidies for inorganic fertilisers had been introduced in 1975 and there were now more visible contaminants in the waste. A particular problem came in summer: there is a huge peak in water melon rinds, from which apparently the initial leachate is phytotoxic, which was killing off the rice paddies around the now overflowing deposit points.

## MSW Management Since 1985

CHINA BEGAN to shift to “market-oriented” operations after 1985. Private companies have gradually replaced the state-owned material recovery companies. The focus has shifted from all materials to selected more profitable materials, with an emphasis on metal recycling from industry. Household recycling went into a downward spiral – redemption centres accepted less materials, the prices were frozen, so there was less incentive for people to recycle as living standards rose, so centres closed, etc.

The demise of the old “circular” system coincided with an explosion in the quantities of MSW collected, from 31m tonnes in 1980 to 191m tonnes in 2015, as urban populations and living standards increased rapidly.

My next snapshot of the developing MSW system came in 2004, when one of my students, Amy Nan Guo, compared Beijing with London, two cities preparing to host the Olympic Games. She found that the 2,282 small dumps inherited from the old system had been replaced by 17 controlled landfills and two small, basic incinerators. Waste composition had also changed significantly, with packaging content increasing since 1984 from seven percent to 47 percent, while the overall (dry) recycling rate had declined from 27 percent to 10 percent. Recycling was now informal, with itinerant buyers and junk shops buying direct from householders.

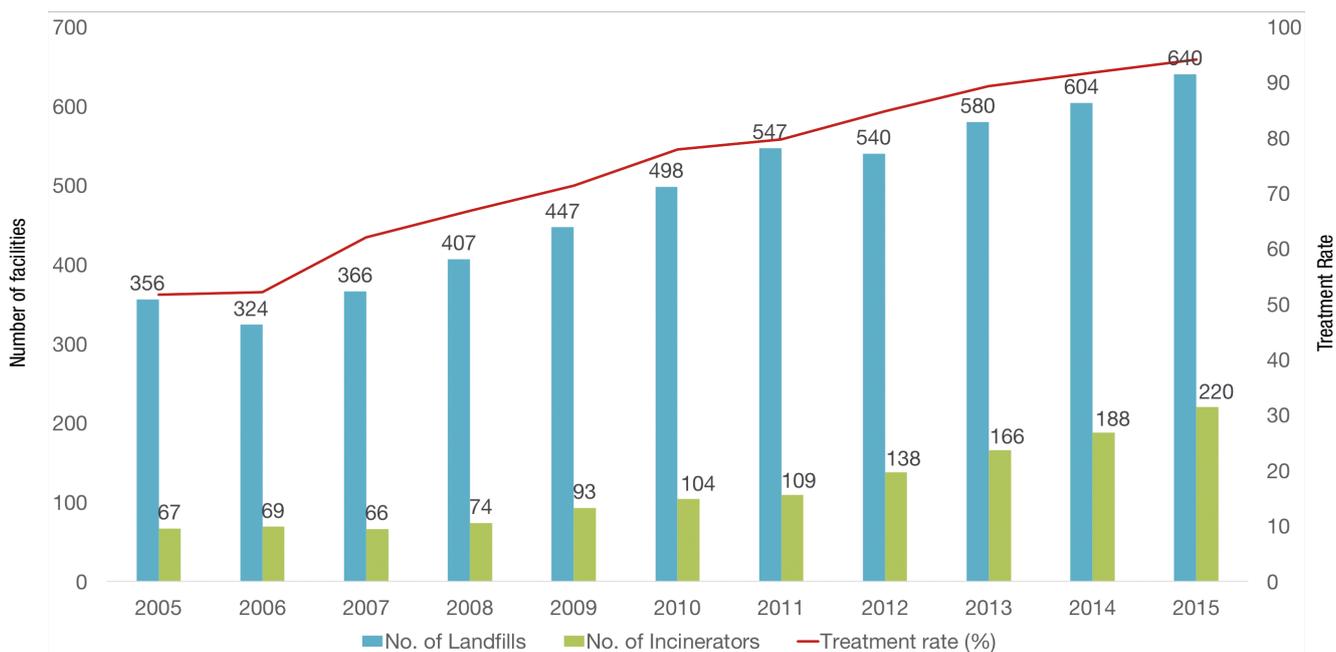


Figure: Development of modern waste management facilities in China 2005-2015 (Source: China Statistical Yearbooks)

The city profile prepared for Nanjing in 2009, as part of UN-Habitat's *"Solid Waste Management in the World's Cities"*, which I co-edited, reported two sanitary landfills, constructed with World Bank finance in 1997, in the course of replacement by two new incinerators of 1000 and 1600 tonnes per day capacity. Another student's application of the Wasteaware benchmark indicators, which grew out of the UN-Habitat work, to Nanjing in 2016 showed a high-performing city, with two large, modern incinerators and one landfill, complemented by three smaller district landfills serving outlying areas.

These anecdotes confirm the official statistics shown in the Figure. The treatment rate for collected MSW in controlled landfill and incineration facilities increased from 52 percent in 2005 to 94 percent in 2015; while over the same period the number of landfills increased from 356 to 640 and incinerators from 67 to 220. The standards for each likely increased over the period; the official statistics changed from "burning" to "incineration" after 2009.

So, for MSW management, China appears to have moved from crisis to a relatively modern, well developed system in 30 years, over which time quantities have increased five-fold – which is quite impressive. Unfortunately, the rapid nature of that progress is being used against them. So, for example, the recent "Jambeck" paper in *Science* currently being used as the definitive reference on the quantities of plastics entering the oceans, names China as the largest source, accounting for 28 percent of the World total. On digging into the detailed modelling and assumptions, one finds that the data used is from 2004, when they estimate that 78 percent of waste in China was mismanaged. That may well have been pessimistic then, but given recent progress in China, using such estimates today gives a very wrong impression.

## Recycling In China

PRODUCTION OF machine-made paper and board in China increased steadily from 1.7m tonnes in 1965 to 28m tonnes by 1995; after a slight dip, it took off again in 2000, to reach 117m tonnes by 2015. Primary plastics production similarly grew steadily from a low base, reaching 1m tonnes around 1990 and 11m tonnes by 2000, then accelerating again to 78m tonnes by 2015. This provides the background for the surge in demand for imported paper and plastics for recycling, particularly over the last 10-15 years.

When China first moved to "market-oriented" operations after 1985, rapid economic growth was prioritised over health and safety and environmental protection. In the 1980s and 1990s, there was an emphasis on "township and village enterprises" in the countryside, often under state control. These then morphed into what another of my students, Si Hui Zhou who looked at Chinese imports of plastics for recycling in 2012 as an input to an ISWA report, called from the Chinese literature the "three non-enterprises" (or "3-nons"): no rules of operation, no quality standards, no inspection.

Environmental protection in China has been gradually ramped up since the 2000s, starting with large state-owned and private enterprises. So, at the time of our 2012 study, there were in effect two systems working in parallel. Our results showed that imports of plastics for recycling were about 10 percent of primary plastics production, and that domestic collection of plastic wastes for recycling was significantly higher than imports. Our interpretation was that the large companies using recycled plastics to make products for the export market needed the higher quality that could only be guaranteed by imports. Plastic products for the domestic market were at that time made mainly by the "3-nons", using cheap flourine surfactants and other additives, impacting on the quality of the used plastics



Formal sector waste collection bicycle cart in one of 120 small transfer stations in Kunming in 2009. Photo: Ljiljana Rodic.

collected for recycling. Local recycling was also by small, private “3-nons”, often clustered into recycling villages. Operation Green Fence in 2012 was intended to reinforce the official status, and ensure that imports were indeed high quality and were not illegally diverted to the domestic recycling “3-nons”.

Our conclusions at that time were twofold. We saw that some high-quality recyclates were becoming ‘normal’ commodities; so, for example, China and the US were competing to buy high quality PET bottles for recycling, which was partly responsible for putting Closed Loop in the UK out of business as it could not afford to pay the increasing market price. We also predicted that at some point over the next 10-15 years, the quality of domestic plastics collected for recycling in China would increase so that they could displace the need for imports.

Since then, environmental protection has seriously moved up the political agenda in China, both in response to domestic issues on air pollution in cities, and to fill a perceived international void in terms of leadership on climate change. There has been a serious clampdown on the “3-nons”. When I sought photos on the web for my presentation, I found that the infamous Guiyu e-waste recycling village, which had long been targeted by the Basel Action Network (BAN), Greenpeace and others as a major illegal destination for Western WEEE, had been closed down in December 2015. Any companies wishing to continue operations were relocated to a new industrial estate with communal wastewater and hazardous waste treatment facilities, and restricted to treating only domestic e-wastes. Similarly, a typical plastics recycling hub, Luwang village in Shandong province, had been closed down by government inspectors in

May 2017, with a compensation payment being made of 30 percent of the capital cost of equipment in return for closing.

And it’s not just the “3-nons”. All companies importing waste and scrap, large and small alike, were visited by 60 teams of inspectors in July 2017; some were closed down, and all have had their import licences reviewed. New licences under Operation National Sword have been severely curtailed, and are renewable quarterly rather than annually.

So, it would appear that change has come about more quickly and dramatically than we had predicted in 2012, in particular the complete ban on imports of post-consumer plastics. A parallel development is the coming online of significant new plastics production capacity on the US Gulf Coast, fuelled by cheap fracked gas. It is possible that China is content to see a short-term increase in imports of (cheap) virgin plastics, until such time as the quality of domestic recycling improves so as to fill the gap caused by their import ban.

The 1970s Chinese system might have approached a circular economy, albeit on a fairly small scale. China passed its Circular Economy Promotion Law in 2008, which for some years was of interest mainly for its name. It now looks as if China really could lead the world as we attempt to transition to the circular economy, this time on a large scale. ■

David became President of CIWM in October 2017. He is a career waste & resource management consultant, starting work at the old Harwell Laboratory in the 1970s. He then spent 20 years at ERM before becoming independent 15 years ago. David has also been a Visiting Professor in the Civil and Environmental Engineering Department at Imperial College London since 2000.

**SME** / **SOUTHERN**  
**2018** / **MUNICIPAL**  
**EXHIBITION**

**Thursday 21st June 2018**

**Meet the leading waste and municipal companies in the Garden of England**

**Attend informative free seminar**

**Free entry and lunch provided**

**Networking opportunities**



To book your free ticket and to find out more, please contact us.

[www.municipal-expo.com](http://www.municipal-expo.com)

01732 897431

[claire@epicmediagroup.co.uk](mailto:claire@epicmediagroup.co.uk)



# Perfect Procurement



**Sarahjane Widdowson** of Ricardo Energy and Environment, and **Adam Read** of SUEZ, outline some of the key procurement challenges for those local authorities coming to the market in the next few years...



**W**ith over 60 local authorities coming to the market for collection, cleansing and recycle contracts in the next three years, it's an incredibly busy time both for officers and those waste contractors bidding to win these contracts. In a crowded market place there's an increased pressure to get things right and to make your authority's opportunity look as attractive as possible. This will ensure adequate interest and subsequent competition and, importantly, that best-value is achieved.

This pressure can't have come at a worse time for many authorities. Austerity continues to bite and the issues raised by officers in our work for CIWM back in February 2015 ("Waste on the Frontline – Challenges and Innovations") continue to reflect the stark reality faced by many: budgets continue to be cut and staff levels are still reducing.

In April 2018, we'll be publishing an independent guide for local authority officers and their partners, which will provide an overview of the procurement process focusing on top tips and useful advice on taking any waste related service from existing service, through business case for change and to ultimate implementation. The guide, which draws on insights from local authority officers, waste management contractors plus financial and legal advisors, should help to smooth the process, minimise

delays, avoid common pitfalls and reduce expenditure (both on the procurement and the service).

The guide has been sponsored by SUEZ and will be available to download following its launch at the CIWM Cleaner Communities event in Wigan on 18 April.

## What Are The Main Challenges?

OFFICERS CURRENTLY face a huge number of internal and external challenges. It is an exciting time for the waste industry, with the upturn in media interest in all things waste, the promise of reform in many areas from government; but also an increasingly difficult time, with heightened interest and expectation from a public that are keen to recycle more and use less plastic, the ongoing challenge of Chinese import restrictions on recyclates, and the continuing cuts to local government budgets.

Local authority waste management teams are still reducing in size and often valuable skills have been lost through staff retiring or moving on, whilst staff members that may have procured the existing contracts may no longer be in post. We're also seeing more procurements being run by the procurement team, rather than being driven by technical waste officers, with the challenges that this brings to the market. In the past, additional resources would have been brought in to deliver these procurements, from interim staff to consultants, but increasingly, officers are being expected to do this as well as their day jobs; an almost impossible task, and something that concerns the contractors potentially bidding for the local services, as it increases the risk profile. So, what can officers do?

## Plan For Success!

FOR ANY procurement process, putting in sufficient time to plan can really reap benefits. Spend as much time as



## SUEZ Says...

Local authority waste service procurement in the UK is becoming increasingly tough, and at SUEZ we spend a lot of time weighing up each and every opportunity to tender before committing our resources. We assess the risk profile of all opportunities, reviewing contract performance, geography, local assets, materials risk and other criteria before we put our bid teams to work, so a late-to-market, overly-complicated, badly-timed and poorly-packaged opportunity will be unlikely to interest us. This is why SUEZ commissioned Ricardo to develop this toolkit and guidance notes, to help local authorities and their partners to plan effectively for contracting out their services so that we can provide the best possible value for money solution. We hope it is widely used and we look forward to sharing some of the key measures and top tips at a CIWM webinar to be held on 8 May. Visit the webinar page on the CIWM website for more information.

possible up-front deciding what it is you want to deliver, what you like about your current service, what innovations you want and why you want them. This is an opportunity to get feedback from everyone involved in the current contract on what's worked, what could be improved or delivered differently and what the future might look like. Conducting an options appraisal at this stage can be beneficial in terms of assessing different delivery options and the likely cost of change.

If your procurement involves more than one service team or authority, then building consensus can take also take a lot of time. A strong project manager and an overall project sponsor (senior officer) is invaluable here to push forward decision-making and to avoid losing momentum.

Soft market testing is also essential, providing an opportunity to get feedback from the market on how attractive your proposals might be, whether they agree with the way in which you've packaged your contract, what they think about your risk proposals, etc. It can also help you to iron out issues in terms of infrastructure provision (sites, depots, etc). But, it is important to think about what you want from the market testing – it shouldn't be a tick-box exercise; it is an opportunity to gain real insight from the market before you've crystallised your thoughts on the way forward. It's also worth speaking to your peers at this point – what are the experiences of other officers that have recently let contracts, ask regionally through your networks, or speak to CIWM, WRAP or LARAC, for example.

Data gathering is an important part of the planning process. The more accurate your data is the more accurately those bidding for your contract can price your requirements. If you can't provide the data then resourcing and consequently pricing will be based on assumptions and there may be risks factored into the prices offered. Most authorities don't have perfect data, but it's important to identify what's available and, if possible, to try and fill the gaps where you don't have any.

### Your Timetable Is Critical – Start Early

PROCUREMENT TIMETABLES can slip and, at busy times, this can create blockages in the market and pressure where bidders are trying to respond to multiple municipal procurement deadlines at the same time. Work backwards from your contract end date to provide a comfortable amount of time for mobilisation and the procurement process (two years seems appropriate).

Build in extra time/contingency for each phase, avoid

holiday periods and don't forget approvals, which should include both internal approvals and the time it takes for a potential bidder to get board sign off. It's worth talking to the market early on to understand what other procurements are coming out at the same time, as this could create a split in priorities and reduce overall competition. Could you flex your timetable to accommodate this? And revisit your timetable regularly and, if there are slippages, keep everyone up to date.

### Critically Review Your Decisions

YOU MUST instil a "culture of challenge" within your team. For every choice made, think about what it means in practice: how it will be perceived by and impact on all stakeholders? For example, your choice of procurement route needs to be carefully considered. Too many authorities have been choosing a competitive dialogue route for a straightforward and simple service type procurement. This takes more time and costs more money, both for the authority and for bidders, which may result in your tender being de-prioritised by some contractors.

Choose your team wisely and make sure you have the appropriate technical, legal and financial advisors to support you, bringing the skills and experience that you don't have available. This could be an in-house team, supported by industry peers, or external advisors that deliver this type of support every day of the year, and not just once every seven-to-10 years.

And please do not underestimate the time and resource required to draft documents, because it always takes longer than you think it should! The more people you have involved, the more complex it becomes, so think carefully about who is involved and who needs to approve documents etc.

Each review is an opportunity for critical challenge and this process will ensure that your documents are robust and will deliver the service you require.

### In Summary

SO, ALTHOUGH local authorities are facing tough times, procuring services and solutions should not be a burden or headache. It should be seen as an opportunity to deliver value for money public services, a means of driving efficiency and improving performance standards. But you must think strategically, start to plan early and recognise that the market is a competitive one and your tender needs to be attractive, if you want the right partner for your next contract cycle. ■

# Teckal Time?



A significant amount has been made of the rise of "Teckal companies" recently. **Simon Anthony**, manager of Bristol City Council's integrated waste service, draws on his own experience to ask if they can succeed, and what the future holds for this particular local authority challenge...

**T**eckal companies, at their heart, are an arms-length company owned and controlled by a local authority, which delivers a council service, and has its income restricted to 20 percent from commercial sources.

From a local authority perspective, these Teckal companies are seen as a vehicle by which councils exercise the same control as they would have over a department of its own, only without associated pension liabilities that an in-house service has. In addition, Teckal companies avoid the need for a significant procurement exercise in order for it to be appointed. Private sector operators rightly view these as new challengers in an already crowded waste service marketplace, with a potentially opaque, and often conflicting, relationship with its associated joint commissioning and shareholder body.

## Teckal & Waste Services

TECKAL COMPANIES that deliver waste services have been established throughout many areas of the UK, including Bristol (via the Bristol Waste Company/ BWC), Cheshire East (ANSA), York (Yorwaste), East Cambridgeshire DC (East Cambridgeshire Trading Company) and Gloucestershire (Ubico). Providing they are wholly-owned and controlled by a local authority, or group of local authorities without a commercial party being involved, and do not exceed 20 percent of their income deriving from commercial sources, then a company can achieve Teckal status.

But why are they liked and/or mistrusted? The principle benefits, when it comes down to it, are financial. This makes them very attractive, given the austerity measures local authorities are currently facing. Bristol itself has made excellent progress in this regard recently, but still forecasts a maximum budget gap of £133m by 2022.

Two main benefits can be derived from Teckal companies: firstly pension liabilities can be reduced, although local government employees transferring to the Teckal company remain eligible for the Local Government Pension Scheme – new employees can be offered a more affordable pension.

Secondly, the significant procurement cost of tendering for a new

contractor can be avoided as local authorities can simply award a Teckal company a service as it would a department of its own. In Bristol, which has appointed the Bristol Waste Company (BWC) to deliver almost the entirety of the waste service, this is thought to have avoided an estimated £1m in procurement costs, according to media reports at the time. Indeed, a tertiary benefit in the medium to long-term is greater flexibility should a local authority wish to pursue reducing service costs delivered by a Teckal company. A local authority-owned Teckal company is unlikely to seek to reject or avoid cost-cutting measures as robustly as a private sector company might.

## Full Market Procurement vs Direct Appointment

CERTAIN AREAS of the private sector have counselled caution towards Teckal companies. This is understandable given the direct procurement opportunity cited above; there is no chance for private sector bidders to tender, or re-tender,



for contracts if the commissioning body wishes to appoint a Teckal company to deliver the contract.

Therefore, there is significant reason for the private sector to view Teckal companies as a legitimate threat. Indeed, it is this direct procurement option that causes considerable consternation among the private sector: “competition and contestability... have long been the best drivers of value for money for the tax payer”.

This healthy competition that a procurement exercise generates may indeed yield value for money (this is not to concur that direct appointment won't yield value for money), however, once the procurement exercise completes and preferred bidder is appointed, it can be very difficult to further vary any contract to accommodate a legislative or financial issue that warrants revisiting the original contract.

