

CIWM Position Paper

**RESOURCES AND WASTE MANAGEMENT IN THE DEFRA 25 YEAR
ENVIRONMENT PLAN: SUBMISSION TO THE NATURAL CAPITAL
COMMITTEE**

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CIWM is the professional body which represents almost 6,000 resource and waste management professionals, predominantly in the UK but also overseas. Its principal charitable object is to advance for the public benefit the art and science of wastes management worldwide and so to promote education, the protection of public health and the preservation of the environment. CIWM sets the professional standards for individuals working in the sector and has various grades of membership determined by education, qualification and experience.

As the UK approaches its exit from the EU, now more than ever it is vital we have a long-term vision for the future of the environment to match that already set out elsewhere in the UK. Publication of the long-awaited twenty-five year environment plan (25YEP) is therefore a vital step and CIWM is glad to see momentum building towards this happening before the end of the winter. The 25YEP must set out how the UK Government intends to:

- 1. Ensure that current environmental standards are at least maintained in theory and practice**
- 2. Demonstrate that the UK continues to show ambition on delivering clean growth and a better environment, irrespective of Brexit; and**
- 3. Establish new institutional structures to ensure environmental protection is enforced in practice by current and subsequent governments across the UK.**

In addition, and given that a proper focus on resource productivity and efficiency is vital to the UK's future economic, social and environmental development, including tackling climate change, CIWM (in common with many others in the resource and waste management sector) considers that the 25YEP must also:

- 4. Embed better resource productivity and efficiency as a key strand of government policy in all areas**
- 5. Set the context for the promised new resource and waste management strategy so in turn that can provide a clear and predictable future policy direction to 2030 and beyond; and**
- 6. Keep up the pressure on tackling waste crime and poor environmental performance.**

1. Maintaining environmental standards

CIWM is a supporter of the Greener UK coalition and fully endorses its aims. Decades of action by lawmakers and the resource and waste management sector have significantly reduced the negative effects of resource use and waste generation in the UK and elsewhere. However, primary resource extraction continues to grow (Figure 1) and to alter the environment here and overseas. The pressure on natural resources will only increase with population growth and increased wealth. Figure 1 shows the challenge in terms of ecological footprint, with no wealthy country living within planetary constraints.

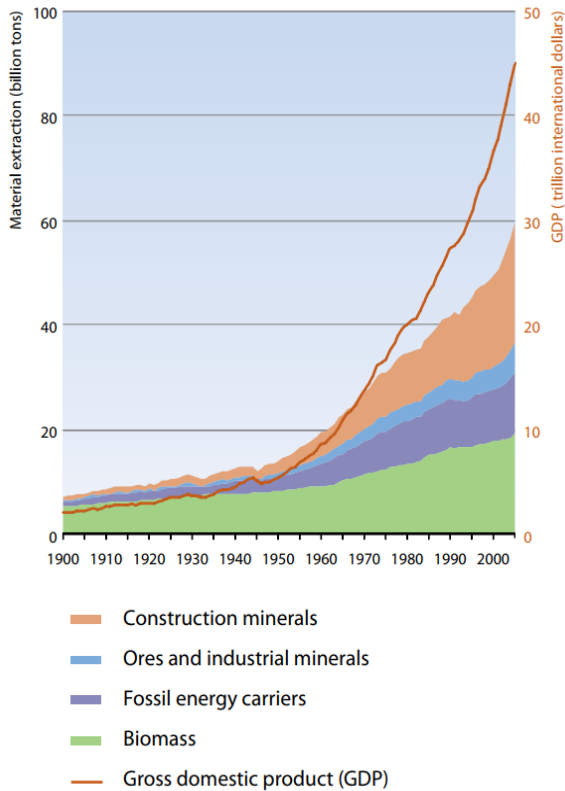


Figure 1: Global material extraction in billion tonnes, 1900-2005 (UNEP)

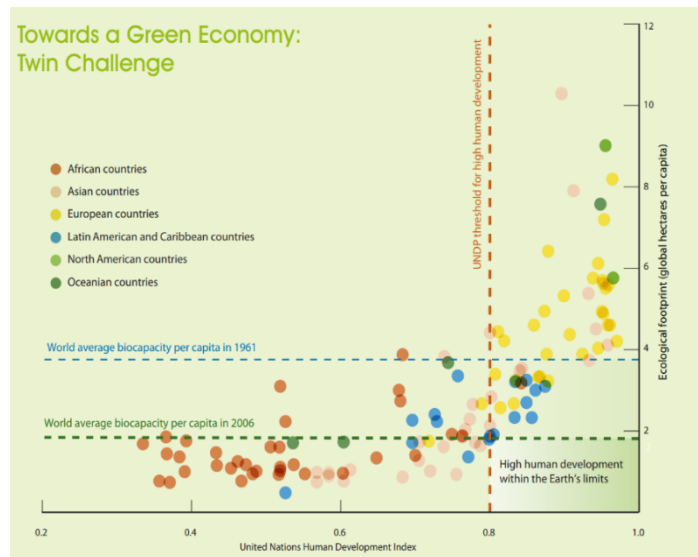


Figure 1: Development vs Footprint (UNEP, 2011, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*)