### Working With A Teckal Company

THE MEDIA reports referenced earlier did foresee further difficulties with Teckal companies, in particular as regards transparency. This point carries some degree of substance – it is likely that most local authorities will do away with large portions of what was a client team. This is true for Bristol – what was once a 15-plus strong team, client activities are now delivered by two managers. What is the need for a large client team managing a company-owned by the council?

There is prevailing thinking within many Teckal-contracting councils that the Teckal company itself acts in the best interests of its shareholders (the council) rather than private owners more concerned with rates of return. What arises from this is a transparency question: can a council be both an effective and separate shareholder and client?

However small the client team is, it is imperative for the client team and shareholder team to be separate departments and, if possible, separate directorates within a council. Fortunately, Bristol has not encountered this issue, principally because BWC identifies itself as being entirely separate from Bristol City Council, which in-turn forces the council to arrange itself separately with both discrete client and shareholder sides.

For example, BWC supplies its own procurement system, legal team, complaints software system and its own waste management system, which underpins everything the company does. It does not piggy-back on the council's systems or teams.

BWC was set up in 2015 to deliver the waste collection contract from the outgoing private contractor and it delivered the collection contract for 12 months, and then submitted a business plan to Bristol City Council's cabinet to deliver an integrated waste management service for the council, which was approved on 11 August 2016.

The initial transfer of the collection contract in 2015 was straightforward, as essentially all staff transferred from one private sector contractor to an arm's length contractor. The fun came when services, long held by Bristol Council, were transferred to BWC. In particular, disposal contracts for waste streams collected at HWRC sites, and larger kerbside collected material, such as general waste and green and food waste (which were held by Bristol City Council) encountered difficulty. Contracts that enjoyed a life expectancy greater



than that of BWC's 10-year contract required the council's guarantee to continue it should BWC cease to exist after the 10 years had elapsed.

With most waste staff transferring to BWC, or outside the organisation altogether, there has been a wealth of institutionalised knowledge leaving the council. This initial gap in knowledge has meant a steep learning curve for remaining client managers and a necessary, but acceptable, two-month delay in the transfer of certain services to BWC.

As mentioned previously, the absolute benefit of a Teckal company, which eclipses all the growing pains and teething problems, is its willingness to work for the ultimate benefit of Bristol residents and, when it comes to it, to get round the table and discuss potential savings. To date, BWC has delivered savings in 2017/18 in excess of £500,000, and provided a significant rebate to the council. This is in addition to delivering a two percent bump in the recycling rate and associated reduction in landfill.

So, based on what we know, will they work and what does the future hold for Teckal companies?

In the case of Bristol City Council, the reduction in central government funding and increased financial pressures, principally in adult and children's social care, suggest we have not reached the financial floor just yet. With the positive track record of BWC to date, it is likely that those heading up other departments will consider in-sourcing to a Teckal company to deliver their service.

But what is the future overall for Teckal companies? Well... it's likely to go one of two ways: either we have a model that follows the boom and bust of kerbside community recyclers in the mid-late 00s where only the strongest survive (Newport Wastesavers for example) as others lose their contracts and cannot compete with the private sector. Or there is consolidation, as the drive for further savings necessitates the expansion and evolution of Teckal companies throughout the UK and, save for inevitable casualties (potentially due to mismanagement), the growth of Teckal companies will continue for many years hence. ■

**Simon Anthony is a Chartered Waste Manager with over 15 years in the waste industry. Simon manages Bristol City Council's integrated waste service and lead council responsibilities within the West of England Waste Partnership**

# Multi-Storey Confusion

**Bob Couth** and **Martin Garrett** discuss the challenge of waste storage for flats and multi-occupancy properties. With no national standards for the type and capacity of bins for these dwellings, or consistency over collection schedules, they ask how can we ever improve recycling rates?

**F**lats – be they high-rise, low-rise, converted old mansions, or apartments above the local shops – almost 15 percent of our population live in them (Eurostat, 2016). Despite their architectural diversity, new developments across England encounter a common issue when it comes to waste: there is no national standard for the capacity of receptacles to be provided per dwelling for developments of over eight properties.

The majority of local authorities provide guidance on waste storage for new developments, where capacity requirements can vary considerably. This variation across authorities is a

source of confusion (and frustration!) when designing waste storage facilities for new developments, often requiring a process of negotiation with local authority planners. The greater the number of bins required, the more costly the development – a cost inevitably met by resident's mortgage and rental payments.

Local authority guidance on waste capacity provision often stipulates a minimum number of 1,100-litre Eurobins and 240-litre wheeled bins for a given number of apartments, where requirements vary significantly due to different waste collection frequencies and regimes. Guidance documents



Local Authority	Residual	Dry recyclables, pulpable	Dry recyclables, commingled	Food
Salford City Council	3 weekly	2 weekly	2 weekly	Weekly
Woking Borough Council	2 weekly	2 weekly	2 weekly	Weekly
East Northamptonshire Council	2 weekly	2 weekly	2 weekly	Weekly
Dudley Metropolitan Council	2 weekly	2 weekly	2 weekly	N/A
LB of Barking and Dagenham	Weekly	2 weekly	2 weekly	N/A
Manchester City Council	2 weekly	2 weekly	2 weekly	Weekly
London Borough of Brent	2 weekly	2 weekly	2 weekly	Weekly

Table 1: examples of the differing waste collection types and frequency in English local authorities

have often been published for a number of years and are not necessarily updated for changes in collection methodologies. At SLR we have investigated, designed and negotiated storage requirements for a number of high-rise property developments and have first-hand experience of how the number of receptacles required can vary between authorities and by collection frequency.

### Differing Approaches

AS DEMONSTRATED in Table 1, the majority of waste collections in England are now alternative weekly. Following each local authority’s respective guidelines for new developments, the number of 1,100-litre Eurobins and 240-litre wheeled bins required for a 200 apartment development would be as shown in Table 2.

The results show that – for the same development – developers can be required to provide over double the waste storage space depending under which authority’s control it happens to be built. Salford City Council would require 84 x 1,100-litre Eurobins and 21 x 240-litre wheeled bins, whereas neighbouring Manchester City Council would only require 43 x 1,100-litre Eurobins and 11 x 240-litre wheeled bins. This additional storage can add significant cost to developments and potentially reduce space for resident amenities, such as cycle storage.

The industry would benefit from an English standard for waste storage space in high-rise developments. Based upon an assessment of various authority guidelines, a reasonable number of properties served by 1,100-litre Eurobin and 240-litre wheeled bin per weekly collection could be as

shown in Table 3.

If the collection is fortnightly, then the number of properties served by each bin would halve. Likewise, if residual waste collection was three-weekly, then the number of properties per bin would be a third, and so on. SLR would only advocate three-weekly residual collections where there is separate food waste collection.

The above would be the suggested standard for high-rise residential development. There is not a standard waste storage requirement for commercial developments to gain planning permission as private/non-municipal collections have to be arranged, and the frequency will vary with cost. Commercial developments can limit their space storage requirements by having frequent collections.

It has been suggested on mixed commercial and residential high-rise property developments that storage requirements and space for household waste can be limited by having residential waste collected more frequently by a commercial contractor. The commercial contractor could collect residual waste on a weekly basis, with the authority collecting it on a reduced frequency basis. However, this would not be recommended due to the practicalities of logistics and the long-term cost, particularly as the household waste could effectively be treated as commercial waste with the developer and/or residents footing the cost of disposal.

The number of bins required can potentially be reduced by providing compaction Eurobins. However, this is not normally acceptable for dry recyclables, despite some reprocessors accepting compacted wastes. It is also not normally acceptable for residual waste despite residual waste being compacted in refuse collection vehicles. The day-to-day practicality of a

Local Authority	Residual	Dry recyclables, pulpable	Dry recyclables, co-mingled	Food	Total Household Provision	
	1,100 litre Eurobins	1,100 litre Eurobins	1,100 litre Eurobins	240 litre Wheelie bins	1,100 litre Eurobins	240 litre Wheelie bins
Salford City Council	40	20	20	20	80	20
Woking Borough Council	40	20	20	15	80	15
East Northamptonshire Council	26	26	26	26	78	26
Dudley Metropolitan Council	34	17	17	0	68	0
LB of Barking and Dagenham	34	9	9	0	52	0
Manchester City Council	20	10	10	13	40	13
London Borough of Brent	20	10	10	20	40	20

Table 2: the number of bins required in each sample authority, following their own guidelines for new developments

Waste Category and Bin Size	Residual	Dry recyclables, pulvable	Dry recyclables, commingled	Food
	1,100 litre Eurobins	1,100 litre Eurobins	1,100 litre Eurobins	240 litre Wheelie bins
Waste per property per week (litres)	90	120	120	25
Number of properties per bin	13	10	10	10

Table 3: a possible standard number of properties served based on an assessment of all sample authorities' guidelines

compactor would also need to be considered, as the operation of such equipment is not advised for residents.

Local authorities in the UK have a statutory duty under Section 45(1) of the Environmental Protection Act (EPA) 1990 to arrange for the collection of their household waste, and no direct charge shall be made for its collection. However, Section 46 of the EPA states that where a waste collection authority has a duty to collect household waste, it may require the occupier to place the waste for collection in receptacles of a kind and number to be specified by the local authority. There is no English standard for the kind or number of receptacles to be provided for any type of development. Local authorities are very unlikely to grant planning permission for a development if the kind and number of receptacles does not meet their guidance.

## Looking to the Future

IT IS not guaranteed that the storage capacity designed for a property development today will be adequate for waste storage in the future. If national goals of reducing waste arisings per person are realised, then the waste storage space designed today should suffice. However, future collection frequencies and waste arisings per property are unknown variables. For example, waste arisings per property can increase in-line with the rising population density and affluence of residents. It is for these reasons that planning authorities allow some contingency in the waste storage

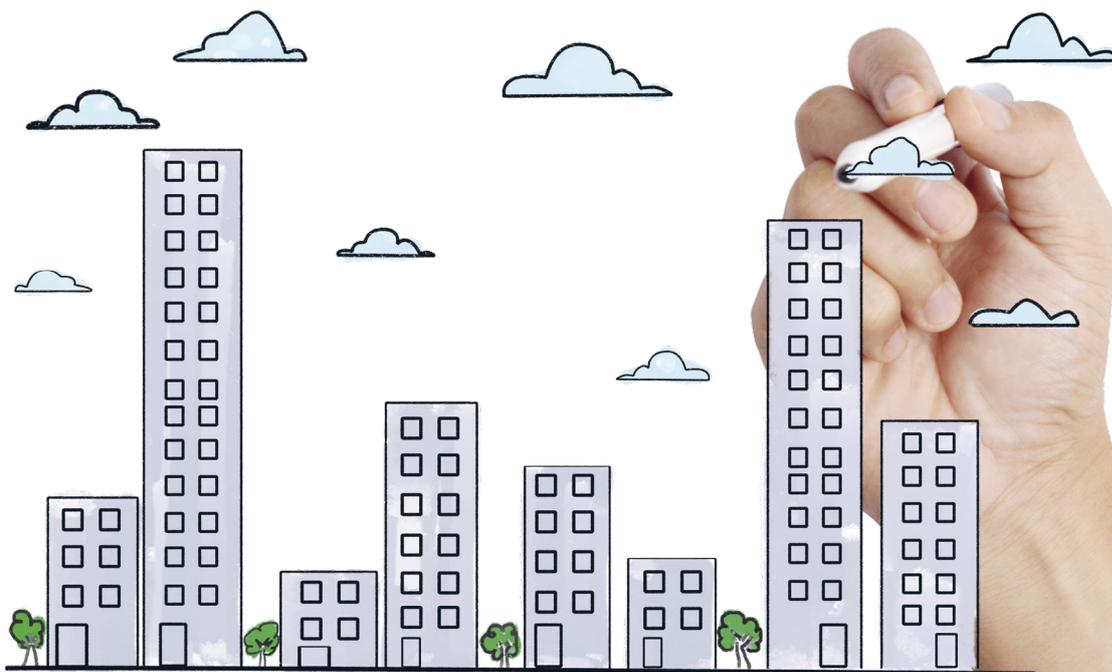
requirements per property. How to factor these uncertainties into waste storage requirements for developments is difficult.

There is also an issue for residents of apartments in multi-storey developments over the management of wastes for recycling and disposal. Space within apartments is at a premium, and residents have little desire for a multitude of internal storage containers for food, pulvable, dry recyclable and residual waste. They understandably prefer the convenience of a simple waste collection system.

The recycling rate in urban areas is often low due to the nature of the housing stock and their transient populations. For example, the recycling rate in East London (Dagenham, Havering, Newham and Redbridge) is around 25 percent, and authorities would not expect this to exceed 40 percent in the medium-term.

Consulting upon a standard for England on waste management provisions for the design of multi-storey developments, including the use of collection infrastructure such as chutes, would be a step in the right direction to making our high-rises a bit more high-recycling. ■

**Bob Couth and Martin Garrett are members of the SLR Consulting Ltd waste and Resource management team. Bob is a technical director with some 30 years' experience of waste management, particularly in the design and procurement of waste solutions. Martin is a project consultant with particular expertise in the assessment and modelling of waste solutions.**





# 2020 Vision

**CPD  
APPROVED**

**Kweku Attafuah-Wadee, Liam Murphy & Stephen Wise** look at the hurdles that lie ahead in achieving the 2020 household recycling rate, following last year's news that figures were "stagnating", or even declining...

**T**he revelation late last year that the UK's household recycling rate had declined in 2015 – falling to 44.3 percent – left a sour taste for many in the waste and resources management sector, further increasing concerns over the ability of local authorities to collectively meet the 2020 target of 50 percent. Between 2010 and 2014, the household recycling rate had increased by 4.5 percent to reach 44.9 percent. However, the recent downturn in national performance is a noteworthy reminder of the complex web of factors that influence the

recycling of our municipal solid waste.

International consultancy Wood (previously Amec Foster Wheeler), has supported a local authority client in the south east, to examine the opportunities and challenges of improving its recycling rate of household collected materials. The resulting report suggested additional target materials to be included to the client's current dry recycling waste stream, and highlighted the challenges of achieving a 50 percent recycling rate.

Our examination involved an assessment of the various influencing

factors, such as public behaviour, quality of the collected material, availability of reprocessing and the stability of end markets, including the Chinese market. This article aims to highlight the key findings identified in our assessment.

## Systems & Public Understanding

THE COLLECTION schemes used for dry recyclable waste can influence the levels of contamination sent to material recovery facilities (MRFs). Operating a commingled dry recycling scheme

tends to increase the likelihood of material contamination. This is because the different captured materials are compacted together in refuse collection vehicles prior to their deposition. If contamination levels of targeted materials exceed thresholds, MRFs will reject the load as it negatively impacts on market values.

Householder apathy or confusion can also be a barrier to maximising recycling rates, and has been the subject of a number of studies. Due to a limited understanding of the MRF design parameters, many residents lack clarity about why certain materials cannot be recycled, and the valid reasons for variances between local authorities.

For example, because different

some products can adversely influence the recyclability and subsequent end use of targeted materials. A prime example is polypropylene (PP) bottles. Because they can be surface-printed with potentially hazardous inks, this increases the likelihood that recycled PP flakes will have ink residue. This makes them unsuitable for food packaging applications by end use manufacturers.

Composite materials are increasingly becoming a feature of the household waste supply chain, and their rate of adoption appears to be accelerating due to the convenience they offer. There are a wide range of composite materials already in use, including paper-plastic composites (such as coffee cups), card-foil composites (such as Pringles

partly comprising an aluminium foil, such as toothpaste tubes, could readily be targeted for collected and directed into the MRF's non-ferrous waste stream by eddy current separators. However, this would reduce the quality of the non-ferrous metal output and its value.

Although end markets exist for the constituent components of composite materials, targeting them as part of the recycling system has proven troublesome in the UK with the exception of beverage cartons (due to recent financial support from the principal manufacturer). Conventional paper mills, for example, cannot accept composite paper coffee cups because they are currently unable to efficiently separate the constituent paper from the wax and polythene lining. However, there is currently a dearth of commercially viable composite reprocessing technologies capable of separating the individual materials. Hence, unless there is a concerted effort to drive product simplification through legislation (such as via extended producer responsibility) or technological advancements in reprocessing, the complex problems posed by composites are likely to get worse.



types of plastic polymers share similar physical features, it likely that the average resident will be unable to tell them apart. However, not all plastics are targeted due to difficulties in reprocessing and limited end uses. Typical amongst these are black plastics and polystyrene. Hence, where mixed plastics are targeted for recycling, residents are likely to introduce such contaminants into the supply chain unless there is an effective communication campaign.

### Quality: Design & Composites

THE DEMAND for targeted waste materials by end markets is strongly influenced by quality. To compete effectively with virgin commodities, recovered waste materials must be of similar quality and consistency.

The introduction of chemical compounds into the manufacturing of

tubes), and laminated films (such as toothpaste tubes). The adoption of composites could be slowed if a national deposit return system (DRS) for drink containers were implemented (which would promote design for recycling), and/or imposing extended producer responsibility (EPR) on product manufacturers.

The presence of composites in the household dry recycling waste stream poses particular issues for MRF operators. Many MRFs in the UK do not have the infrastructure in place to efficiently segregate composites, thereby requiring manual picking. Though some MRFs have the equipment to separate beverage cartons (like Tetra Pak), the majority of the other types of composite materials end up in the rejects stream. This is because their presence reduces the quality of target MRF outputs.

For example, composite materials

### Exportation Of Waste To China

THE UK'S recycling rate growth is thanks, to a significant extent, to China's hunger for various materials collected from our households and businesses. These materials have included paper, old corrugated card (OCC) and plastics. To feed its manufacturing industries, China has developed reprocessing capacity to produce goods either for its own consumption (eg, recovered high-density polyethylene (HDPE) bottles are used to manufacture pipes and sheeting for China's construction sector) or to be exported back to the markets the materials were sourced from (for example, plastics are used to produce polyester textiles to sell back to us).

The long-term dependence on China, as a reliable destination for recovered household waste materials, has been put into question by recent shifts in Chinese government policy on imported waste. With the introduction of its Operation "Green Fence" initiative in early 2013 and its

subsequent waste crackdown in 2017 ("National Sword" 2017), the Chinese government has signalled its resolve to enforce stricter controls over the quality of recovered waste materials imported into the country. This is likely to have a long-term negative impact on UK exporters of recovered plastics and paper, especially if alternative export destinations, such as Indonesia and India, are either unable to accommodate materials

technology has struggled to gain a strong foothold in the UK due to difficulties in acquiring local authority planning approval and establishing sustainable commercial operations. Hence, sanitary waste recycling still remains an emerging sector.

Problems can also be encountered by well-established material markets in the UK. The market for polyethylene terephthalate (PET) reprocessing has experienced some unnerving moments

to be of no or very little value in the UK and have few end markets readily available to incentivise their separate collection and reprocessing. They are also costly to segregate; PS packaging, due to its light weight – relative to the volume it takes up – is difficult to cost-effectively collect, store, pre-treat and reprocess and, therefore, struggles against both alternative disposal methods and against virgin plastics.

"The introduction of legislation... could create the critical mass required to direct local authorities towards the adoption of more efficient systems for targeting and capturing high quality recyclable materials"

rejected by China or choose to implement similar import controls. (For more on this subject, see last month's Journal, available online to members only at [www.ciwm-journal.co.uk/magazine-archive](http://www.ciwm-journal.co.uk/magazine-archive))

Likewise, the slowdown in economic growth in China has raised concerns that international demand for recovered materials may reduce. These issues highlight the need for a diversification of end market destinations internationally, as well as locally.

## Technology & End Markets

THE PRESENCE of end markets for recovered waste materials is meaningless without the existence of dynamic reprocessors, supported by reliable technologies. UK household recycling rates are more likely to increase in a lively reprocessor climate with stable, good quality inputs generating high-quality outputs.

The struggle faced with the reprocessing of some materials is best epitomised in the case of recovered sanitary waste. UK households generate significant quantities of sanitary waste (such as nappies) and end markets for their major constituent components (fibres and plastics) exist. However, sanitary waste reprocessing

in recent years, with companies such as Closed Loop Recycling and Eco Plastics experiencing financial difficulties. A major contributor to these challenges has been the significant decline in the price of virgin plastics linked to the crash in crude oil prices since 2014.

The reduction in virgin plastic prices, coupled with their perceived quality advantages, has made recycled plastics less attractive as an alternative. Furthermore, possible future changes in the choice of recovered plastics for the manufacture of milk bottles – from clear HDPE to clear PET – will likely require reconfiguration of MRF sorting equipment across the UK.

The existence of a reliable end market is arguably one of the most important factors influencing the rationale for the establishment of new reprocessing capacity. This in turn strengthens the rationale for the collection and segregation of recyclable materials by local authorities and private sector investment in MRFs.

Local authorities are understandably cautious about targeting potentially recyclable materials if they perceive they have under-developed or unstable end markets, either locally or internationally. Some materials, such as polystyrene (PS) packaging and polyethylene (PE) film, are considered

## The Way Forward?

THOUGH THERE are serious challenges to achieving the 50 percent recycling target for 2020, increasing household recycling rates in the UK is still possible. Key to this is the incorporation of circularity into the resources sector. Government policy and/or legislation is critical for creating a conducive environment for circularity.

The pursuit of market intervention or incentives that prioritise the development of circular economy could lead to product manufacturers incorporating recyclability in their product design process, as well as stimulating the sourcing of materials from the local reprocessing sector. This would both reduce the negative impact product design can have on recycling rates and create more stable markets and prices for recyclables, helping to stimulate increases in recycling. Furthermore, the current consultation on a national DRS is a government-driven intervention that could be beneficial to the resource sector.

The introduction of legislation, similar to the Welsh Environment Act and the Waste (Scotland) Regulations 2012 in England and Northern Ireland, could create the critical mass required to direct local authorities towards the adoption of more efficient systems for targeting and capturing high quality recyclable materials. This would play a major contributory role in strengthening the financial rationale for investment in collection schemes, MRFs and reprocessing infrastructure. ■

Stephen Wise is a technical director and waste sector director at Wood. Stephen has extensive experience across waste infrastructure development and operations, business development and has worked in the private sector for waste operators and consultants.

Liam Murphy is a senior waste management consultant at Wood. Liam specialises in waste collection and recycling markets and undertakes waste and recycling projections, market assessments and prices forecasts. Liam likes board games and foraging things to eat or to make drinks from.

Kweku AttafuahWadee is a waste consultant at Wood. Kweku works on circular economy projects and led the research into the challenges and/or barriers associated with recycling different waste materials or types. Kweku is also interested in organic waste recycling particularly in developing economies.



# Two-Tier? Too Much Trouble?



WYG's associate waste & resource management consultant, **Victoria Hutchin**, discusses the challenges of two-tier working within local authorities in terms of their waste and resource management operations...

**T**he sector is facing many difficulties as it approaches the 2020 50 percent recycling target, with uncertainties around the future of legislation and policy in England, and further funding cuts to come. One of the matters to consider, as we enter this uncharted territory, is the role of two-tier authorities in the management of household waste, and the challenges this poses to officers and politicians on both sides of the responsibility divide.

## Two-Tier Systems

THE WAY waste management systems have evolved over the last 20 years has largely been driven by a shifting factors motivating the drive for recycling improvement, and thus overall aims of resource management systems. The focus has moved from landfill diversion (with LATS and landfill tax) to increased recycling (with statutory recycling targets) to cost savings (brought about by the austerity measures, which have hampered local authorities since 2012).

These changes, over time, have led to an amplification of the differences in drivers and challenges faced by waste collection authorities (WCAs) and their waste disposal authorities (WDAs) which, in essence, boils down to the cheapest collections (which retain at least the status quo in terms of recycling performance) on one side; and cheapest disposal (typically through diversion from residual waste treatment) on the other.

## Drivers & Challenges

SHARING COSTS across the two-tier divide is an increasingly challenging problem, and this can restrict the services WCAs can provide, stifle recycling rates, prevent materials from

moving up the waste hierarchy and hamper innovation in procurement. The best collection system in terms of cost-effectiveness or recycling rate, will not necessarily equal the most cost-effective disposal solution.

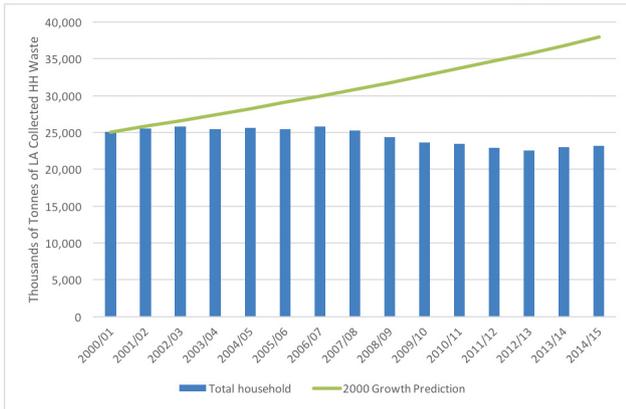
A key example of this is that commingled collections often offer the cheapest collection solution, due to the lower level of resourcing required relative to other systems; however, issues such as high contamination, processing costs, material quality and volatile (and at times unsustainable) material markets can result in prohibitively high costs on the disposal side. The difficulty in balancing costs of collection and disposal are further hampered by the fact that authorities are struggling to see the 50 percent recycling target as a priority, with all the other pressing issues, such as budget reductions and Brexit uncertainty, that need to be dealt with.

Despite overall aims to meet recycling targets, save money and deliver quality services, the differing responsibilities and obligations of the two tiers can put WCAs and WDAs at loggerheads. In addition to differing goals, joint working is further hampered by the speed at which the recycling and recovery industry has developed. Whilst this represents excellent progress for resource management, many local authorities have not been able to keep pace with technological and legislative developments and the changing composition of household waste.

## Waste Treatment

NOT ONLY have tonnages not increased at the rate anticipated circa 20 years ago, in addition to this there has also been significant changes in composition (eg, reduction in paper, increase in plastics due to light-weighting of packaging etc).

In the Waste Strategy 2000, it stated that household



Household waste growth projection based on a three percent annual growth compared to actual tonnages collected

waste was growing by around three percent per annum. At this time, many believed that this growth in arisings would continue into the future; however, data from Defra shows that local authority collected household waste fell below the 2000/01 level when the financial crisis hit in 2008/09. Waste generation has remained below that level since. Had waste growth continued at the anticipated rate of three percent per annum there would be 14.765m tonnes more residual waste to treat by 2014/15 than was actually collected.

This has created a multitude of problems, not least minimum residual waste tonnage contract thresholds set at a level that has since been proven to be too high. With such contracts most likely incurring financial penalties where WDAs fail to deliver the contractual minimum, introducing recycling systems that have the potential to divert significant quantities of material away from disposal (most commonly food waste), become prohibitively expensive as there may be no saving in treatment costs (disposal route, such as incineration compared to minimum tonnage penalty plus food waste treatment cost) to offset the increase in kerbside collection costs.

In addition to this, there are a number of PFIs in place, notable examples including Brighton and Hove and East London Waste Authority, the former is said to restrict the range of materials which can be collected for recycling, and the latter having no differential between recycling and residual waste gate fees.

## Sharing The Pain

ANOTHER KEY issue for two-tier authorities is how you divide up the costs and benefits associated with waste disposal and recycling. Adding new material streams to local authority kerbside collection systems often costs more; such systems require additional vehicles, staff, storage and potentially infrastructure. It is reported that local authorities will see their central government funding cut by a further £2.7bn over the next two financial years, representing a 54

percent funding reduction. This therefore poses a number of key questions for officers looking to improve recycling performance: who will bear the brunt of the costs? Who should finance it? Who should bank any savings?

Recycling credits were designed to reflect the savings to the WDA from the WCA recycling its own materials, ie, the savings in disposal costs as a result of recycling. Given that the costs of new services often outstrip the savings on avoided disposal, any recycling credit payment is unlikely to fully compensate for increased collection expenditure. Additionally, present legislation means that WDAs are only liable to pay a recycling credit to WCAs where the WCA recycles the waste it has collected.

Under this arrangement, the WDA can direct the WCAs to a particular treatment facility, pay all associated treatment costs and cease to make any recycling credit payments to the WCAs. This situation has recently occurred in Leicestershire, where payments to WCAs will cease from April 2018.

In West Sussex, where the county has favoured waste management solutions that do not include energy from waste (EfW), a mechanical biological treatment (MBT) facility is currently in place. One of the key difficulties with this type of technology is that it is very susceptible to the input

composition, and the final outputs do not count towards recycling performance targets. This poses difficulties for the WCAs that want to introduce food waste collections, as this would not only hamper the effectiveness of the MBT, but would also likely incur contractual penalties for failing to meet the composition requirements, and potentially tonnage thresholds.

In Hampshire, the network of EfW facilities are nearing capacity, and whilst an anaerobic digestion facility was constructed with the intention of processing food waste within the county, none of the WCAs operate food waste collections at the kerbside. This provides just one example of how, even with the infrastructure in place, it can still be extremely challenging to implement the corresponding kerbside service.

## Overcoming The Challenges

LOOKING AT the best overall resource management solution for taxpayers as a whole, both in terms of finances and environmental impacts, is undoubtedly the preferred outcome. However, balancing this across the two-tier divide is no mean feat, with hurdles including the sharing of costs, agreeing joint objectives and priorities (eg, recycling rates, cost savings, landfill diversion) and in obtaining public and political buy-in. But what about the problem of affordability?

When local authorities are at a genuine risk of running out of money, ensuring services continue at all becomes the priority, rather than implementing the best environmental solution. How can the sector work to facilitate environmental improvement as a whole nation, when local authorities each have their own books to balance? Are the answers to be found in the hotly-anticipated waste and resource plan? Here's hoping... ■

# The Case For Consistency...



Consistency in household recycling is one of the most often discussed and debated topics. So, the next in our series of local authority challenge articles is from WRAP's **Linda Crichton**, looking at its work in this area and outlining what it found by putting their business case to the test

It's just over a year since we launched the Framework for greater consistency in household recycling in England, and it's been a busy one with lots of work going on behind the scenes across the recycling supply chain.

A major piece of work has been putting the national business case to the test at the local level. This has enabled us to assess the viability and appetite for service changes as well as informing our ongoing programme of support for local authorities. In this initial phase of work we supported seven local authority areas, covering 49 individual authorities.

These authorities weren't all starting from the same baseline: their current service arrangements varied in terms of materials collected and collection systems adopted. This meant we were able to evaluate the business case across a range of local situations applying local performance data, costs and gate fees where available.

So what did we find? Firstly, those partnerships that were reviewing their joint service models or preparing for future procurements, told us that it was incredibly beneficial to have evidence provided by an external source, independent of their partnership. It helped them to better understand their costs and to examine options, which they might not otherwise have considered. I was pleased that this element of challenge was well received.

And secondly, for the findings, the strength of the business case for change was mixed. It varied depending on the starting position of the authorities and their existing service profiles, which exactly mirrors the findings of the national analysis. For some authorities, moving to one of the Framework models could enable them to increase recycling rates and reduce cost. For others, recycling could increase but at an additional cost.

Where the three Framework systems were assessed, the multi-stream and two-stream (with fibre separate) systems were, in all cases, the lower cost options compared to the commingled system. Again, this is in line with the national level analysis.

The key challenge is in adding a separate food waste collection

cost effectively. Less than 15 percent of the "pilot" authorities already had a food waste service, but for 80 percent of those, savings could be achieved through moving to one of the optimised Framework systems.

However, for the 80 percent or so of the "pilot" authorities currently with no weekly food waste collection and operating a fortnightly residual collection, here the opportunities for further savings or ability to add food waste at no additional cost were limited.

## Charging For Garden Waste?

MANY AUTHORITIES were keen to look at options not considered in the national analysis, such as three-weekly residual waste collections and charging for garden waste collections. These service variations changed the overall cost profile and indicated improvements to recycling and food waste services could be made at no additional cost, and in some cases generate a net saving. The introduction of garden waste charges can, of course, mean fewer subscribers to the service and less garden waste contributing to recycling rates.

Finally, the pilots have increased our evidence base and provided further insights to the pressures being faced locally and the wider context within which decisions are being made. It is apparent that for some authorities, it is not just about having to demonstrate a saving from any potential service change, but is the level of saving



One of WRAP's latest initiatives has been to transform UK plastics system and tackle plastic pollution. It is a new and unique collaborative initiative and WRAP is still urging everyone to play their part. It will involve collaborative action and commitment by businesses, industry, governments, local authorities, NGOs, media and society... everyone is needed!

The initial focus will be on plastic packaging and will aim to:

- eliminate unnecessary and problematic single-use plastic packaging
- make sure all plastic packaging is reusable, recyclable or compostable
- significantly increase the collection and recycling of plastic packaging
- increase recycled content in plastic packaging to drive demand for recycled material
- impassion and enable citizens to play their part in reducing plastic packaging waste and litter

Work is now underway to engage all parties, to agree the ambitions and set up the initiative. More details will be shared shortly when WRAP, in collaboration with the Ellen MacArthur Foundation, will officially launch the initiative.

sufficient to make that change worthwhile. This added intelligence will help us focus our efforts on areas where we can have the most impact.

It seems to me that the Framework is triggering debate and providing a platform from which to help inform future strategies for joint working and encourage more standard provision across partnership areas, which is great – even if in some areas change may take a few years to come about.

I was really pleased to see the collection of the six Framework core materials and food waste set out as a minimum service standard in the Mayor of London's Draft Environment Strategy (released in Autumn 2017). My

**"...with many more contracts up for re-tendering in the next few years, I do hope more authorities will take the opportunity to challenge what they are doing and take a fresh look at the options available"**

colleagues are now supporting a further 53 authorities across 18 business case projects through the Consistency Fund. And, with many more contracts up for re-tendering in the next few years, I do hope more authorities will take the opportunity to challenge what they are doing and take a fresh look at the options available.

Other initiatives where I'm pleased to report progress is the published guide on the collection of (food and beverage) cartons – this provides advice on the best way to handle and market this material for effective recycling and addresses, in one place, the many questions we and ACE

UK receive on the recycling of cartons and. You can find it at [www.wrap.org.uk/cartonsrecycling](http://www.wrap.org.uk/cartonsrecycling).

Another commitment was to consult on the feasibility of a common container/bin colour scheme. The consultation is now closed and we are delighted, if not slightly overwhelmed, to have received over 300 responses! We're planning on sharing the findings soon.

And not forgetting the rest of the recycling supply chain and what's coming onto the market; our packaging working group made up of retailers, brands, MRFs, PRFs and reproprocessors have drawn up a list of key issues to tackle to make plastic packaging more recyclable, including black and PVC films. With so many parts of the supply chain it is great to have this consensus. We're now looking into the best way to take this forward.

If you're looking for more clarity on what delivering consistent recycling means for you, the benefits it can bring and the actions needed, take a look at our new animation. We were challenged to explain consistency in three-minutes – I think the video ([www.wrap.org.uk/collections-and-reprocessing/consistency#section-2](http://www.wrap.org.uk/collections-and-reprocessing/consistency#section-2)) does it, I hope you do too!

As we said at the outset, achieving greater consistency in England's recycling is not going to happen overnight, but it can happen. It requires the right drivers and support to be in place and for all stakeholders to see and have a share of the benefits. Alongside our work at the local level we have been providing evidence and analysis to Defra on how we could achieve higher recycling nationally and the measures and drivers that can help. By continuing to work together we can make recycling easier for people and, in turn, collect more and increase the quality of what we collect to keep our recycling industry thriving. ■

This article was initially published as a blog by WRAP in November 2017, but has been published again here due to its relevance to the "local authority challenge" topic, and the fact that its content is still extremely relevant to the debate several months on.

Linda is responsible for WRAP's waste and resource management programme. She joined WRAP in 2004 to set up and manage its local authority support programme and prior to that worked for one of the UK's leading environmental consultancies. She is currently on secondment to Defra.



# 10 Years... And Beyond



Frith Resource Management's **Paul Frith** says at a time where budget cuts are biting harder should we be reappraising our municipal service model for the next ten years and beyond?

**W**e, in England, operate a fractured municipal waste management service. Distinguished by its variety in terms of collection systems ("hundreds" of variations), governance (in-house, Teckal, private), two-tier or single-tier duties and powers, but currently it is driven by one over-riding commonality: *austerity*. An increasing pressure to provide close to (or at) the minimum requirements under local government duties, and more limited use of discretionary powers.

So, what could be the future for this sector? We have started to see some signs from central government around some drivers for resource conservation (clean growth strategy, deposit return, food waste prioritisation) and changing metrics (tonnage-based recycling systems – your time is nearly up!), and the new Resource & Waste Strategy is due later this year.

And around the policy gestation we are experiencing a combination of factors shaping future scenarios such as: technology development (Internet of Things – collection crew monitoring and recording data, street cleansing innovations); the introduction of revenue generating aspects from the service (enhanced trade, garden waste, advertising, new services); the restrictions on householders impacting on service expectation, and associated local political aspects.

## Working Sub-Regionally

IN OUR experience, more local authorities are actively taking on greater risk in service delivery and infrastructure development for the potential greater reward in revenue and operational terms. Combined working, not necessarily just across two-tiers but sub-regionally in areas like collection, materials marketing, sub-regional public sector-owned MRFs, residual or organics treatment is a realisable vision for municipal waste services (the case of anaerobic digestion

(AD) in Wales is a good example).

So, could a proactive Defra help drive change to the effect that has been realised in Wales? And who would lead in service delivery? Here, I propose a public-sector-led vision, driven around a common collection system but with intelligent charging and some householder selection. Not operating at a local authority level but on a sub-regional framework.

Envisage a near-term horizon where households and trade waste customers are offered the same service options and councils work jointly to play a full role in commercial collections within their (and collaboratively with sub-regional authority groupings) administrative area/s. All customers, households and trade, are increasingly selective in the services they register for. They may receive the "minimum" austerity driven service or they may elect to pay for additional services. This is already increasingly happening, although not always acknowledged, and an uncomfortable truth politically and perhaps philosophically.

For the sake of discussion, let's consider a future situation where all households receive a free collection "standard service", a three-weekly residual waste collection with a 180l bin, weekly food waste collection and a two stream (paper separate) recyclables collection. Those households seeking garden waste collections pay a charge for a 240l fortnightly collection (common practice already), those seeking larger bins (360l) have an elevated annual charge (less common). Those households requiring greater residual waste capacity can opt for a 240l or 360l bin, but the increased charge is reflected in their annual council tax payments (polluter pays).

More bespoke "user-defined" collection services may become viable at a sub-regional level particularly if a greater engagement with commercial customers as well as householders is undertaken by



the public-sector body. Where services are integrated in this way, using the information technology on data and collection demands available, more bespoke services could become available, especially if subsidised by those householders seeking an alternative service that is in accordance with their lifestyle. A proactive customer-oriented model rather than a uniform service progressively emaciated by austerity?

For example, if householders do not wish to place their bins out each week they can tick another box for a collection and return of the bins, again for an additional charge, whilst maintaining free assisted collections for those that need it. The householder gets a full collection system but can tailor the specific service they want, some options they may require additional payment, which would be added to their council tax. Alternative charging structures could be developed for households working from home (and generating commercial waste) or using their home as a revenue generator, via, for example, Air BnB. These are missed revenue opportunities that some householders are either paying for, and others benefiting from, in the status quo.

Philosophically, this is far and away from a traditional council service that may be bespoke to their area, but standardised across all taxpayers. It is the converse of this, providing bespoke services and charges to individuals to meet their expectations, demands and in response to changing lifestyles. Working sub-regionally would also mean that there are much less configurations of collection systems in evidence, rather than the "hundreds" we now have<sup>1</sup>. National and regional waste management companies and those authorities offering trade services may already be offering separately collected recyclables for some customers and dry mixed recyclables (DMR) for those other customers next door who prefer it or don't have the room for multiple bins. In this approach, the householder could potentially move towards some selection of service to reflect their lifestyle. What would be the public appetite for this choice and would they be prepared to pay extra for a tailored service?