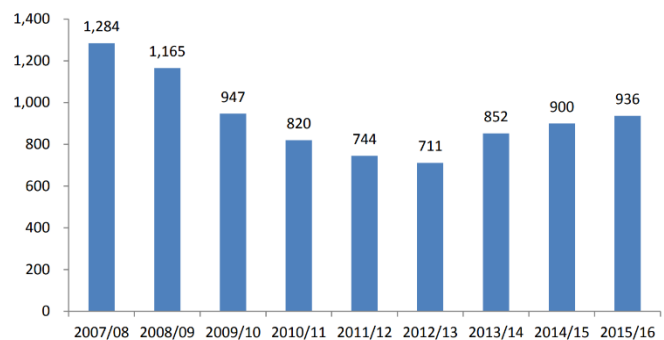


Figure 3: Fly-tipping trends in England (Defra 2017)

Waste is also an ever-present challenge:

- Waste inappropriately handled continues to blight our countryside as litter or fly-tipping (Figure 3) and the problem is growing. The number of fly-tipping incidents rose to 936,000 in England in 2015/16¹ – a 4% increase compared to 2014/15, which had already seen an 11% increase on the previous year. The clean-up cost to local authorities alone is estimated to be at least £50 million. Littering is also on the rise; for example a 34% rise in beach litter was reported between 2014 and 2015².
- Plastic fragments in the oceans damage aquatic life and make it into our food chain:
 - approximately 8m tonnes of plastic enters the marine environment each year³;
 - the annual dietary exposure for European shellfish consumers can amount to 11,000 microplastics per year⁴; and

¹ National Fly-tipping Prevention Group, 2015/66 statistics, <http://www.tacklingflytipping.com/keystatistics/1494>

² Marine Conservation Society, July 2016, <https://www.mcsuk.org/press/view/691>

³ Jenna R. Jambeck, Roland Geyer, Chris Wilcox, Theodore R. Siegler, Miriam Perryman, Anthony Andrady, Ramani Narayan, Kara Lavender Law. Plastic waste inputs from land into the ocean. *Science*, Vol. 347, Issue 6223, pp. 768-771, February, 2015

⁴ Van Cauwenberghe L, Janssen C, 2014. Microplastics in bivalves cultured for human consumption. *Environmental Pollution*, 193, 65-70

➤ since 1960 nearly 60% of all seabirds studied have ingested plastic and around 90% of all seabirds alive today are likely to have consumed plastic at some point during their lifetime⁵.

- Decaying waste creates the potent greenhouse gas methane (Figures 4 and 5); whilst methane emissions are on the decline in the UK, as improved landfill sites (which whilst better for immediate pollution control, regrettably also provide the ideal anaerobic conditions for methane generation) are built and used in developing economies, methane emissions there are expected to increase⁶;

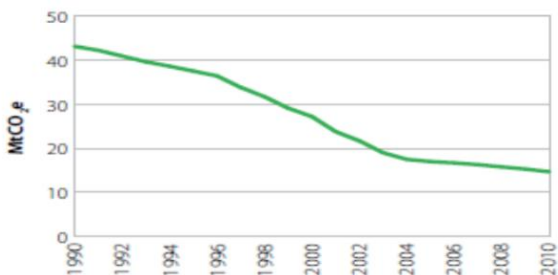


Figure 4: Historical trends in UK landfill methane emissions (CCC/Defra)

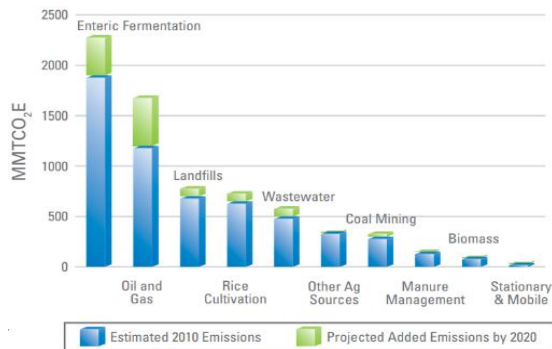


Figure 5: Estimated and Projected Global Anthropogenic Methane Emissions by Source, 2010 and 2020 (Global Methane Initiative)

- Hazardous materials present in waste damage the environment and pose a risk to human health if not managed appropriately. These range from heavy metals (cadmium, copper, arsenic, mercury, lead) and polychlorinated biphenyls (PCBs) from industrial products and processes through to hazardous materials in household waste (Table 1). These substances can bioaccumulate, have caused concern about concentrations in fish and seafood stocks and present a pollution risk if not properly collected and treated.

Household products	Associated hazardous chemicals
Paints and associated products	Obsolete paint residues containing lead, chromium Modern paint containing solvents
Treated wood and wood preservatives	Mainly organic chemicals or arsenic/chromium
Fluorescent bulbs and other mercury domestic products (low-energy bulbs, thermometers)	Mainly mercury
Pesticides (insecticides, fungicides etc.)	Banned active ingredients such as DDT, aldrin, endrin etc. Authorised active ingredients
Degreasers and other household chemicals	Organic solvents and corrosive compounds
Waste oils	PAHs, hydrocarbons
Batteries and accumulators	Cadmium, mercury, lead, nickel
Construction waste	Asbestos, lead, copper, arsenic
Car oil filters	PAHs, hydrocarbons
Leather	Chromium
Pharmaceutical products	Antibiotics Synthetic steroids, cytotoxic medicines etc.
Ink/toner cartridges	Pigments including glycols, etc.

Table 1: Priority hazardous household chemicals (*Study on hazardous household waste (HHW) with a main emphasis on hazardous household chemicals (HHC)*, European Commission 2002)

⁵ Chris Wilcox, Erik Van Sebille, and Britta Denise Hardesty. PNAS, August 2015

⁶ Bogner, J., and E. Matthews, Global methane emissions from landfills: New methodology and annual estimates 1980–1996. *Global Biogeochem. Cycles*, 17(2), 1065, 2003

- The process by which we consume resources and manage them at the end of life is also critical to better stewardship of our natural capital. In particular, the production process, involving the extraction and processing of raw materials and their incorporation into consumer products, consumes materials, energy and water, produces various forms of pollution and therefore has an impact on natural capital. As an example, one tonne of aluminium requires four tonnes of bauxite to be mined⁷ and uses around 14m³ of fresh water⁸ and almost 15MWh of electricity⁹ per tonne in smelting, and four tonnes of chemical products¹⁰. Aluminium is also the most cost-effective material to recycle, because of the significant energy savings - up to 95%. For the priority growth industries in the UK, an assessment of the resource implications is therefore essential; for example, raw materials are the biggest cost driver in the automotive industry, more than double the cost of labour. Raw materials contribute about 47% to the cost of a vehicle; in comparison, labour costs represent around 21% of the total cost.

There is, therefore, an extremely strong case for continued action to address these issues with a robust regulatory framework to ensure the responsible and efficient management of resource and waste. Currently, most of that framework in the UK comes from EU law.

2. Showing ambition

The 25YEP needs to confirm the Government's commitment to leaving the environment in a better state than it found it. Concrete elements that need to be present to do this include:

- publish the plan to meet the fourth and fifth carbon budgets urgently and ensure it sets out how the UK can remain on the path to achieve its 2050 goals;
- show a clear link between the plan and the UK's commitment to meeting the 2030 UN Sustainable Development Goals (SDGs); effective waste and resource management directly supports 13 of the 17 SDGs, and a strong and ambitious 25YEP that explicitly recognises this would demonstrate UK global leadership in this sphere;
- ensure climate change and wider environmental issues are properly reflected in both the upcoming Industrial Strategy and the National Infrastructure Assessment;
- ensure that current UK standards of environmental protection are maintained, remain in line with the rest of Europe as this policy area is evolving rapidly, and are neither sacrificed in future trade negotiations nor result in the UK being unable to compete in trading areas where higher standards apply; and
- work with the other UK countries in framing the 25YEP, recognising that this is a largely devolved policy area and levels of ambition, particularly in Wales, are already higher than required by EU law.