### Not Affordable?

IN ORDER for any such an approach to be affordable, the councils' responsibilities may change in practice, as joint in-house collection services (from a lead authority within a sub-region) would manage the collection function across several districts to overcome some of the inherent inefficiency of managing collections with some bespoke elements. All districts however would continue to run local street cleansing services, manage bulking stations (see below) and house local vehicle depots, where strategically beneficial. This change would result in service delivery savings by running collection systems across individual boundaries and to both commercial and household premises informed by optimised collection routes – based on the household / trade data, collated via the IT system. Households for which the optional choices are not cost effective (eg, for reasons of logistics) may only be offered the standard service.

Each local authority in this example would house a bulking station for separately collected recyclables and food waste (potentially also for garden waste). A publicly-owned sub-regional MRF would service all the commingled collections from trade / households, and a separate materials marketing company (again publicly-owned) sells the materials from the

bulking stations, HWRCs and MRF – allowing quality to be managed and market demands to be delivered with sufficient buying power. Further steps could also be sub-regional waste treatment through AD, composting or residual treatment. Some of these options lend themselves to regional rather than sub-regional ownership.

Sub-regional public-sector groupings within each region or across regions could sign MOUs to provide contingency to one another in the event of fires or other unexpected outages. Storage capacity could reflect this. Such collaboration would avoid the need for each of the 300-plus waste collection authorities carrying spare vehicles to cover maintenance and downtime, as collection systems would be harmonised and vehicles could be shared. Sub-regional vehicle maintenance facilities are another efficiency area.

### What About Local Delivery?

NO DOUBT some local "ownership" and nuance would be lost, and the operational and market risks pervade, however LAs, as we know, are not immune to these risks when outsourcing either. The favourable economy of scale and collaboration in terms of collection savings, communications, interface reduction, procurement, and potential rewards through revenue (recyclate and householder "preference payments") could be huge. This is not to mention the benefits of publicly run services avoiding the massive costs of buying out of long-term out-sourced contracts that no longer meet local authority needs – a notable problem at present. There are other risks however with the proposed model, related to efficiency and performance management if services are in-house / LA-owned, and these would require careful management and appropriate governance arrangements.

The engagement with householders and businesses in a more proactive, responsive and flexible manner allows other optional services to be offered to either or both markets, potentially in partnership with local companies selling services or products (Aylesbury Vale DC are already taking this approach via their LimeCart social enterprise). Such approaches could bring more revenue to the public sector via these activities and enable improved council services as a result.

A skills gap is present in some authorities, but others already run MRFs, energy from waste plant and successful trade waste services. The ability to flexibly charge around some of the ideas mentioned above would require central government direction, legislation in some cases, and has a host of political sensitivities (to put it mildly) but it would provide greater ownership to deliver services and an economy of scale.

This is clearly a debating item, but at a time where cuts are biting harder and the majority of our collection and treatment services are delivered by overseas owned utility and construction companies – shouldn't we, right now, be reappraising our municipal service model for the next ten years and beyond? ■

### Notes

1. WRAP has ongoing work on a range of standardisation initiatives, see [www.wrap.org.uk/collections-and-reprocessing/consistency/guidance/container-colour-consultation](http://www.wrap.org.uk/collections-and-reprocessing/consistency/guidance/container-colour-consultation)

# BALANCING ACT



**Sarahjane Widdowson** and **Jamie Warmington** from Ricardo Energy and Environment report on the early findings of a waste policy research project for the Environmental Services Association...



Following the publication of the Environmental Services Association (ESA) commissioned “UK Residual Waste: 2030 Market Review” report in January, a number of waste policy related issues were brought into focus that warranted further investigation, these included two key questions:

1. what policies would be required to deliver different recycling scenarios and at what cost?
2. what could replace weight based targets in a post-Brexit world?

The focus on policy is very timely. Following a long period of stagnation, work is being undertaken to influence and develop policies that will potentially impact on the arisings, composition, management, recycling and disposal of waste in England. At the same time, the European Union (EU), including the British Government, are debating the implementation of the EU’s Circular Economy Package. This could result in significant new policy impacts on fundamental aspects of waste management including new recycling and recovery targets for municipal and similar commercial and industrial (C&I) wastes.

However, concerns have arisen regarding the coherence of timing of the release of strategies that should line up with any targets that are agreed. BEIS’s Industrial Strategy, Defra’s Resources & Waste Strategy and the National Infrastructure Commission’s Waste Infrastructure analysis for 2020-2050 – all overlap to a greater or lesser extent in their ambition to ensure delivery of differing targets and their aim of a sustainable, circular economy.

Added to this uncertainty are the implications of Brexit and the associated concerns regarding how these overlapping policies and targets will be implemented in the short term, and whether the UK will develop policy independently from the EU over the long term. This makes it critical for the ESA to review policy options for the sector and identify the positions that would most benefit its members, the sector and the environment. Without policy certainty, there is a risk that the UK could continue to feel the impact of a loss of confidence by investors and that ultimately, the infrastructure required to address current and future waste management is not delivered.

## High Performance/Reasonable Cost?

THE FIRST step of the project has been to model different scenarios for reaching the municipal waste targets that we need to achieve in the (very) near future. Utilising publicly available data, a “stepwise” approach has been used to build on the existing performance baseline (business as usual) for both local authority collected waste and commercial and industrial waste in England.

For simplicity, local authorities have been grouped by rurality and collection service approach. Although this yields a broad-brush approach, the use of sensitivities has been used to account for some of the individual authority quirks (long-standing contracts, high levels of flatted properties etc). A number of levers have been identified that local authorities could “pull” to increase recycling rates. These levers have been modelled in isolation and then in an additive manner to identify what recycling rates could potentially be achieved and also how much it would cost.

### 2020

FOR THE 50 percent by 2020 target, we’ve assumed that this isn’t achievable given our current recycling rate and services. In a no-growth scenario we’d need to increase recycling rates by seven percent requiring either significant diversion or residual waste minimisation – something we haven’t been able to achieve in recent history. Although services are shifting and the 58 local authorities going out to procurement in the next three years should help to push through changes that will enhance performance this won’t come soon enough to allow us to hit the required target.

### 2030

A LONGER timescale provides an opportunity to implement some significant service changes to lift recycling rates, including the following scenarios for all authorities:

1. weekly collection systems transfer to alternate weekly collection (AWC)
  - a. an associated waste minimisation effect of five percent reduction in residual waste
2. a dedicated food waste collection is added to any local authority without one at present
3. AWC and source-segregated food waste collections

4. three weekly collections with a waste minimisation effect of three percent in residual waste
5. AWC and food waste collection (high yield) with additional communications
6. three weekly collection plus food waste collection (medium yield)
7. three weekly plus food waste plus absorbent hygiene products (AHP)
8. three weekly collection plus food waste plus waste electrical and electronic equipment
9. three weekly plus food waste plus textiles
10. all authorities go to three weekly plus source segregated food waste and a source segregated collection of AHP, WEEE and textiles.

Obviously, there are a number of authorities, particularly those within urban environments with large quantities of flats, which would not be able to make the transition to AWC, and these have been accommodated within the sensitivity analysis conducted. For the initial analysis, we've also assumed that garden waste collections maintain their current methodology, however, authorities remain under continuing financial pressure and may continue to move to a chargeable model with tonnages collected reducing.

What the emerging results demonstrate is that pulling the levers of reduced frequency residual waste collections combined with a source segregated food waste collection will get us to ~50 percent recycling rate by 2030 with cost to implement being approximately neutral (if implemented together or when making the change from AWC to a three-weekly residual waste collection). When we try and capture additional material streams the service costs increase, but we can reach a ~54 percent recycling rate.

### Commercial Waste

THE CRITICAL factor in us reaching an even higher level of performance is commercial waste. If all the levers are pulled

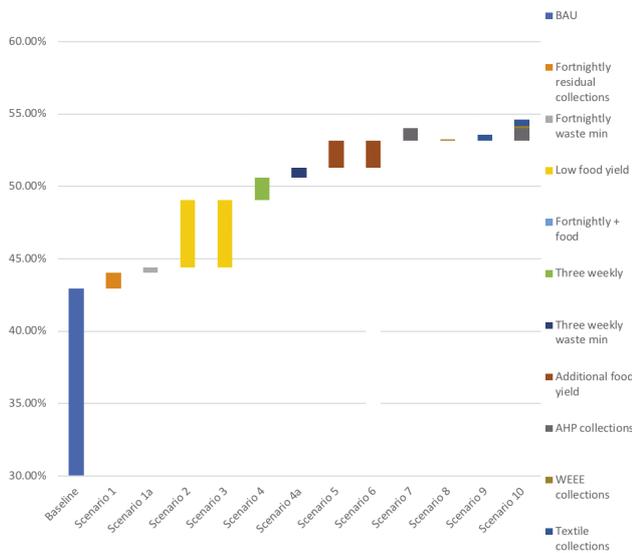


Figure 1: Impact of local authority service changes on recycling rate for LACW

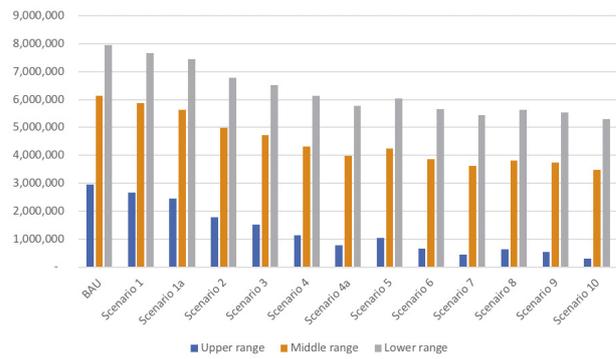


Figure 2: Capacity gap at a range of treatment estimates based on a 55 percent LACW recycling rate and 65 percent commercial and industrial recycling rate (upper middle and lower range refers to estimated treatment capacity)

for LACW we have the potential to achieve a ~54 percent recycling rate, if a recycling rate for C&I of ~55 percent is maintained. If this is stretched to a C&I rate of 60-65 percent then the overall performance would be uplifted, which would allow us to achieve the current proposals for the Circular Economy Package – but as noted at an increased cost to municipal services. If we could flex C&I recycling higher, then a more aspirational but pragmatic overall recycling rate could be achieved with a lower municipal recycling rate.

### Capacity Gap

HIGHER PERFORMING services should mean an ever-decreasing residual waste tonnage to dispose of, but this is balanced against the ever-increasing march of housing and economic growth and its associated impacts on waste generation.

The Tolvik report models LACW at approximately 55 percent and a C&I rate at 65 percent leading to a capacity gap of 3.5Mtpa in 2030 (for the medium scenario) which aligns with our results. What it does highlight is that it will cost our local authorities a lot of money to achieve this rate. Either we need to invest more in services with the hope of increasing performance levels or we need to focus our efforts on commercial waste – ideally a mixture of the two. It's clear that at current growth rates we will still be heading for a fairly substantial capacity gap for residual treatment infrastructure by 2030.

The next steps for the project are to finesse the analysis by undertaking a number of sensitivity analyses. This could include additional producer responsibility scenarios, light weighting of materials, waste minimisation – this could focus around plastics given the current “Attenborough effect”. Could we achieve 10 percent waste minimisation or at least slow waste growth over the next ten years? It will also include suggestions for alternative metrics that could be considered based on what is the environmentally best option for a material and as a result do we want to deliver policy to only stimulate recycling for recycling's sake?

From these results, we will then be able to frame some sensible policy suggestions that will balance aspiration and environmental performance with reasonable cost to deliver, but also frame the industries performance beyond simple recycling targets. ■

# All Aboard The...



# Apprentice-Ship



**Spencer Law**, managing director of Refuse Vehicle Solutions Ltd shares his views on apprenticeships... taken from his own humble beginnings

I started my career as an apprentice over 30 years ago. I wasn't particularly academic but I was good with my hands and I wanted to get out into the workplace to start earning some money. I became an apprentice HGV mechanic and my life-long passion for large trucks and refuse vehicles began.

Like a lot of people, I found that I learnt a lot more, and more quickly, doing the job rather than learning about it in a classroom – although, I do appreciate that it's important to

understand the theory as well as the practical side.

I'm a big fan of apprenticeships, not just because of my own experience but because I've seen first-hand how young people can thrive in a work environment. As well as gaining the right skills and knowledge for their chosen career path, they also learn life skills, like how to communicate with people of different ages and from all walks of life. In many cases they are learning from people with 20-30 years' experience



# RESOURCING THE FUTURE CONFERENCE 2018



A partnership event brought to you by



13 – 14 June 2018 –  
One Great George Street,  
London



## Zero avoidable waste by 2050: a new UK vision

Against the backdrop of the Defra 25 year Environment Plan and the forthcoming Resources and Waste Strategy, RTF 2018 will provide the ideal forum for resource and waste management professionals, policy experts, academics and government representatives to debate and shape a new policy framework that supports the delivery of the 'zero avoidable waste' vision.

### Key themes include:

- From design to disposal: resource efficiency in the product supply chain
- Eliminating avoidable plastics by 2042: priorities and pitfalls
- Reducing and recycling: renewing the focus on food waste
- 'Home & Away': building better secondary material markets

### PROMOTE YOUR BRAND AT RTF18

Prove you're passionate about resourcing the future and working with key organisations by putting your brand in the spotlight.

Contact Ginny Hunter on 01604 823346  
or email [ginny.hunter@ciwm.co.uk](mailto:ginny.hunter@ciwm.co.uk)

 Join the debate at #RTF18

Find out more and register your place at [www.ciwm.co.uk/rtf18](http://www.ciwm.co.uk/rtf18)

---

**9.30 – 10.00 Keynote Address:** Rt Hon Michael Gove MP, Secretary of State for Environment, Food & Rural Affairs (invited)

---

**Future resource and waste strategy**

Three interlinked sessions focus on the three themes set out by Defra for the forthcoming strategy:

- Maximising resource productivity – through more efficient manufacturing processes
  - Maximising the value from resources throughout their lifetimes – by designing products more smartly to increase longevity and enable recyclability
  - Managing materials at end of life – by targeting environmental impacts.
- 

**10.00 – 10.45 Part 1 – Made smarter: resource efficient manufacturing**

**Chair:** **Jurgen Maier**, CEO, Siemens UK (invited)

**Speakers include:**

**Professor John Barrett**, Professor of Energy and Climate Policy, Leeds University

**Alexandra Jones**, Director of Industrial Strategy, Department for Business, Energy & Industrial Strategy (invited)

---

**10.45 – 11.30 Part 2 – Designed smarter: durability, reusability, recyclability**

**Speakers include:**

**Matt Demorais**, Sustainable Business and Partnerships Manager, Unilever (invited)

**Susanne Baker**, TechUK – Circular materials; making it happen (invited)

---

**11.30 – 11.50 Refreshments & networking**

---

**11.50 – 13.00 Part 3 – Recycled smarter: targeting environmental impacts**

**Speakers include:**

**Jacob Hayler**, Executive Director, Environmental Services Association

**Cllr Martin Tett**, Chair, LGA Environment, Economy, Housing & Transport Board (invited)

---

**13.00 – 14.00 Lunch & networking**

---

**14.00 – 15.00 Breakout sessions 1**

**Session 1** – Waste crime: collaborative approaches to serious fly-tipping and illegal waste sites

**Session 2** – Rolling out Extended Producer Responsibility to challenging waste streams – learning from abroad

**Session 3** – Zoning: a different approach to MSW and commercial waste management in cities

---

**15.00 – 15.30 Refreshments & networking**

---

**15.30 – 16.30 Breakout sessions 2**

**Session 4** – A new dawn for communications: capitalising on the 'Blue Planet' effect

**Session 5** – Urban recycling: partnership approaches to inner city recycling

**Session 6** – Going for DRS – the latest developments

---

**16.30 – 17.00 Closing plenary**

---

**Find out more and register your place at**

**[www.ciwm.co.uk/rtf18](http://www.ciwm.co.uk/rtf18)**

# PROGRAMME - DAY 2

## 14 JUNE 2018

RESOURCING  
THE FUTURE  
CONFERENCE  
2018



---

**9.30 – 10.00 Keynote Address:** Robert Jenrick MP, Exchequer Secretary to the Treasury, HM Treasury (invited)

---

### 10.00 – 11.00 Materials and markets: the latest research

The findings of two research projects looking at materials flows, markets and policy interventions to increase the UK's reprocessing capacity and market demand will be launched in this session.

---

### 11.20 – 11.40 Refreshments & networking

### 11.40 – 13.00 Zero avoidable plastic waste by 2042

This session will look at the UK Plastics Pact, an ambitious collaborative initiative designed to turn the tide on the UK's growing issue of plastic packaging waste. The initiative will involve collaborative action and commitment by businesses, UK Government and devolved administrations, local authorities and NGOs. Speakers will also explore the challenges around non-packaging plastic and the UK's leadership role on marine plastics pollution.

**Speakers include:**

**Dr Marcus Gover**, CEO, WRAP (invited)

**Jonathan Perry**, Take Back Compliance Consultant, Dell (invited)

**Professor Ed Kosior**, CEO, Nextek Ltd

---

### 13.00 – 14.00 Lunch & networking

### Supporting secondary material markets

This session will provide the latest update on export markets for recyclables, including China, South East Asia, and Europe. Part 2 will explore what measures, incentives and innovation are needed for the UK to 'reshore' more of its recycling and strengthen domestic markets.

---

### 14.00 – 15.00 Part 1 – Beyond China; current and future export market trends

**Chair: Mike Smith**, Senior Advisor, Environment Agency

**Speakers include:**

**Wade Schuetzeberg**, executive director (Europe), America Chung Nam (invited)

Viridor Resource Management – speaker to be confirmed

---

### 15.00 – 16.00 Part 2 – Supporting the UK economy: building domestic markets

**Speakers Include:**

**Andrew Large**, Director General, Confederation of Paper Industries

**Dame Judith Hackitt DBE**, Supervisory Board, Hi Value Manufacturing Catapults (invited)

---

### 16.00 – 16.30 Summing up & close

---



#RTF18



Follow the conference live on social media!

# RESOURCING THE FUTURE CONFERENCE 2018



A partnership event brought to you by



## Put Your Brand In The Spotlight

Prove that you're passionate about the future of the sector by putting your company centre stage at RTF18. Sponsoring a leading, London-based resource conference will raise awareness of your brand and show your commitment to the cause.

We have a select number of sponsorship packages available for forward-thinking businesses, looking for high profile exposure to an engaged audience of delegates.

### Headline Conference Sponsor

As headline conference sponsor, you will benefit from significant exposure in the run up to the conference and a high impact presence at the event itself.

### Event App Sponsor – SOLD



### Breakfast Sponsorship

Benefit from early brand exposure on the first morning of the conference.

### Drinks Reception Sponsor

Introduce your business and network with delegates and speakers with our drinks reception package.

---

## Exhibit at RTF 2018

It's getting harder in today's competitive market to get your brand in front of the right audience, or to speak to key decision-makers who are vital for building valuable business relationships.

Exhibit at RTF 2018 and cut out the initial legwork, as we deliver you the perfect

audience of over 400 professionals from across the resource and waste sector, all ready to try new approaches and find innovative solutions to their challenges for 2018 and beyond.

Don't miss out – make sure your company is on the radar of influential sector leaders.

To talk through any of these opportunities please contact Ginny Hunter

E: [ginny.hunter@ciwm.co.uk](mailto:ginny.hunter@ciwm.co.uk) T: 01604 823346

Find out more and register your place at

[www.ciwm.co.uk/rtf18](http://www.ciwm.co.uk/rtf18)

behind them and benefiting from a lifetime's worth of knowledge.

It's important that we invest in the younger generation and equip them with the necessary skills, not just for them but also for succession planning so that we can continue to provide specialist services. You speak to any HGV operator and they will tell you how hard it is to find qualified mechanics with the right experience to do the job. The apprenticeship scheme is a great way to make sure that the next generation is learning the right skills, and in the right place, to provide a future for businesses such as ours.