3. New institutions

Like many others, CIWM is concerned that once the UK leaves the EU (and subject to the details of any future EU-UK trade deal), we will no longer have the added discipline of the supranational role of the European Commission (EC) and the Court of Justice of the European Union (CJEU). The EC's role as receiver of implementation reports and investigator of apparent problems, supported by the judicial role of the CJEU, is crucial on environmental standards. This is of particular concern to our sector since a) it is shaped and driven by policy and regulation and b) it has long time horizons for many of its investment decisions – a major piece of waste management infrastructure can take five to ten years to go from drawing board, through planning and permitting to construction and operation, and can then be in operation for ten (recycling), twenty-five (energy from waste) years or more (landfill). Unexpected changes in policy direction

⁷ Aluminium Stewardship Initiative <https://aluminium-stewardship.org/about-asi/aluminium-and-sustainability>

⁸ Alcoa Sustainability Report 2016, p49 <http://www.alcoa.com/sustainability/en/pdf/2016-Sustainability-Report.pdf>

⁹ Mr Reid , Electricity consumption in the production of aluminium
<http://wordpress.mrreid.org/2011/07/15/electricity-consumption-in-the-production-of-aluminium/>

¹⁰ WRAP, Recycle Now, <https://www.recyclenow.com/recycling-knowledge/how-is-it-recycled/cans>

or enforcement approach can therefore have a very destabilising impact and can raise the cost of capital demanded to compensate for the perceived greater level of risk.

Whatever solution is found for this must also fully respect the role of the devolved governments, perhaps by having an independent, well-resourced expert body reporting to each of the four Assemblies/Parliaments that could take on the reporting and investigatory role, connected to the Courts for the judicial role. One strong option would be for the NCC to undertake a reporting and analysis role similar to that of the Committee on Climate Change, advising on the delivery of the 25YEP, monitoring progress, and supporting UK parliaments and assemblies in holding UK governments to account.

4. Resource productivity and efficiency

Alongside the environmental reasons to use resources more wisely sit a suite of economic issues. Predictable and affordable access to materials is an essential part of delivering industrial competitiveness, sustainable economic growth and long term business security. Resource availability and security has for some years been identified by UK plc as a potential future risk. According to the manufacturers association EEF “UK manufacturers have consistently highlighted that high material prices and security of supply is a threat to growth”. Almost a third of profit warnings issued by FTSE350 companies in 2011 were attributed to rising resource prices. Significantly increased price volatility in some commodity markets, and moves by several leading economies to lock in exclusive access to some minerals, are also creating risks for the UK economy.

For the priority growth industries in the UK, an assessment of the resource implications is therefore essential; for example, raw materials are the biggest cost driver in the automotive industry (circa 47%), more than double the cost of labour (circa 21%).

An additional risk is the impact of austerity on local authorities’ ability to maintain and improve recycling services for the municipal waste stream, and the latest figures show the UK’s recycling rate has started to slip backwards.

CIWM therefore considers that the 25YEP and the new resources and waste strategy must embed better resource productivity and efficiency as a key strand of future government economic and environmental policy. Specific actions could include commitments to:

- Monitor and report on UK resource productivity and set a long-term economy-wide resource productivity target against which both national and sector-specific progress can be measured. A per capita residual waste target would also support the principle of waste prevention and resource productivity.
- Ensure the post-Brexit regulatory framework supports resource productivity (promoting resource efficiency, waste prevention, reuse, sharing economy, etc) and a more circular economy
- Through WRAP, Innovate UK and other similar means, provide support for innovation on resource productivity and waste management
- Strengthen or introduce a coherent set of extended producer responsibility schemes for a suitable range of waste streams (packaging, mattresses, electrical and electronic equipment, tyres, etc.) where the producer is obligated to contribute to the cost of collection and recycling/treatment. The main objectives of these schemes should be to share the costs more equitably across the supply chain, including local authorities, incentivise more resource efficient product design, and enable investment in recycling infrastructure.
- Develop more material-specific approaches based on environmental impact, with disposable plastics as a priority. This is in line with current developments including Defra’s plan to ban plastic microbeads, the forthcoming EU plastics strategy and Secretary of State Michael Gove’s recent commitment to explore “new methods of reducing the amount of plastic – in particular plastic bottles – entering our seas.”

- Recognise resource productivity and waste management skills as part of STEM and provide support (beyond apprenticeships) for resource productivity upskilling in smaller firms in all manufacturing sectors.

5. Resource and waste management strategy

The resource and waste management sector is shaped and driven by policy and regulation. Clear medium to long term policy and ambition is needed to support future investment in the sector, particularly as much of the investment (aside from the collection of municipal waste) is now expected to come from the private sector and can have multi-year lead times and return on investment periods. However, England has lacked a formal strategy for waste for a number of years now (though there is now a welcome strategy on litter) and the current framework only extends to 2020. Likewise, the developers of waste-derived renewable energy infrastructure have struggled to justify investment against a background of frequent, significant and, in some cases, very sudden changes in the incentives framework.

Likely growth in waste volumes (linked to population and economic growth) could see the cost to local authorities and businesses go up by £260 million to £485 million per annum by 2020 without further action to reduce waste and improve reuse and recycling.

Landfill capacity is falling rapidly and overseas markets for the UK's refuse derived fuel (RDF) are showing signs of levelling out and may be negatively impacted by Brexit. In addition, the current delivery programme of new UK Energy from Waste facilities is coming to an end. There is serious concern that the UK will hit a capacity gap in residual waste treatment infrastructure post 2020 unless there is significant further investment.

The situation for recycling is also concerning. An assessment made in 2016¹¹ by the Environmental Services Association suggests that there is almost no new public sector procurement of recycling infrastructure through their members currently in the pipeline for England. With 15% of the UK's current recycling capacity likely to end its useful life between now and 2020, this could see a reduction in household recycling rates of 5% and the loss of 8,000 jobs.

In this context, CIWM believes the 25YEP should set the context for the promised new resource and waste management strategy so that it can provide a clear and predictable future policy direction to 2030 and beyond, taking account of the development of the UK's carbon budgets, the EU Circular Economy framework and the UN Sustainable Development Goals. This must include commitments to:

- Not step back from the existing 2020 framework for resource management, in particular the 2020 landfill diversion and household recycling targets;
- Produce a comprehensive resource productivity and waste management strategy for England, taking proper account of developments in the EU and setting the direction of travel out to 2030 and beyond;
- As part of that strategy, set out how the Government will:
 - Enable industry to tackle the emerging infrastructure deficit (primarily for waste treatment, but also increasingly for recycling and reprocessing too) over the next ten years;
 - Work with the sector to address the data issues in the sector, especially the poor information about waste arisings and destinations in the commercial and industrial segments, for example through a national materials database;
 - Introduce a fairer system for sharing the cost of collection and recycling of materials, especially packaging, using more effective extended producer responsibility regimes;
 - Ensure food waste is collected separately from businesses and homes and treated through anaerobic digestion or other technologies that realise the maximum environmental and economic benefits from the material; and

¹¹ Resourceful: delivering a strong and competitive UK resource economy http://www.esauk.org/esa_reports/

- Fully reflect the waste hierarchy, with a greater focus on embedding waste prevention throughout the product supply chain by incentivising resource efficient product design and encouraging food waste prevention from farm to fork.
- Engage fully with stakeholders in the development and delivery of the strategy.

6. Waste crime and poor environmental performance

Waste crime in the UK is widespread and increasing, from small-scale fly-tipping through to large scale, organised waste crime involving hundreds of thousands of tonnes of waste. It is estimated to cost the UK economy over £730m a year in lost taxes and profits (HMRC estimates the lost landfill tax from waste mis-description alone at £150m a year). The Environment Agency shuts down around 1000 illegal waste sites each year, but it also finds about another 1000 new sites too. Fires, vermin, dust, odour, leaks and spills from flytipping and illegal waste sites cause grief to local communities, damage the environment and can be a threat to human health. In addition, waste 'lost' out of the legitimate sector may not be treated safely and appropriately to realise its full value as a secondary resource.

A key element of the waste regulatory regime is the 'duty of care' that all waste producers have towards their waste until it reaches its final destination. Given the Agency's estimate that there is 1.5m tonnes of waste on illegal sites in England alone, this is clearly not working as well as it should. The sector has been funding the Right Waste, Right Place awareness campaign to try to get SMEs to understand their obligations, but this area remains a significant concern.

All four governments and their regulators have already taken steps to try to address these issues by providing more enforcement resources (EA has received £28m for 2014-2020) and enhanced powers. However, we are not yet winning this struggle, so CIWM considers the 25YEP must set out how the Government will continue to tackle waste crime by:

- providing suitable resources (money and legal powers) to the environment agencies and HMRC to fight waste crime. This should include the power to stop material being deposited on a site (with or without a permit), to require some form of financial provision against bankruptcy or abandonment (to avoid these costs falling on the public purse) and actions to raise the requirements for onsite technical competence;
- strengthening awareness of the legal obligations on duty of care amongst businesses and householders, so less material can enter the illegal waste world; and
- making the use of electronic duty of care systems compulsory for all waste producers and handlers, helping track material and making it harder for it to leak out of the legitimate sector.

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