I think some companies are put off because they think they will invest time, money and resources into training a young person only for them to up and leave when they are qualified. However, I believe much of that is to do with money and how you treat them. If you pay them what they are worth and value them, they will stay.

The Government states that apprentices must be paid the minimum wage but we always pay them above the statutory minimum and we have a salary structure in place once they reach 18 and have qualified. We believe strongly in creating a career path for them so they can grow with the business.

10 years ago, apprenticeships seemed to have all but disappeared from view and I'm glad the Government is now incentivising companies to take on apprentices. But, I think it could do more.

### Worthwhile Investment

THERE ARE lots of businesses that don't have to pay the Apprenticeship Levy as their annual salary bill is less than £3m, and they probably haven't considered taking on apprentices. The Government could do more to help these companies connect with local colleges to find young people who are keen to work for them.

We have forged great relationships with some local schools; we attend their careers fairs and open days, take a refuse truck along and talk to the pupils. The schools tell us how much the children enjoy hearing about the work we do, and the engineering and technology involved in the operation of the vehicles. They are surprised about the interesting opportunities that exist in the waste management sector.

Essentially, the way it works is that we recruit a school leaver and contact a college to arrange a suitable course. The college then arrange the funding. We pay something towards their course but it is usually subsidised to some degree by



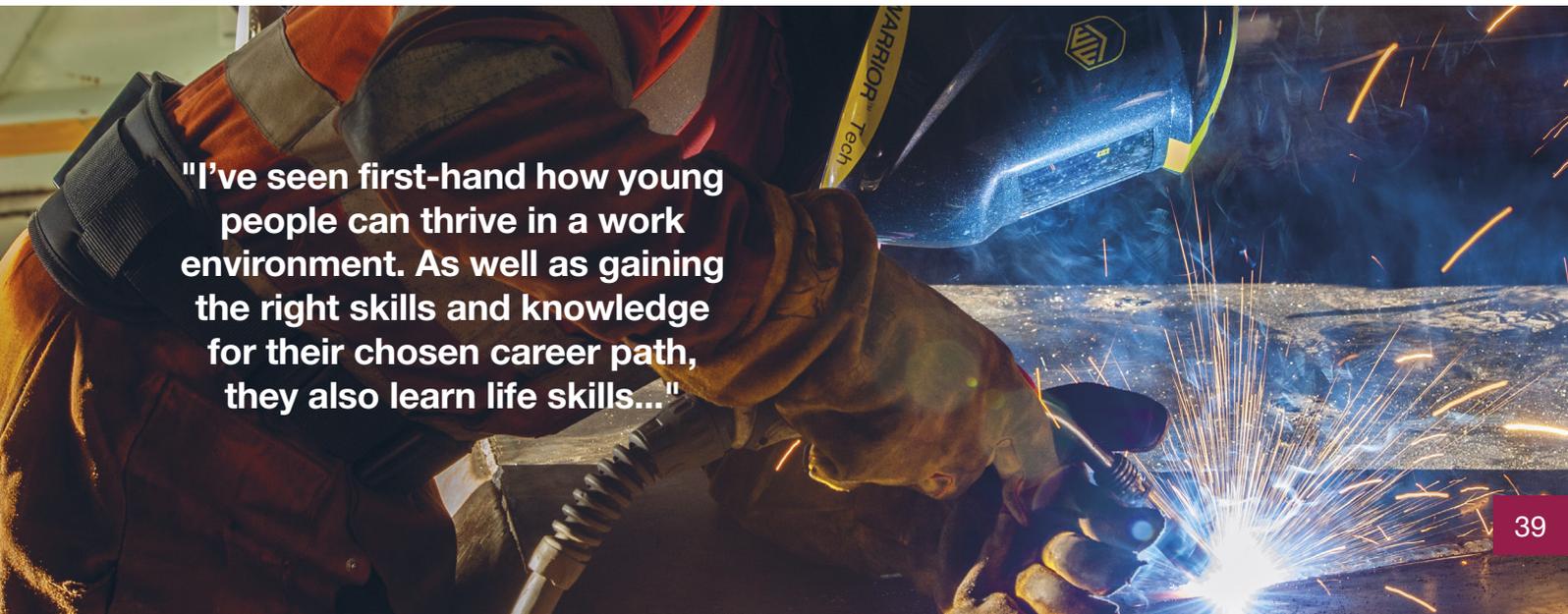
the Government. Alternatively, we take on young person who is already at college and set up their work placement with us. They either go to college on a day per week basis or sometimes it can be one week out of four or five. Whichever it is, we plan for it so it doesn't disrupt the business. We think it's a worthwhile investment.

Currently we have five apprentices across various departments – accounts, service administration and engineering – and when they have qualified, we will seek more apprentices to take their place. George Pearson (pictured above) joined us in November 2016, aged 18. It was his first job and first time in a work place. He works in our service department and is involved with the repair and maintenance jobs that are going through our workshop, completing job sheets, updating customers and managing engineers' timesheets. He has already completed his Business Admin Level 2 NVQ and is now working towards Level 3.

George said: "I did a year full-time at college but I learn a lot more being an apprentice. It's a good balance – learning on the job helps me get the grips with the theory and apply it to real work situations, and vice versa. I also get to speak to other apprentices on my course and hear about what they're doing.

"I have felt really comfortable and welcome at RVS since day one. The people are nice and down to earth, and everyone is treated equally. They're a great company to work for." ■

*RVS organises the National Refuse Championships, which raises money for The Alzheimer's Society. Visit [www.nationalrefusechampionships.co.uk](http://www.nationalrefusechampionships.co.uk)*



**"I've seen first-hand how young people can thrive in a work environment. As well as gaining the right skills and knowledge for their chosen career path, they also learn life skills..."**

# Euromash



CIWM Midlands Centre's **Martin Brocklehurst** reviews the 2017 skills exchange programme between Scandinavia and the UK, and looks forward to this year's programme...

This year is the year the EU will approve its legislative programme on the circular economy. Love or loath the EU, this programme will have a fundamental impact on the waste and resource management industry. Clear targets are being set to:

- reduce landfill to less than 10 percent of all municipal waste generated by 2035
- deliver 60 percent recycling rates for municipal waste by 2035
- to increase packaging recycling rates for:
  - plastic to 55 percent
  - wood to 30 percent
  - ferrous metals to 80 percent
  - aluminium to 60 percent
  - glass to 75 percent
  - paper & cardboard to 85 percent
- to provide for separate collections for household hazardous wastes and textiles by 2025 and organics by 2023.

In addition, the EU is fundamentally changing the way VAT is collected and introducing much

greater flexibility on the rates that member states can set on a wide range of materials, including secondary raw materials.

These two sets of changes will undoubtedly create new market opportunities for the use of secondary raw materials in EU manufacturing industries. With open borders, customs-free areas and free trade, I expect to see a fundamental shift from primary to secondary raw materials in many manufacturing sectors in the EU. This will drive faster change in the waste and resource management industry that will require new investment in separate collection systems, sorting technologies and processing equipment. The waste and resource management industry will become the supplier of secondary raw materials to industry, delivered to time, to an agreed quality, standards and price. Where that is not possible we will deliver energy and heat for our ever-growing urban areas. Landfill will reduce as a final destination to less than 10 percent of all our waste generated.

**CPD  
APPROVED**



Agneta Persson – looking over the compost turner machinery

Such an evolving industry will need to reskill the established workforce, change traditional working practices and develop sophisticated management and control systems capable of delivering exacting standards in raw materials supply. Our industry will also be driven by regulators to radically improve health, safety and environmental performance and match the improvements already seen in the construction sector. Additionally, we will see rapidly changing technologies introduced to measure and quantify secondary raw material flows as we add value across the supply chain.

It is against the background of this rapidly changing industry that we need to challenge our workforce to open minds to new and different ways of working. This challenge inspired the original EU-funded experiential learning programme (learning by doing) between the UK and Scandinavia. The Leonardo programme ran between 2013 and 2015 and saw 25 participants from 17 public and private UK waste management organisations travel from the UK to work and live in Sweden and Denmark for two-week periods. 28 companies in Denmark and Sweden received participants, many of whom had never worked in another European country. All experienced a different way of tackling waste management in countries already diverting almost all of their waste from landfill. Individuals developed new confidence and soft skills. Participants in the programme highlighted over 300 operational improvements affecting design of installations, equipment procurement and health and safety (H&S) management practices. Receiving companies were also challenged by UK participants to improve vehicle H&S checks

## Exchange & Development

### Blaby District Council chief executive Jane Toman:

"Eight members of Blaby District Council's Neighbourhood Services team attended the visit to Denmark and Sweden as part of the Leonardo exchange programme in 2015. Our employees returned with many incredible cultural and operational insights that manifested itself in real practical improvements that were ultimately incorporated in a new depot design, including state of the art workshop facilities and much improved staff welfare facilities. Another recurring theme from all the staff that visited was the healthy respect shown by both the waste collection staff and the Scandinavian public towards the workforce and for health and safety more generally.

"The experiences of our staff were shared across the whole team. An action plan was put in place with a view to fusing the best of the Scandinavian experience with the best of the Blaby experience. A hugely worthwhile exercise and I would thoroughly advocate any organisation whose ambition it is to learn, develop, and improve their services and workforce relations to embrace this opportunity."

and traffic segregation methods.

The success of this original EU-funded programme led all the partners to explore ways to continue the programme →





## WASTE GLASS RECYCLING TECHNOLOGY

Our equipment solutions are actively generating a quality glass output, suitable for endless reuse, irrespective of input.

[cdenviro.com](http://cdenviro.com)

once EU grants ended. A new self-financing programme was put together by Avfall Sverige (Sweden), DAKOFA, RAMBOLL and the City of Copenhagen (Denmark) and CIWM (UK). This programme was tested and launched as a pilot in 2017 with two candidates travelling from the waste to energy company SYSAV in Malmo Sweden to work at the AMEY Waste Treatment Site at Waterbeach Cambridge. RAMBOLL acted as the project secretariat, responsible for the logistics of the programme. DAKOFA and Avfall Sverige agreed to encourage Swedish and Danish companies to take part and to disseminate results whilst CIWM recruited UK companies.

### Skills Exchange

FOLLOWING THE success of the 2017 pilot, the programme is being operated again in 2018 with five participants expected to travel to the UK from Scandinavia. Currently participating UK companies offering to receive candidates include:

- AMEY
- Blaby District Council
- FCC Environment
- MES Environmental Ltd
- Viridor
- Warwickshire County Council
- North West Leicestershire Council.

The programme is expected to grow again in 2019 if we can secure sponsors and participant from the UK. We hope to send five candidates on exchanges in both directions. All participants are expected to develop learning objectives before departure, to keep a log of their experiences and to produce a final report highlighting lessons learnt that will be shared on the Avfall Sverige, DAKOFA and CIWM websites. In this way, we aim to ensure a skills exchange between Denmark, Sweden and the UK is shared not only between participating companies but more widely across our industry. Each year the exchange will take place in late October or early November with all participants receiving certificates to reflect continuous professional development goals. Costs for the exchange will be met by the sending company who will cover travel, accommodation and administrative costs. Support mechanisms have already been tested by the founding partners and these will continue in 2018 to ensure



### New Knowledge & Ideas

**Peter Engström, chief executive officer, Sysav, Malmo, Sweden:**

"As a receiving organisation in the exchange programme 2013-2015 we recognised that not only the participants from the UK, but also our own staff, gained knowledge and new ideas on H&S (and on other items as well) from the exchange. Therefore, we did not hesitate to send two of our own staff to the UK (AMEY Waste Treatment Site at Waterbeach Cambridge) on a two-weeks exchange.

"Agneta works at our sales department and Krisztina works at one of our recycling centers. It was a good thing that they could go together. This was the first exchange to UK and the small obstacles that inevitable occur were more easily solved by joining forces. Back home they have now prepared reports and the word is spreading within Sysav. Krisztina found useful ideas on how to promote and facilitate reuse at a recycling centre – a question we are looking at ourselves.

"We will not hesitate to send (or receive) people in the exchange programme; it promotes knowledge of waste processes and the understanding of cultures and habits somewhat different from our own."

emergency procedures are in place to support all individuals taking part.

Paul Frith, chair of the Midlands Regional Centre said: "The programme is seen as a value-added service for CIWM members and CIWM affiliated organisations in the UK. Offering a great way to learn what is happening across EU countries in a volatile and changing market and one in which staff are challenged to adapt and change to new working environments. The scheme is particularly useful for young entrants but has also been shown to deliver life-changing experiences for mature operational staff. Indeed, it works best when senior management identify and support staff from key areas of their business where they are looking to drive change and encourage a cohort of their peers to take part."

He added: "We will look to grow the programme in the years ahead and embed the exchange as a core regional activity. The Midlands Centre is already considering how we can increase the number of participants as we become more experienced in its application and potentially expand the number of countries taking part. Discussions have already started with Portugal for instance in how they may join the programme."

We are still looking for more UK companies willing to accept Scandinavian participants to work with them for two week in October / November 2018. We also need sponsors and UK participants prepared to help us expand the programme in 2019. Discussions on placements will take place this year during May and June. If you are interested in taking part or helping the programme to grow, please get in touch via the details below. ■

*Kirstin Roberts MCIWM, [kroberts@gateleyuk.com](mailto:kroberts@gateleyuk.com)  
Martin Brocklehurst MCIWM, UK project lead, 07500 043 485*

# Sustainable Remediation



**Paul Bardos** and **Hayley Thomas**, co-chairs of the UK Sustainable Remediation Forum, look at the principal components of risk-based land management and sustainable remediation, focusing on the UK, and how this works in practice...



**C**ontaminated land is a major global challenge. Large areas of contaminated or brownfield land exist in higher income countries, eg, ~2.5m sites are suspected across Europe<sup>1</sup> (300,000 of these in the UK<sup>2</sup>, although not all of these will need remediation). 126,000 sites in the USA are thought to be sufficiently polluted as to require remediation<sup>3</sup>. Lower and middle-income countries also suffer substantial land contamination problems. Significant problems include persistent organic pollutants (eg, see [www.iHPA.info](http://www.iHPA.info)); mercury contamination particularly from small scale gold mining; contamination of agricultural land (eg, nearly 20 percent of farmland in China is thought to be contaminated<sup>4</sup>) and discharges from large scale industrial complexes and processing facilities. Environmental remediation is also an important economic activity with an international market size estimated at \$65bn each year<sup>5</sup>. Over the past 20-30

years many sites have been treated and approaches have matured in many countries. The international technical consensus is that contaminated land decision making should be made on the basis of risks to human health and the wider environment<sup>6</sup>, and that risk management should also meet sustainable development principles<sup>7</sup>: sustainable risk based contaminated land management (SRBLM). This combines the use of risks as a basis for contaminated land management and the importance of managing risks in a sustainable way (aka "sustainable remediation"). In 2017, the ISO published a standard ISO/DIS 18504<sup>8</sup> "Soil quality – Sustainable remediation" that describes a broadly agreed approach to achieving sustainable remediation.

Land contamination has a strong connection to waste management, both in terms of being in large part a historical legacy of poor waste management practice, and also

remediation being a source of waste streams, or indeed potential recyclates. The UK actually has a world-lead in managing recyclates from remediation projects through a waste management code of practice managed by CL:AIRE<sup>9</sup>. This short paper describes the principal components of risk-based land management and sustainable remediation, focusing on the UK, and how this sustainable and risk-based approach to land management works in practice.

## Good Practice

RISK IS a function of the scale of an impact and the likelihood of that impact occurring. Risk assessment provides a logical framework for contaminated land management decisions: determining the most substantive risks and mitigating them. This allows remediation resources to be prioritised where harm is likely to be greatest. This might either be in

Figure 1: courtesy of the University of Southampton



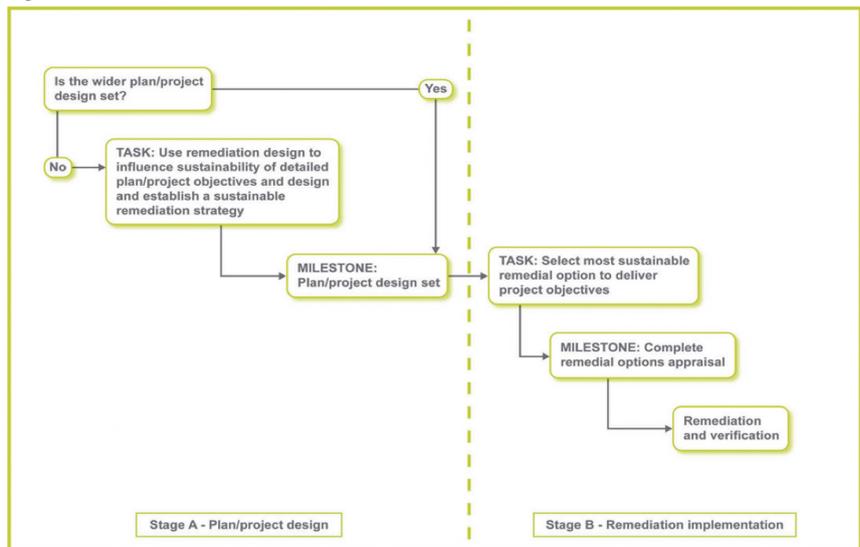
terms of determining which sites need remediation most urgently, or within a site which particular contamination issues are of the greatest impact to particular receptors such as human health, water or ecology. Understanding risks also allows decisions to be made that remediation is not needed, ie, on sites where there is no unacceptable harm<sup>10</sup>. For a risk to be present (see Figure 1) there needs to be a source (of hazardous substance or property), a receptor (which could be adversely affected by the contamination) and a pathway (linking the source to the receptor). A receptor might be a human, ecology, water resources, but also a building or an ecological “good or service” provided by the wider environment. This combination of a source-pathway-receptor is sometimes referred to as a contaminant (or pollutant) linkage.

Good practice in contaminated land management is to collate information about suspected or actual contaminated sites in a conceptual site model (CSM), which summarises the various contaminant linkages identified at a site. This model is developed iteratively, for example initially these contaminant linkages may be only potential pollutant linkages, and further site assessment then takes place to substantiate whether they are plausible or not. Remediation then proceeds on the basis of breaking these linkages.

Effective remediation strategies depend on a sound CSM that identifies all of the key contaminant linkages that need to be addressed to mitigate harm, and the consequent risk reduction objectives required. This makes available three broad types of intervention:

1. source management – removal or immobilisation of the source term
2. pathway management - prevention of the migration of contaminants along pathways
3. receptor management – action to prevent receptor access to a pathway, a very common approach is an “institutional control” such as a temporary prohibition of use of water from an impacted well. Typically, receptor management is less favoured as it accepts a reduction in functionality, but in some cases, it is unavoidable. Another form of receptor

Figure 2



intervention is a planning control, such as limiting the future land use to an industrial purpose.

Management at the source or pathway may be by an engineering approach such as excavation and removal or containment, such as by an impermeable barrier, or a treatment-based approach. A treatment is a biological, chemical or physical intervention that either destroys, stabilises or removes contaminants.

From an idealistic point of view the preference would appear to be treatment of the source, in situ or, if necessary, *ex situ*. However, they are typically incomplete, leaving a significant proportion of the contaminant mass in-ground, especially for extractive techniques. Hence most remediation strategies combine some form of source management intervention with a pathway management intervention. As a simplified example, for fuel spills some form of extraction of the source term and enhanced bioremediation for residual source materials and dissolved substances in the groundwater pathway. This process integration provides a “belt and braces” approach to ensuring the potential of harm to receptors of concern is effectively prevented.

However, remediation interventions can be associated with significant sustainability impacts, for example transfer of contaminants to another site or to the air, energy and materials costs, impacts on local communities

and often rather high economic costs. Limitations on land use can also be a significant impact. Consequently, the concept of “sustainable remediation” or “sustainable risk based land management” are also increasingly recognised.

### Thought Leaders

OVER THE past 10 years or so sustainability considerations have become more widely recognised in contaminated land management, and are now formally described, and widely accepted as crucial to remediation planning and implementation. In broad terms, this is simply the application of the principles of sustainable development to soil and groundwater remediation projects. The UK has been one of the international “thought leaders” in the international development of sustainable remediation. Interest and uptake is proliferating across the world. Professionals in many national Sustainable Remediation Fora (SuRFs) and the International Sustainable Remediation Alliance (ISRA) collaborate to promote sustainable remediation on a global basis<sup>11</sup>.

SuRF-UK define sustainable remediation as: the practice of demonstrating, in terms of environmental, economic and social indicators, that the benefit of undertaking remediation is greater than its impact and that the optimum remediation solution is selected through the use of a balanced decision-

Table 1: Benefits from a sustainable and risk based approach to contaminated land management

Benefits from a risk based approach	Additional benefits from a sustainable approach
<ul style="list-style-type: none"> <li>• Objective understanding of likely harm</li> <li>• Methodological framework and rationale for effective remediation</li> <li>• Ability to prioritise resources to the most significant / urgent problems</li> </ul>	<ul style="list-style-type: none"> <li>• Better optimised risk management</li> <li>• Potentially additional benefits and value (eg, renewables from brownfields)</li> <li>• Identifying and avoiding project risks</li> <li>• Demonstrable compliance with government and/or corporate policies and goals for sustainable development</li> <li>• Positive impact on reputation/public relations and community/society</li> </ul>

making process. Hence good practice in contaminated land management should encompass both mitigating all significant (ie, unacceptable) risks from land contamination present, but it must do so sustainably, delivering net benefit in terms of social, economic and environmental factors, and adopting a balanced and inclusive decision-making process. SuRF-UK published a UK framework for the delivery of sustainable remediation in 2010, which was welcomed by all of the regulatory authorities across the UK. It has continued to develop guidance ever since, and this is all free to view and download from [www.claire.co.uk/projects-and-initiatives/surf-uk](http://www.claire.co.uk/projects-and-initiatives/surf-uk).

It would be wrong to draw the conclusion that sustainable remediation is all about “end of pipe”: ie, deciding how best to manage the impacts of remediation work. It is true that in many cases the constraints surrounding a site (for example its planned built redevelopment) will dictate the risk management goals needed. In this case, the most sustainable outcome will be an optimisation of the remediation approach needed to achieve these predefined goals, what SuRF-UK describe as “Stage B”. However, considering remediation earlier on in the project conceptualisation can lead to major sustainability gains, for example by redesigning the configuration of a project to avoid unnecessary or unnecessarily intensive remediation interventions. SuRF-UK describe this decision making as “Stage A” (See Figure 2). An important part of SuRF-UK’s mission is to convey the importance of sustainability, and the remediation industry’s contribution to this, to other professions, in particular those working in planning and development. There are really important benefits to be had from a sustainable and risk based approach to contaminated land management (see Table 1).

Government agencies have not been slow to see the added importance of sustainable remediation in better contaminated land management practice. Not only is sustainable risk-based land management optimising the environmental, economic and social outcomes from remediation, but it also helps those authorities deliver their sustainable development obligations under the Planning System and contribute to achievement of national / international sustainable development goals.

In conclusion, remediation is a necessary burden to remedy the mistakes from the past, but by applying sustainable risk based land management principles we can ensure the remediation activities themselves do not create new problems, and indeed positively contribute to achieving sustainable development. ■

### Acknowledgements

THE AUTHORS are grateful for the help and advice of all members of the SuRF-UK Steering Group and in particular Dr Jonathan Smith (Shell) and Ms Nicola Harries (CL:AIRE).

### References

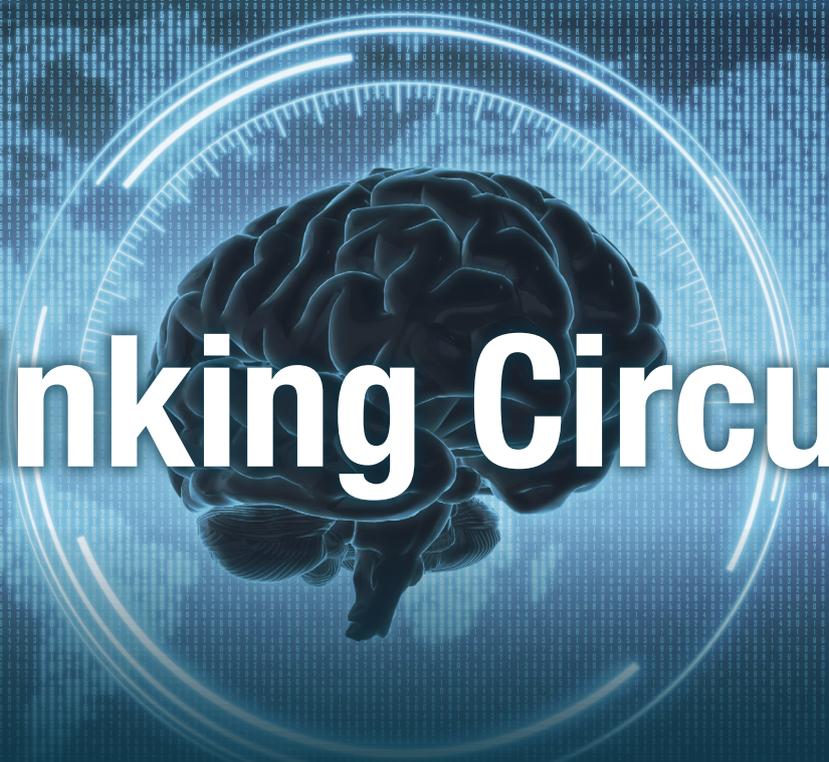
1. EEA, 2014 <https://www.eea.europa.eu/data-and-maps/indicators/progress-in-management-of-contaminated-sites>
2. House of Commons, Environmental Audit Committee, Soil Health, May 2016 <https://www.publications.parliament.uk>
3. National Academy of Sciences (2012) Alternatives for Managing the Nation’s Complex Contaminated Groundwater Sites.
4. [www.theguardian.com/environment/chinas-choice/2014/apr/18/china-one-fifth-farmland-soil-pollution](http://www.theguardian.com/environment/chinas-choice/2014/apr/18/china-one-fifth-farmland-soil-pollution)
5. [www.reportlinker.com/p02584389/](http://www.reportlinker.com/p02584389/)

Global-Markets-for-Environmental-Remediation-Technologies.html

6. Vegter, et al. (2002) Sustainable Management of Contaminated Land: An Overview. Report. Austrian Federal Environment Agency on behalf of CLARINET, [www.commonforum.eu/publications\\_clarinet.asp](http://www.commonforum.eu/publications_clarinet.asp).
7. Rizzo, Bardos *et al.* (2016) Comparison of international approaches to sustainable remediation. *Journal of Environmental Management* 184, 4-17
8. [www.iso.org/standard/62688.html](http://www.iso.org/standard/62688.html)
9. [www.claire.co.uk/projects-and-initiatives/dow-cop](http://www.claire.co.uk/projects-and-initiatives/dow-cop)
10. Eg, as set out in the “Model procedures for the management of land contamination”. Environment Agency R&D Report CLR11, 2004. Environment Agency, Bristol, UK. [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/297401/scho0804bibr-e-e.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/297401/scho0804bibr-e-e.pdf)
11. [www.claire.co.uk/projects-and-initiatives/surf-international](http://www.claire.co.uk/projects-and-initiatives/surf-international)

*Hayley has more than 10 years’ experience in the contaminated land and brownfield sector. She works as a hydrogeologist for Shell Global Solutions in the Netherlands and supports soil and groundwater risk management activities in the UK, Europe and Africa. She is co-chair of the Steering Group of the Sustainable Remediation Forum in the UK.*

*Paul has more than 20 years of experience in soil science and biology; contaminated land and brownfields, waste treatment and risk management, particularly biological treatment technologies, sustainability assessment, soil and water issues. He is managing director of r3. He co-chair of the Steering Group of the Sustainable Remediation Forum in the UK and a Qualified Person for review the evidence relating to the proposed use of materials under the Definition of Waste: Development Industry Code of Practice.*



# Thinking Circular



ISWA National Committee member **Professor Ian Williams** says it's now "fashionable" to talk about resource efficiency as he looks back at the 2016 CIWM South West & London & Southern Counties Centre New Member Network ahead of this year's event

**T**he CIWM South West & London & Southern Counties Centre New Member Network held an event that focused on "Developments in Circular Economy Thinking" on 8 November 2016. The event was held at the University of Southampton and organised by myself and the Environment Agency's Tessa Bowring.

The so-called circular economy is attracting a lot of attention. It is fashionable for politicians, industrialists and businesses to talk about "closing the loop", ensuring "resource security" and "resource efficiency", and "joining the circular economy." A circular economy is an industrial system that is restorative and regenerative by intention and design. It aims to keep products, components, and materials at their highest utilities and values in an industrial system. It helps preserve and enhance natural capital, optimise resource yields, and minimise or even reverse adverse environmental impacts in order to achieve a better balance and harmony between economy, environment and society. However, it is still a largely untested theoretical construct. The aim of this workshop was to explore how circular economy (CE) thinking was impacting on businesses in evidence-based practice rather than in theory, and to see what lessons could be learned from hard-won experience.

The first speakers, Matt Jane and Carolyn Crouch, jointly representing the snappily-named South Coast Affinity Group (SCAG) consortium, discussed the benefits and challenges of a collaborative waste contract. SCAG is an innovative shared services project that aims to deliver significant environmental benefits through sustainable waste management. The group and contractor (SUEZ Environmental) work together through a partnership

approach to deliver an innovative pay-by-weight contract with the focus on CE thinking rather than waste management. Since its inception, the consortium contract has led to increased recycling rates at all of the member sites, significant financial savings and diversion of waste from landfill. This contract is an excellent example of similar organizations collaborating with professionals from within their own sustainability, operational, procurement and financial groups for mutual financial and environmental benefit.

The second presentation, given by myself, focused on real-world examples of how CE thinking has been applied to large and small businesses. Drawing on examples from around the world, Ian illustrated how this approach is genuinely:

- incentivising waste reduction and high-quality separation by consumers
- minimising costs of recycling and reuse with separation and collection systems
- facilitating industrial clusters that exchange by-products to prevent them from becoming wastes (industrial symbiosis)
- encouraging wider consumer choice through renting or leasing instead of owning products.

The keynote speaker was Gev Eduljee, external affairs director at Suez Environmental. Gev's fascinating and timely presentation focused on the CE post-Brexit and the potential subsequent development of an industrial strategy. His key recommendations were that the UK needs to:

- design a resource management package to future-proof the UK economy against resource shocks
- link the UK's industrial strategy with a resource

- management strategy
- pass a Resource Management Act to bind the circular economy
- embed energy-from waste in a joined-up energy policy, including use of heat
- stimulate domestic markets for recycled and recovered products
- develop product policies that incentivise reuse, remanufacture and service models.

Gev's overarching message – that the CE is a massive opportunity that needs policy action to make it happen – was the main topic over conversation as delegates networked over the lunch break.

After lunch, Oliver Rosevear, Costa Coffee's energy & environment manager, flagged Costa's approach to corporate responsibility and illustrated how the company has addressed reduction, reuse, recycling and recovery. For example, in 2012, Costa moved from a plastic milk bottle to milk pouches and thus reduced the plastic used by 94 percent. He also highlighted Costa's collaboration with FareShare to redistribute food to charities across the UK and its "Grounds for Grounds" programme in which customers can collect coffee grounds and use them as a natural fertilisers or a deterrent for pests.

At the other end of the business scale, Chanel Cornelius from 918 Coffee Co based in Dorset, showed how she and her

husband Justin's ambition to run an environmentally-friendly coffee business led them to develop a "coffee eco-system" to ensure that no waste was created during coffee production and consumption. Their multi-award-winning approach has produced innovative solutions that include reuse of coffee grinds, disposable cup and foil coffee bag recycling systems, and a tree-planting scheme in collaboration with customers.

The final speaker was the Centre for Environmental Science's Dr Peter Shaw, who focused on food waste and

the CE. Peter illustrated how the hierarchy of food waste could be used alongside approaches that recognise the properties and nature of food and food waste to minimise losses and waste at all stages of the food chain. He also signposted the challenges associated with food processing and confusing messages inadvertently provided by local authorities that focus on food waste collection for recovery rather than waste prevention.

Tessa Bowring closed the event, which was attended by over 60 delegates, and reminded us of the benefits of the NMN system, including enabling new members to participate in the work of the CIWM, encouraging dialogue between new and established members and introducing career opportunities in waste management to young people. The NMN event held at the University of Southampton is becoming a fixture in the calendar, with the next event to be held in November 2018. ■

*"The so-called circular economy is attracting a lot of attention. It is fashionable for politicians, industrialists and businesses to talk about closing the loop, ensuring resource security and resource efficiency"*



## Connected fleet specialists

**Drive down costs**  
**Stay compliant**  
**Increase efficiency**

To find out more telephone **01793 487488**  
 or email [sales@supatrak.com](mailto:sales@supatrak.com)

[www.supatrak.com](http://www.supatrak.com)



# What Doesn't Kill You...



A Fellow of CIWM and currently the interim strategic waste lead for Bristol City Council, **Jim Perkins** looks at the long list of things (and people) that were set to bring our sector to its knees. But as he says, in light of the latest challenges, such as Brexit and China's ban, what doesn't kill you makes you stronger...

**A**s the headline says, what doesn't kill you... and we've had a few things that could be argued to have tried (and failed) to do just that:

- the green glass mountains of the 1990s
- pre-treatment of waste requirements
- landfill tax escalator
- the animal by-products regime
- EN643
- statutory targets
- the cessation of the deposit return scheme for glass (yes, we've been here before)
- the Landfill Allowance Trading Scheme (LATS)
- TEEP (what is technically, environmentally and economically practicable to do)
- Sir Eric Pickles
- the Certificate of Technical Competence & Technically Competent Manager requirements
- over capacity in the sector... and under capacity
- the closure of landfills
- transfrontier shipments
- the WEEE & REEE regimes
- China's green fences (1, 2 & 3!)
- and now, China's proposed contamination limits coupled with Brexit...

I'm sure older and wiser heads will be able to add to the list above, which represents just some of the sector-ending issues and pressures we have faced in waste and resources over the last 20 years or so.

Through hysterical reporting and sometimes equally hysterical waste sector reaction (myself included on occasion), each instance represented "the biggest threat ever to the waste sector" when, in fact, it was just the biggest threat since the last biggest threat.

Each had the reported potential to destroy public sector budgets and private sector investment and profits,

turning these risks into opportunities until they merely become business as usual for us all.

## Meeting The Challenge

CHINA'S STANCE on its environmental protection should be applauded, no matter how inconvenient it may currently be for our industry, or how

"Through hysterical reporting and sometimes equally hysterical waste sector reaction (myself included on occasion), each instance represented 'the biggest threat ever to the waste sector' when, in fact, it was just the biggest threat since the last biggest threat"

when in fact each instance provided the industry catalyst for progressive and inclusive problem-solving, ingenuity, investment, a change of mind-set, industry collaboration, the advancement of new technologies, the creation of better services, smarter procurements, local partnerships and academic research, all focused on solving these issues in a sustainable way, rather than merely trying to "work round" them.

We may be one of the oldest services in the country, but we sometimes forget we are one of its newer sectors, still sometimes at odds with itself and given to a degree of self-doubt and nervousness. To the understated credit of this sector – and the individuals within it – to date we have never failed to rise to a challenge set before us,

uncompromising its position is, all it is doing is raising the bar on what will ultimately provide a higher quality product being generated, bought and sold around the world.

I have no doubt that the UK's waste industry will again meet this challenge with even better processes and mechanisms being created and put in place to ensure these quality protocols are met. Collection authorities must also play their part in improving the quality of the recyclables they collect, recent examples still show some horrific levels of contamination within recyclables whilst others are evidencing contamination rates of less than five percent, giving the



processors and reprocessors a fighting chance to achieve China's thresholds for mutually financial benefits.

For those of you with a non-selective memory, history has shown that we in the UK are not completely blameless when it comes to exporting "recyclables" that may not be as clean, reusable or recyclable as we may have stated (if at all)! Thankfully, and largely thanks to legislative, financial and industry bar-raising, those days are largely behind us.

Also bear in mind that we used to exist in a world without the luxury of a "China" providing us with a path of least resistance in terms of who we broker our recyclables to. Established markets across Europe, Scandinavia and North America were extensive and extensively used and kept our waste brokers sharp, commercially proactive and always ready to explore new markets and new outlets. We may need to be ready with a robust Plan B should (when) China closes its doors for good in the future. It is reassuring that some key industry players are already reporting that new markets are being investigated,

stimulated and secured to provide this alternative brokerage option.

The same very much applies to the post-Brexit agenda and, apart from a corporate, industry-wide furrowed brow, endless discussions and expensive conference debates on "what ifs" and "maybes", nothing has actually changed and nothing has actually been decided yet in terms of the future drivers for our industry. We all know there's a lot to do in terms of checking, testing, rationalising, transposing and creating new, sustainable and deliverable legislation and delivery models for a post-Brexit world, but I'm not running panic-stricken into the streets until I know that I definitely need to.

As with all the challenges our industry has faced over the years, Brexit must rate as our biggest and most important *opportunity* to date. For the first time,

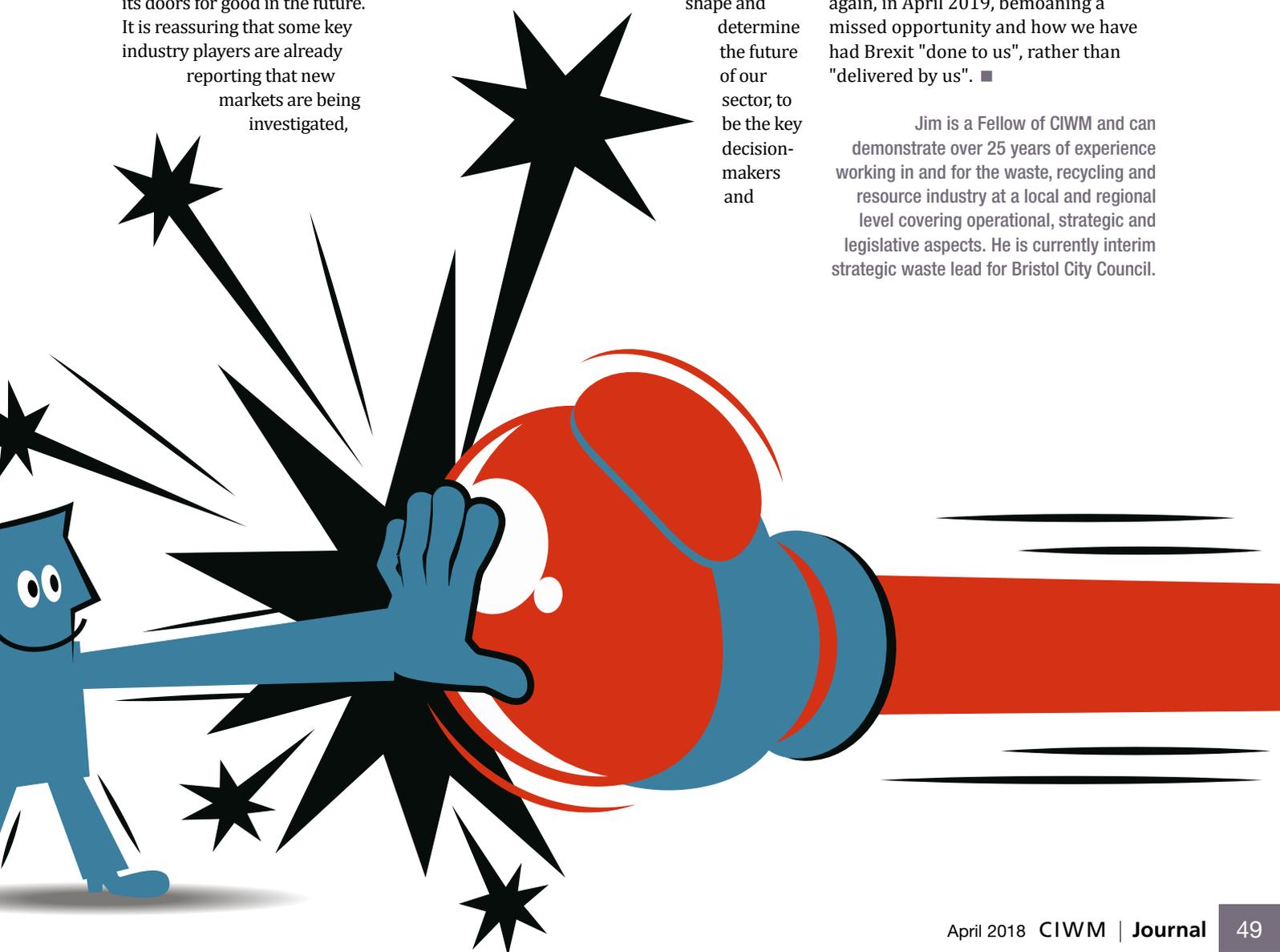
we have the collective  
opportunity to  
shape and  
determine  
the future  
of our  
sector, to  
be the key  
decision-  
makers  
and

influencers in what and how we deliver our strategies, business plans and services, whilst taking the opportunity to embrace and integrate the increasingly co-dependent energy and circular economy agendas into everything we do and every way we think.

In conclusion, I appreciate that public sector budgets need to be protected – as do private sector profits – but self-interests may need to be put to one side to ensure we, collectively as a sector, don't miss out on the opportunity to be in charge of our own destiny.

I have no doubt that the right conversations are being held between the right people at the right level, and I urge all government, ESA, CIWM and LARAC members and leaders to continue to develop these discussions proactively and constructively to provide a stable and sustainable future for all parts of the waste and resources sector. I would not want to be writing again, in April 2019, bemoaning a missed opportunity and how we have had Brexit "done to us", rather than "delivered by us". ■

Jim is a Fellow of CIWM and can demonstrate over 25 years of experience working in and for the waste, recycling and resource industry at a local and regional level covering operational, strategic and legislative aspects. He is currently interim strategic waste lead for Bristol City Council.



# Will The Circle Be Unbroken?



The "circular economy" has become part of the waste and resources vernacular, as **Gev Eduljee** explained in the part one of this article in the March issue. Here, he continues his look at the origin of the term in the second of his two-part report. . .

Following part one's look at the history of the phrase "the circular economy", policy developments and specific activity in countries such as the UK, Japan, France and Germany, part two looks at its role in the world of business and the challenges that still lie ahead...

## The Circular Economy & Business

THE WORLD Bank (2009) points out that while governments have a vital part to play, their role is as a "promoter and enforcer rather than as a leading actor". The latter role requires the full support and participation of the business community and consumers. Much effort has been spent in recent years, promoting the business case for circularity.

Most prominent amongst these efforts has been the work of the Ellen

MacArthur Foundation (EMF). Its first report (EMF, 2012) encapsulates the objectives of circularity as follows: "A circular economy is an industrial system that is restorative by intention and design... products are designed for ease of reuse, disassembly and remanufacturing – or recycling – with the understanding that it is the reuse of vast amounts of material reclaimed from end-of-life products, rather than the extraction of new resources, that is the foundation of economic growth... the circular economy... aims for the elimination of waste through the superior and innovative design of materials, products, systems, and, within this, business models."

The report estimated net material savings of \$340-630bn across the EU and \$1tr annual growth for the global economy by 2025. A follow-up report (EMF, 2013) estimated \$700bn worth of savings in consumer materials alone, together with benefits in land productivity and potential job creation. EMF (2015a) estimated growth in resource productivity by up to three percent annually, generating a primary resource benefit of \$0.6tr per year by 2030 to Europe's economies and generating €1.2tr in non-resource and externality benefits, a GDP increase of seven percent relative to the current development scenario.

For the UK, WRAP (2014) estimated an additional 205,000 extra jobs, unemployment reduction of 54,000 and a 11 percent offset of future losses in skilled employment in Britain by 2030, while it also (2015) estimated 3m extra jobs and unemployment reduction by 520,000 across the EU by 2030.

Much recent work has been towards the development and articulation of alternative business models to the "take-make-dispose" model of the linear economy (EMF, 2015b). Accenture Strategy (2014) identified five new business models:

- Circular Supplies – provides fully renewable, recyclable or biodegradable resource inputs that underpin circular production and consumption systems
- Resources Recovery – enables a company to eliminate material leakage and maximize the economic value of product return flows
- Product Life Extension – allows companies to extend the lifecycle of products and assets. Value is maintained by repairing, upgrading, remanufacturing

Part 2





Social pressures influence behaviours relating to purchase and retention of products – even if a product was designed for longevity, changing fashion may still consign it to the disposal bin.

Sustainable consumption goes hand-in-hand with sustainable and efficient use of resources, but it remains the least studied aspect of the circular economy, and decidedly more difficult to tackle because it is more behavioural than technocratic. The challenge is to leverage a regretted purchase into a non-purchase. For electrical goods, Roberts *et al* (2017) found that “the quality and functionality of the product appears to have been the greatest concern”. The link between sustainable consumption and ecodesign is clear.

## Circular Economy Challenges

THE ESSENCE of the circular economy concept is that it should drive a balanced set of policy instruments on both the supply (waste) and demand (production) side of the economic cycle. Circular economy policy has thus far focused overwhelmingly on the waste management cycle.

This exposes a particular vulnerability of the circular economy: the inter-connectedness of the production economy with the management of waste and secondary resources. Because a viable business model for the creation of secondary materials relies on reliable and predictable offtake markets, any weakness in the latter will impact the entire management chain, right down to the collection of these materials as a discard.

Hence the emphasis commentators have placed on the development of so-called “pull” measures to help build resilient markets for these additional secondary materials, balancing out the “push” measures so beloved of policy-makers – such as high recycling targets and landfill bans. Concentrating on the latter to the exclusion of the former will merely destabilise the circular economy.

The importance of demand-side pull measures is apparent when the implications of supply-side measures such as higher recycling rates, are considered. According to BioIS (2011), in 2008 a total of 184m tonnes of secondary raw materials (SRM) such as paper, metals and plastics was generated EU-wide. Assuming the 50 percent recycling target required by Directive 2008/98/EC is achieved by 2020, an additional 156m tonnes of SRM will be generated – an 84 percent increase over 2008. Even at current recycling levels the EU exports about 25 percent of the SRM generated. Higher recycling targets only exacerbate the problem if markets, for whatever reason, were not conducive to placing these additional tonnages of SRM.

## Conclusion

THE CIRCULAR economy is firmly embedded in policy-making, and is acknowledged as a corrective to the take-make-dispose model that dominates the global economy. However, significant challenges must be overcome if the concept is to scale up from the level of some individual businesses to become the macroeconomic model of choice for sustainable growth. For this, appropriate policy interventions addressing ecodesign and the demand side of the economy need to be introduced, so as to level the playing field for businesses taking the long view. ■

## References

- Accenture Strategy (2014). Circular Advantage. [www.accenture.com](http://www.accenture.com)
- BioIS (2011). Implementing EU Waste Legislation for Green Growth. Report to the European Commission, Brussels.
- Boulding K E (1966). The economics of the coming spaceship Earth. In Environmental quality in a growing economy, ed H Jarrett, Johns Hopkins University Press.
- Club of Rome (2016). The Circular Economy and Benefits for Society: A study pertaining to the Czech Republic and Poland, Zurich
- Ellen MacArthur Foundation (2012, 2013). Towards the Circular Economy I and II, Cowes.
- Ellen MacArthur Foundation (2015a). Growth Within: a circular economy vision for a competitive Europe. Cowes.
- Ellen MacArthur Foundation (2015b). Towards the Circular Economy: Business rationale for an accelerated transition. Cowes.
- European Commission (2005). EU Thematic Strategy on the Sustainable Use of Natural Resources. COM(2005) 670, Brussels.
- European Commission (2008). The raw materials initiative. COM(2008) 699 final, Brussels.
- European Commission (2011). Roadmap to a resource-efficient Europe. COM(2011) 571 final, Brussels.
- European Commission (2012). European Resource Efficiency Platform (EREP) - Manifesto and policy recommendations. Brussels.
- European Commission (2014a). Towards a circular economy: a zero waste programme for Europe. COM(2014) 398 final, Brussels.
- European Commission (2014b). Commission Staff Working Document Impact Assessment, SWD (2014)17, Brussels.
- European Commission (2015). Closing the loop: An EU action plan for the circular economy. COM(2015) 614 final, Brussels.
- Gong Y, Sarkis J, Ulgiati S and Zhang P (2013). Measuring China's circular economy. *Science* 339: 1526-1527.
- Ji X, Zhang Y and Hao L (2012). Analysis of Japanese circular economy mode and its inspiration significance for China. *Advances in Asian Social Sciences* 3: 725-730.
- Jin I (2016). Circular economy policy in Korea. In *Towards a Circular Economy: Corporate Management and Policy Pathways*, ed. Anbumozhi V and Kim J, ERIA Research project Report 2014-44, pp 163-184.
- Masi D, Day S and Godsell J (2017). Supply chain configurations in the circular economy: a systematic literature review. *Sustainability* 9: 1602-1624.
- Murray A, Skene K and Haynes K (2017). The Circular Economy: An interdisciplinary exploration of the concept and application in a global context. *J Business Ethics*, 140:369-380.
- Natural Scotland (2016). Making things last: a circular economy strategy for Scotland. The Scottish Government, Edinburgh.
- OECD (2013). *Material Resources, Productivity and the Environment*, Paris.
- Pearce D, Turner RK (1990). *Economics of natural resources and the environment*. Harvester Wheatsheaf, London.
- Roberts T, Hope A and Skelton A (2017). Why on earth did I buy that? *Phil. Trans. R. Soc. A* 375: 20160373. <http://dx.doi.org/10.1098/rsta.2016.0373>
- Scottish Government (2016). A manufacturing future for Scotland. The Scottish Government, Edinburgh.
- Skelton A and Allwood J (2017). Questioning demand: a study of regretted purchases in Great Britain. *Ecological Economics* 131: 499-509.
- UN Global Compact (2013). The UN Global Compact-Accenture CEO Study on Sustainability 2013. [www.unglobalcompact.org](http://www.unglobalcompact.org).
- UNEP (2006). *Circular Economy: An alternative for economic development*. UNEP, Paris.
- Wilts H (2016). Germany on the road to a circular economy? Friedrich Ebert Stiftung, Bonn.
- World Bank (2009). *Developing a circular economy in China: Highlights and recommendations*. Policy Note, World Bank, Washington.
- WRAP (2013). WRAP's vision for the UK circular economy to 2020. [www.wrap.org.uk](http://www.wrap.org.uk)
- WRAP (2015). *Economic Growth Potential of More Circular Economies*. Banbury.
- Zink T and Geyer R (2016). There is no such thing as a green product. *Stanford Social Innovation Review*, Spring 2016.

# Is the time right for a “reuse revolution”?



**Paul Taylor**, FCC Environment says Sir David Attenborough has succeeded where many of us in the industry have failed, and says if we get it right now, the days of the UK being a “throwaway culture” could be numbered...

**S**ir David Attenborough has succeeded where many of us in the industry have failed. He’s managed to get policy-makers thinking more carefully about how we manage our waste.

For us, this willingness to debate is welcome, although long-overdue. As many within our sector will know, for a long time now UK waste policy has been largely ignored and deprioritised. In the interim, the waste and resources sector has been allowed to reach a critical juncture.

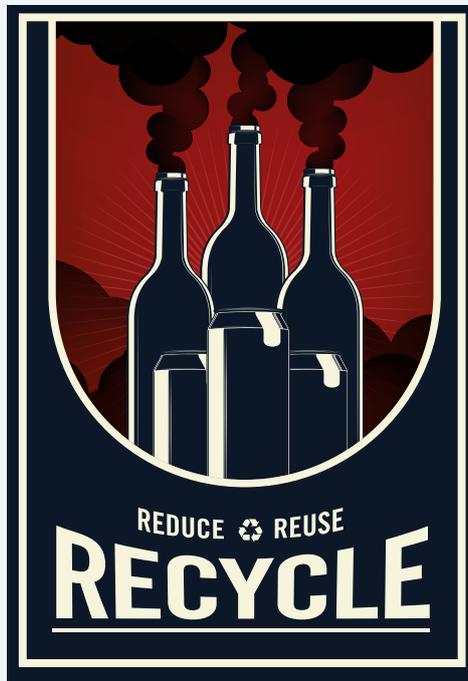
We fear that recent developments – particularly in relation to the Chinese ban on low-grade imports – will place even more pressure on our waste management systems, exacerbating the UK’s chronic capacity gap, and ultimately hampering us from achieving our aim of a cleaner, healthier planet.

This needs to now be addressed and quickly.

What we now need is an honest conversation about whether the systems we have in place are adequate, and what type of waste management system we’d like to see implemented. But I wonder if part of the solution could, in fact, be staring us in the face. And that partial solution is reuse.

For most people outside our sector, “reuse” and “recycle” are one and the same. Of course we know differently, and so I would argue that there is an onus on us as waste management professionals to start insisting on differentiating between the two. If we do, we could start to see a host of benefits.

Reuse has played a key role in FCC’s commercial operations for some time now. We operate schemes up and down the country, which includes a number of reuse stores where items dumped at local HWRCs are salvaged and used again. These items – which have included everything from a medical skeleton to a German World War II Rangefinder – are then sold via our on-site charity shops, which we run in partnership with local charities and local authorities.



There are tangible environmental benefits to reuse, too. We run a number of schemes where we rescue and repair old bicycles from our HWRCs, which are then sold on. Our scheme in Barnsley, which we run in partnership with Barnsley Council and Cycle Penistone CIC, a government-funded community project that specialises in cycle repair and rental, has just been shortlisted in the public / private partnership category at the LGC Awards 2018, after we announced that our scheme had saved more than 130 bikes from landfill.

So far, there’s a clear case in favour of reuse. However, one major barrier stands in the way of increasing its uptake, and that is policy. Currently, reuse does not count towards the UK’s recycling targets, which have been set at

65 percent by 2035 by the EU. This is perverse logic and is understandably a disincentive for businesses and local authorities to prioritise reuse.

In 2016, Spain was the first European country to set a separate and binding national reuse target. Its new waste management plan specified that 50 percent of waste needed to be recycled and prepared for reuse. Within this, at least two percent of furniture, textiles and electrical items would need to be redirected from both landfill and recycling to be sent for repair and resale. If we can’t include reuse as part of our recycling targets, ought we to be following suit and demanding separate reuse targets?

But the reality is that we might now be in the right position to change this. Although we still need clarity as to what the future holds for us outside of the EU, what Brexit does provide us with is an opportunity to overhaul our approach to waste, and have a discussion about the role of reuse and all its associated economic, social and environmental benefits. If we get it right now, the UK’s “throwaway culture” could see its days numbered. ■



# Year Environment Plan

Denton's Annabel Hodge and Laura Mackett look in greater detail at the Government's recently published – and long-awaited – 25-year plan for the environment...

The idea of a 25-year framework to maintain and improve natural capital was first proposed by the Natural Committee Capital (NCC), an independent advisory committee to the Government, back in March 2014. Following increasing pressure from the NCC, on 11 January 2018 Defra published its long-awaited 25-Year Environment Plan (the Plan), which sits alongside the Industrial Strategy and the Clean Growth Strategy.

The Plan sets out the Government's aspirations for protecting and enhancing the natural environment over the next quarter of a century, with the intention to "leave our environment in a better state than we found it".

The Plan is far-reaching, covering all areas of environmental concern from waste reduction and resource efficiency to clean air, water, climate change and biodiversity. It is intended to be an ever evolving and continually updated document – Government intends to engage in regular reviews and risk assess the Plan at least every five years.

With Brexit looming, it was hoped that the Plan would provide clarity on the direction in which UK environmental policy is heading. Whilst the Plan does outline a promising roadmap, it lacks detail. It is effectively a roadmap without street names. That said, it may be unrealistic to expect more at this stage – the point of the

Plan is big picture thinking. It sets generational goals and provides a blueprint upon which legislation and policy can be formed.

## Resource efficiency & Waste Targets

CHAPTER 4 of the Plan covers "increasing resource efficiency and reducing pollution and waste". Its ambitions include:

- eliminating all avoidable waste by 2050
- eliminating all avoidable plastic waste by 2042
- cutting by one fifth the greenhouse gas intensity of food and drink consumed in the UK, and also per capita UK food waste by 2025
- working towards no food waste entering landfill by 2030.

"Avoidable" is defined as what is TEEP (Technically, Environmentally and Economically Practicable). This provides leeway for Defra but it also enables what is considered to be "avoidable" to evolve with the Plan and as technology improves. Whilst there is no clear guide as to how the Government believes it will achieve the above-mentioned targets, the Plan does emphasise the benefit of regulation, taxes and charges in contributing to cleaner growth, citing landfill tax and the aggregates levy as examples of success.

## A Focus On Plastics

UNSURPRISINGLY, FOLLOWING the increased social awareness of the impact of single-use plastics and the so-called "Attenborough effect", a relatively large section of the Plan is dedicated to plastics. Although the Government previously expressed a preference for industry-led voluntary measures to reduce plastic waste, the Plan suggests there will be a move towards legislative action.

To reduce plastic flow into the seas and meet its zero avoidable plastic waste by 2042 target, the Government proposes a four point action plan, taking action at each stage of the product lifecycle. This includes:

### 1. Production Stage –

encouraging producers to take more responsibility for the environmental impacts of their products and rationalising the number of different types of plastic in use by, amongst other things, (i) "working with industry to rationalise packaging formats and materials formats", (ii) "reforming our Producer Responsibility systems (including packaging waste regulations) to incentivise producers to take greater responsibility for the environmental impacts of their products" including "exploring extending producer responsibility

requirements not currently covered by our existing regimes”, and (iii) “building on our microbeads ban by exploring whether we can ban other problematic materials where suitable alternatives exist”.

2. **Consumption Stage** – reducing the amount of plastic in circulation through reducing demand for single-use plastic. Actions for this consumer-focused stage include extending uptake of the 5p plastic bag charge to small retailers on a voluntary basis (it currently only applies to retailers with over 250 employees), supporting water companies and retailers to offer new free refill points for drinking water bottles, and working with retailers and WRAP to “explore introducing plastic-free supermarket aisles”.
3. **End of use stage** – making it easier for people to recycle.
4. **End of life/waste management stage** – improving the rate of recycling, through measures including “ensuring that a consistent set of materials are collected by all local authorities” and “working with the waste management industry and re-processors to significantly increase the proportion of plastic packaging that is collected and recycled” (although no clarity is provided on what “significant” may mean).

EU policy appears to be following a broadly similar direction. For example, the new European Plastics Strategy, launched in January as part of the wider Circular Economy Package, addresses single-use plastics. The European Commission’s Vice President has also confirmed that EU legislation on single-use plastics will be published by summer 2018.

## A New Regulator

THE GOVERNMENT has confirmed that it will consult in “early 2018” on setting up a new independent environmental body to hold Government to account. The Plan states that it will be a “world-leading, independent, statutory body” aimed at “championing and upholding environmental standards as we leave the EU” and it will likely have a role in “scrutinising and advising” on the Plan.

Legislation will be required to create such a body. Creating it from statute and not from delegated legislation would entail greater legislative scrutiny and could help ensure that it does not have funding and political ties to Defra, however no detail has been provided as yet on how this body will be funded. There is also no information yet on how the enforcement function would operate, however commentators have suggested it may first deal with infringements via negotiation rather than a full complaints procedure, and turn to the Supreme Court for the final say over which claims are brought to court.

Whatever shape that the body takes, it is clear the Government faces a real challenge in setting it up and funding it by 29 March 2019 (the point at which we are set to leave the EU).

## Industry Engagement

OVER THE next few months the Government intends to publish a number of consultations and calls for evidence. These include consultations on single-use plastics and on the new statutory body, both planned for “early 2018”, and a call for evidence (already published and expiring on 18 May 2018) to explore how changes to the tax system or charges could be used to reduce the amount of single-use plastic waste. A new Environment Act may also be on the cards – this is unlikely to materialise for at least another year, but we should all keep an eye out for more detailed proposals on this. Industry also needs to watch out for the Resources and Waste Strategy, to be published “in 2018”, to gain a clearer picture of the potential impacts of the Plan.

## The 25-Year Ambition

WHILST THE Plan lacks detail, it does not lack ambition. The vision created by the Plan is not yet strong enough to replace the clear strategic direction of environmental law set out by the EU, but it is certainly a promising start. It outlines a strong Government commitment to resource productivity and zero “avoidable” waste and sets clear next steps.

We would encourage industry to seize the numerous upcoming opportunities to help shape the detail and implementation of this Plan. ■

**A Nottinghamshire company has been fined £15,000 for operating an illegal waste site on land adjacent to Sandy Lane in Worksop.** The company was also ordered to pay costs of £7,200 and a victim surcharge of £120. The case against Yorkshire Waste Services Ltd of Gateford Road, Worksop, was proven in the absence of a company representative at the trial on Friday 2 March 2018 at Mansfield Magistrates’ Court. Officers from the Environment Agency told the court that the site had been previously used by a company called Trent Valley Recycling Ltd. The site itself is one with a high fire risk due to the waste operations conducted by the previous owners. This company did have an environmental permit for the site, however this was disclaimed once the company went into liquidation. Officers discovered that Yorkshire Waste were storing a significant quantity of baled textile waste on the site between April and June last year.

**A South Devon waste processing company has been ordered to pay £16,404 in fines and costs for failing to remove thousands of tonnes of hazardous waste from two sites in Torbay.** Armabridge Ltd, trading as Skip-It Torbay, operates from a waste transfer station at Barton Hill Way, Torquay. In July 2017 an Environment Agency officer visited its Kerswell Gardens site and found hazardous waste was present and that a previous enforcement notice had been breached. The company was fined a total of £13,334 and ordered to pay £3,070 costs by Plymouth magistrates after pleading guilty to two offences of failing to comply with enforcement notices relating to Barton Hill Way and Kerswell Gardens, Torquay contrary to Regulation 38(3) of the Environmental Permitting (England and Wales) Regulations 2010.

**A Newcastle man has been fined for operating a vehicle scrapyard without a permit in a prosecution brought by the Environment Agency.** Ronald Coulson Vincent Grieveson, 23, of Forest Hall, appeared at Newcastle Magistrates’ Court on February 23. He pleaded guilty to illegally storing and treating waste vehicles and parts without a permit. He was fined £3,628, and ordered to pay costs of £3,273.58 and a victim surcharge of £362. Acting on behalf of the Environment Agency, solicitor Chris Bunting told the court Grieveson had been operating an illegal waste site without an environmental permit.

# Masters Of Disguise?



There are growing concerns that exemptions are being used to disguise illegal waste activities. So, hot on the heels of the charging review, comes the EA's exemptions review.

Do we need to be concerned? Waste Plan Solutions' **Lara Ayriss** explains more...

**T**he EA has growing concerns about the use of exemptions to disguise or hide illegal waste management activities. In response they have issued a consultation that proposes some major changes.

All the exemptions are under review, but those listed below have been earmarked for special attention:

- U1 – Use of waste in construction
- U16 – using de-polluted vehicles for spares
- T4 – Preparatory treatments such as baling, sorting and shredding
- T6 – Treating wood waste and plant matter
- T8 – Mechanically treating end of life tyres
- T9 – Recovering scrap metal
- T12 – Manually treating waste
- D7 – Burning waste in the open
- S1 – Storing waste in secure containers
- S2 – Storing Waste in a secure location

The Environment Agency is concerned that the tonnages that can be processed under an exemption are too high. In an effort to reduce the abuse of exemptions the tonnages allowed are being reduced substantially. In many cases they are also restricting permitted storage times and reducing the types of waste that can be accepted.

The construction industry commonly registers U1 exemptions. Exemption U1 is currently for the use of up to a total of 5,000 tonnes of specified waste types in construction and over 40,000 are registered in England and Wales.

The EA emphasise that the U1 exemption is for recovery only and the EA inspections have revealed operational breaches which include disposal operations. In order to counter this, it proposes significant restrictions on the use of this exemption. This includes a reduction in permitted waste types and assessment of sensitive receptors prior to use, and it cannot be used unless the waste has already been segregated. Therefore, wood and plastic contamination (window frames, etc) would not be allowed under the exemption.

The specified uses controls have been subdivided into classifications A to I, with each classification having a limit on the tonnage. For example, classification B: sub-base for roads, 1.2m<sup>3</sup> of waste per metre of track and a maximum fill thickness of 300mm, no contamination permitted.

The use of storage exemptions has also been identified as a potential risk by the EA. The current exemptions allow the storage of flammable materials, such as paper and cardboard, which pose a significant fire risk. To reduce these risks the EA has proposed a reduction in the volume of waste that may be stored down to 40m<sup>3</sup> for a single waste type on the S2 exemption, which loosely relates to the size of a roll-on/roll-off waste container and an overall limit of 186m<sup>3</sup> for all waste. Another restriction is storage time limits are being reduced to three months. The flammability issue is to be addressed by the assessment of fire prevention with new exemptions having to comply with the EA's Fire Prevention Plan guidance. In addition, tyres are to be removed from the exemption completely.

The T4 exemption allows the baling, sorting and shredding of recyclable materials such as paper, cardboard and plastics. The EA has again identified this exemption because of its fire risk potential. To combat this, it has reduced storage limits to three months, reduced maximum annual tonnage throughput to 500 tonnes, individual waste types to 100m<sup>3</sup> and maximum storage of all waste to 300m<sup>3</sup>.

The proposed changes in the exemptions will force some operations to downscale, or upgrade to a full permit. This must have an impact on the recycling industry. It should encourage the current environmental permit holders because the down-scaling of exemptions will "level the playing field".

Whether this will help or hinder the national recycling and waste crime statistics remains to be seen.

There are many other far reaching changes, some of which you may need to make yourself aware. To find out more follow the link to the Defra consultation pages. ■

<https://consult.defra.gov.uk/waste/crime-and-poor-performance-in-the-waste-sector/consultation/suppage.2017-11-21.8124334074/>



Ancillary Services



CMS SupaTrak provide vehicle telematics and integrated solutions to the waste management sector, which include driver behaviour management, mobile working, in cab communications and job scheduling systems.

[www.supatrak.com](http://www.supatrak.com)

Ancillary Services



**EPIC**  
Quick change graphics...

A quick to install, easy to change mobile messaging system that is produced & installed by our own in-house trained team to guarantee you a cost effective way to increase your marketing without breaking your budget

[www.epicmediagroup.co.uk](http://www.epicmediagroup.co.uk)

Bins, Banks & Containers



CONTENUR integrated container solutions for homes and businesses in over 30 countries. Manufacturers of waste and recycling containers, street furniture and underground refuse systems.

For all enquiries:  
 ☎ +44 1282 604400  
 ✉ enquiries@contentur.com  
 Visit us at: [www.contentur.co.uk](http://www.contentur.co.uk)

Bins Banks & Containers

Best Quality. Best Service. Best Choice.



Tel: 0800 032 4289  
 enquiries.uk@crainer.com  
[www.crainer.co.uk](http://www.crainer.co.uk)

Bins, Banks & Containers

**Egbert Taylor**  
Group

The Next Generation of  
Waste Management Solutions

01299 251 333  
[www.egberttaylorgroup.com](http://www.egberttaylorgroup.com)

Bins, Banks & Containers



**RESOURCE CONTAINERS**  
ENABLING THE CIRCULAR ECONOMY

**HOOKLIFT CONTAINERS AND SKIPS**  
in stock now for immediate delivery!

Benefit from the UK's largest production capacity and stock of CHEM standard containers – British made at our ISO 9001 factory. Call us on 01543 360777 or email sales@gjffabrications.co.uk See our stock at <http://www.gjffabrications.co.uk/stock/>

Bins Banks & Containers



QUALITY WASTE & RECYCLING SOLUTIONS

Always delivered on time...

☎ +44 (0)1775 769 011  
 ☎ +44 (0)1775 766 064  
 ☐ www.mjl-skipmaster.com  
 MJL Skipmaster Ltd, Bourne Road, Pode Hole, Spalding, Lincs, PE11 3LL

Body Manufacturer



British-based Dennis Eagle is a world leader in the design and manufacture of refuse collection vehicles. We are committed to providing the very best vehicles and service for our customers.

Visit [www.dennis-eagle.co.uk](http://www.dennis-eagle.co.uk) or call 01926 458500

Body Manufacturer



Farid Hillend Engineering Ltd provides the waste industry with a most comprehensive range of efficient refuse and recycling vehicles engineered to provide quality, reliability and durability.

[www.hillendeng.com](http://www.hillendeng.com)

Body Manufacturer



[www.geesinknorba.com/uk](http://www.geesinknorba.com/uk)

Geesinknorba are Europe's leading & most innovative supplier of RCVs & static compaction equipment offering a complete range of body and lifter sizes

Body Manufacturer



For the largest range of recycling vehicles in the UK plus award winning plastic bodies call or visit: **01902 365 880**  
[www.ntm-gb.com](http://www.ntm-gb.com)

CCTV Safety Systems



25 years of supplying industry excellence

- Live CCTV streaming
- Cyclist detection
- Auto-brake Radars
- Dashboard Cameras

[www.vision-techniques.com](http://www.vision-techniques.com)  
 01254 679717  
 info@vision-techniques.com

Consultancy



Supporting your waste and resource projects

[www.woodplc.com](http://www.woodplc.com)

Consultants / Developers



Having been developers, operators, contractors and advisors for over 20 years, Honace provide cost effective experience and knowhow to support the waste, mineral and land development sectors. We are also interested in site management, purchase or lease opportunities.

[www.honace.com](http://www.honace.com)

Embedded Generation



by people for people

- Energy from Waste
- AD/ Biogas
- Power Generation (CHP)
- Renewable Energy
- Energy Trading
- Portfolio Management
- Equity investment

[www.engie.co.uk](http://www.engie.co.uk)

Finance



THE SINGLE MINDED BUSINESS BANK

[www.aibgb.co.uk](http://www.aibgb.co.uk)

Fire Detection



Early warning smoke, flame and heat video detection from NetVu, the leader in video surveillance and fire detection. Contact us today

call: 01928 706 400  
 email: enquiry@firevu.co.uk  
[www.firevu.co.uk](http://www.firevu.co.uk)

Flue Gas Treatment

Clear flight, clean future



Manufactured according to Lhoist's proprietary Hydratex™ technology.

[www.sorbacal.com](http://www.sorbacal.com)

Gov-Waste Software

iWDMS & iWaste+



[www.openskydata.com](http://www.openskydata.com)

Insurance



INSURING THE WASTE INDUSTRY FOR OVER 25 YEARS

TEL: 020 7977 4800

[WWW.MILESSMITH.CO.UK](http://WWW.MILESSMITH.CO.UK)

O Licence Compliance

**Invergold ASSOCIATES LTD**

- For your complete O licence compliance
- Transport managers service
- Transport Audits to DVSA earned recognition standard
- Public Inquiries
- DVSA Interviews Supported
- Operator Awareness Compliance training
- Driver Analysis software

T. 0333 335 0074  
[www.invergoldlogistics.com](http://www.invergoldlogistics.com)  
[info@invergoldlogistics.com](mailto:info@invergoldlogistics.com)

Plant & Equipment

**LADYBIRD SPECIALISED PLANT**

Skip Moving Innovation – Introducing the GAPO radio remote mobile power unit. Moving hook-lift skips – safer, quieter, faster, cheaper. Call now to arrange a demonstration.

[www.gapo-uk.co.uk](http://www.gapo-uk.co.uk)

Recruitment

**WasteRecruit**

Recruitment specialists in: Resource management, recycling and renewable energy.

We specialise in search and selection and provide both permanent and temporary staffing solutions.

Call **01252 353 080** quoting CIWMDIR2016 to start your search today.



Recycling

**Hadfield** Wood Recyclers

**CELEBRATING 35 YEARS**

a unique, forward thinking company

- Award-winning specialist wood recycler
- Nationwide service
- All grades of wood waste accepted
- Short & long term contracts available

[www.hadfield.co.uk](http://www.hadfield.co.uk)

Recycling Plant

**KIVERCO RECYCLING PLANT**

Kiverco design and build solid and robust recycling plant for the waste processing industry

[www.kiverco.com](http://www.kiverco.com)

**BUILT WITH BACKBONE**

Renewable Energy

**olleco**

Olleco serves the food industry. We supply premium cooking oils to commercial kitchens and provide resource recovery services; collecting used cooking oil and food waste which are then converted into renewable energy and used in the UK.

[www.olleco.co.uk](http://www.olleco.co.uk)

Road Sweepers

**STRONGER THROUGH EXPERIENCE**



**Johnston SWEEPERS**

[www.johnstonsweepers.co.uk](http://www.johnstonsweepers.co.uk)

Sweepers & Spreaders

**BUNCE**

powered by **hoschung**



[bunce.co.uk](http://bunce.co.uk)  
 01793 710212

Training

**CIWM TRAINING**

Develop your team and ensure your organisation is compliant with CIWM's sustainability, resource and waste management training.

[www.ciwm.co.uk/training](http://www.ciwm.co.uk/training)

Vehicle Hire

**CTS Municipal Vehicle Hire**

- Short to medium term hire
- Flexible & competitive
- Modern diverse fleet
- 24 hr nationwide service & support

[www.ctshire.co.uk](http://www.ctshire.co.uk) | Tel: 01453 511050 |

Vehicle Hire

**Gullivers**

Specialists in General & Municipal vehicle hire.

National Hotline Numbers:  
 General: 0845 260 0999 & Municipal: 0870 850 9990

[www.gullivers.co.uk](http://www.gullivers.co.uk)

• SHORT WHEELBASE VANS • LONG & EXTRA-LONG WHEEL BASED VANS • BOX VANS • TRAILERS • TRACTOR UNITS • MERCEDES MAN, DMS, RENAUUT • PEX-REG TRACTOR UNITS • PIPERS • TIPPER GRABS • HOOK LOADERS • SKIP LOADERS • RCV's • TWIN PACKS • VARIOUS MAINTENANCE VEHICLES • CRASH CUSHIONS • MVC / HVC • KILOWHALE • VACUUM • SHORT WHEELBASE VANS • LONG & EXTRA-LONG WHEEL BASED VANS • BOX VANS

Vehicle Hire

**M6 VEHICLE HIRE**

Tel: 0121 326 3077 [www.m6vehiclehire.co.uk](http://www.m6vehiclehire.co.uk)

**For all your Refuse Vehicle Hire needs, from 7.5-tonne to 26-tonne RCVs and 32-tonne Front-End Loaders.**

**Call us now for a competitive and reliable service.**

Vehicle Hire

**SFS Specialist Fleet Services**

- Contract Hire & Leasing
- Flexible Fleet Management
- Vehicle Workshops
- Local Authority Specialists

[www.sfs.co.uk](http://www.sfs.co.uk) 01604 234 601

Vehicle Safety Systems

**BRIGADE Vehicle Safety Solutions**

[www.brigade-electronics.com](http://www.brigade-electronics.com)  
 +44 (0)1322 420300  
[sales@brigade-electronics.com](mailto:sales@brigade-electronics.com)

Waste Management

**AMEY**

Creating better places to live, work and travel

One-stop for flexible, cost effective recycling and waste management

[wasteenquiries@amey.co.uk](mailto:wasteenquiries@amey.co.uk) **amey**

Waste Management

**BROAD GROUP**

Delivering high quality tailored waste management, renewable energy and alternative fuel supply services

[info@broadgroup.com](mailto:info@broadgroup.com)  
[broadgroup.com](http://broadgroup.com)

Waste Management

**CDenviro**

**RECOGNISING THE VALUE IN WASTE**

Recycling today's waste into tomorrow's resource.

[www.cdenviro.com](http://www.cdenviro.com)  
 01208 860010

Waste Management

With 24 facilities nationwide, CSG offer an array of waste management services including hazardous and non-hazardous waste collection in bulk, IBC and drums, interceptor clearances, tank cleaning and emergency spills response.

For further information:  
 t: 0800 048 0622 [www.csg.co.uk](http://www.csg.co.uk)  
 e: [technicalsales@csg.co.uk](mailto:technicalsales@csg.co.uk)

**Cleansing Service Group**  
 Waste Solution Specialists

Waste Management

For more information contact your local dealer.



**JCB WASTEMASTER**

0800 581761 [www.jcb.com](http://www.jcb.com)

Waste Management

**35 YEARS EXPERIENCE IN WASTE MANAGEMENT**

Waste Rebates, Asbestos, Recycling, Commercial Waste and more...



**MICK GEORGE**

[www.mickgeorge.co.uk](http://www.mickgeorge.co.uk) | 0800 587 3329

Waste Management

**WASTE MANAGEMENT SERVICES**

RECYCLING SOLUTIONS    WASTE MANAGER PORTAL    ZERO WASTE TO LANDFILL

**valpak** 0345 068 2572  
www.valpak.co.uk

Waste Management

**WasteCare**

Your solution for hazardous and difficult waste

0800 091 0000  
www.waste.care

Waste Recycling Shredder

M&J PreShred  
mobile waste shredder

Phone: 0 7341 885 553  
jan.frahm@metso.com  
www.metso.com

**metso**

Waste Software

**AMCS**

Enterprise Software and Vehicle Technology.  
www.amcsgroup.com

Waste Software

**isys** DELIVERING SOLUTIONS

We are a leading software house providing integrated solutions to the **Waste, Recycling and Aggregate** sectors, including mobile applications across our wide range of products.

01332 380311  
www.isys-systems.co.uk

Weighing Equipment

**MOBA MEANS ... ALL FROM ONE!**

**WWW.MOBA-AUTOMATION.COM**

Weighing Equipment

**VEHICLE WEIGHING SOLUTIONS LTD**

**WVS** VEHICLE WEIGHING SOLUTIONS

**WVS**, the UK market leader in on-board weighing, bin-weighing and axle load protection, will be presenting its impressive range of British manufactured load cells and weighing systems.

Visit **www.vwsitd.uk**

Wheel Loaders

**KOMATSU WHEEL LOADERS**  
Built for the waste & recycling industry

01527 512 512  
marubeni-komatsu.co.uk

**KOMATSU**

To advertise here phone us on: 01604 620426



Environmental | Resources | Waste



Find your perfect job in environmental, resource or waste management

New Job Site, New Job, New You

CIWM have launched a brand-new, fully responsive jobsite with a fresh look and feel, perfectly positioned to help you find your next step in the environmental, sustainability and wastes sector.

Create an account and upload your CV at [www.ciwmjobs.co.uk](http://www.ciwmjobs.co.uk).

NEW ORGANISERS FOR 2018

12 & 13 SEPT 2018 | NEC  
NEC, BIRMINGHAM



# RWM

IN PARTNERSHIP WITH



## THE UK'S LARGEST RECYCLING & WASTE MANAGEMENT EXHIBITION & CONFERENCE

PACKED WITH NEW SUMMITS, CASE STUDIES, PANEL DEBATES, SEMINARS, WORKSHOPS AND KEYNOTE TALKS, RWM HAS NEVER HAD SO MANY REASONS TO ATTEND

**500**  
INNOVATIVE  
EXHIBITORS

**350**  
EDUCATIONAL  
SEMINARS

**CPD**  
ACCREDITED  
WORKSHOPS

**LIVE**  
PRODUCT  
DEMONSTRATIONS

NETWORKING WITH **12,000** WASTE PROFESSIONALS • **FREE** ACCESS TO **4** ENVIRONMENTAL EVENTS

### REGISTER FOR **FREE TICKETS**

[WWW.RWMEXHIBITION.COM](http://WWW.RWMEXHIBITION.COM) | [@RWM\\_Exhibition](https://twitter.com/RWM_Exhibition) | [#RWM2018](https://twitter.com/RWM2018)

Enquire about exhibiting: call Nick Woore on 0117 929 6083