National Infrastructure Commission
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FTAO: The Commission Secretariat

Re: The National Infrastructure Commission Call for Evidence on The Second National Infrastructure Assessment: Baseline Report

We really welcome the opportunity to provide evidence on for the update of this national infrastructure assessment. Biffa has been leading the UK's waste management industry for over 100 years and we have a strong track record of supplying the necessary infrastructure to meet the resource management needs of our customers.

Today Biffa is an established enabler of the UK circular economy and our team of around 10,000 colleagues carry out essential operations every day including surplus redistribution, recycling, treatment, energy generation, collection and disposal.

Our purpose is 'to change the way people think about waste' and sustainability has been at the heart of our business strategy for many years. Our areas of focus essentially reflect the waste hierarchy - to Reduce, Recycle, Recover and Collect.

We have concentrated our response to Challenge 7 and Questions 14 and 15 which is where we have expertise and experience.

Challenge 7: Waste and the circular economy – the Commission will examine the role of the waste sector in enabling the move towards a more circular economy.

Question 14: What are the barriers to and solutions for expanding recycling capacity, both now and in the future to deliver environmental and net zero targets?

There are several barriers to expand recycling targets to deliver environmental and net zero targets.

1) UK Infrastructure capacity gap
2) Planning and Environmental Permitting systems
3) A clear regulatory framework for key materials
4) Packaging design for reusability or easy recyclability
5) Logistics

We await the outcome of the 2021 Resources and Waste Strategy Consultations including: Introducing a Deposit Return Scheme in England, Wales, and Northern Ireland[1] Extended Producer Responsibility for Packaging[2] and the Consistency in Household and Business Recycling in England[3]. These have great potential to enable a more circular UK economy if the right balance of measures is adopted. Insufficient demand for recycled content in new products is being addressed in some material streams for example with the introduction of the plastics packaging tax.

1) UK Infrastructure capacity gap

A shortage of UK reprocessing capacity, and an over-reliance on offshore markets for recycling our unprocessed plastic packaging and fibre waste is a key barrier to increasing national recycling rates.

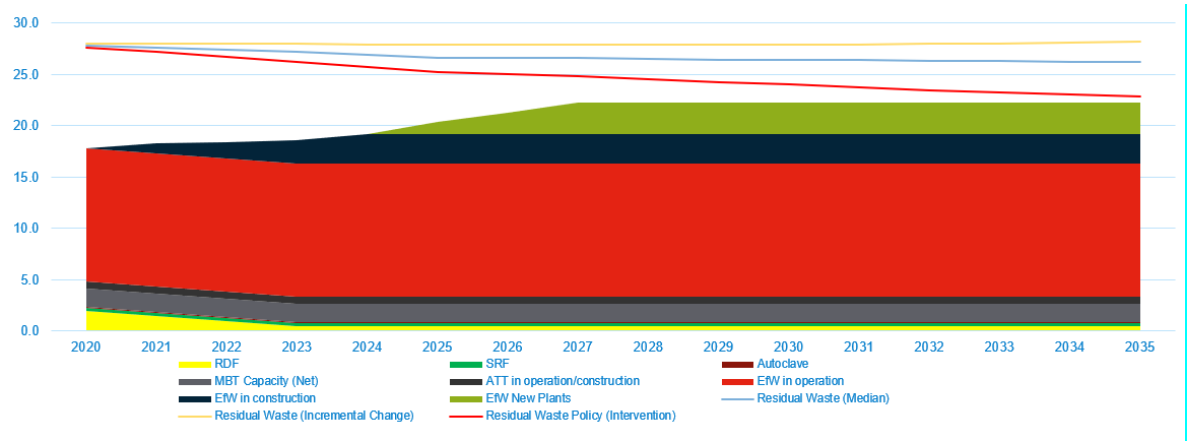
The waste management sector – from materials handling, sorting, and processing to landfill – requires significant investment and expansion. For example, to increase household recycling from c.43% to the Government target of 65% for Municipal Solid Waste (MSW) by 2035 an additional tonnage of 7-9 mtpa needs to be recycled. To meet achieve this would require investment of £1.2bn or around 30 more large MRFS of Biffa Edmonton scale.
The chart below based on data from Biffa and Tolvik details the gap across recycling and recovery/residual waste.

Ambition	Waste stream	Policy ambition	Gap tonnage	Investment / jobs required
Increase Recycling (handling/sorting/DRS counting)	MSW (household waste and similar waste from businesses)	65% MSW recycling by 2035 (as per 2018 RWS target) – currently c45%	**7-9 mtpa** additional recycling tonnage needed	**£1.2bn** e.g. 30 large MRFs of Biffa Edmonton scale (@£40m/site inc civils)
Recycling self-sufficiency (reprocessing to avoid ongoing exports)	Waste plastic packaging	UK reliance on substantial export	**0.7mtpa** exported in a typical year	**£0.5bn** e.g. 12 Biffa Seaham plants (@£40m/site inc civils)
	Wastepaper and cardboard	UK reliance on substantial export	**4.5mtpa** exported, typical year	**£0.9bn** (15 pulping plants @£60m/300ktpa)
Residual waste treatment to avoid landfill (recovery of energy)	Combustible element for energy from waste	Minimum 90% landfill diversion (RWS and EU target)	**9mtpa** current Capacity Gap	**£0.8bn equity / £2.5bn gross uncommitted** £7.5bn incl committed (@£300m/site) 20-25 EfW plants (17 already in build or committed
Landfill disposal for remaining waste (to ensure ongoing availability of secure disposal)	Landfill of Non-combustible element for safe disposal	Safe disposal for all non-recyclable, non-combustible waste within UK (export not allowed)	Replacement capacity needed within next 3-5 years. **20mtpa** on-going disposal capacity requirement	**£1.0bn upfront /** £7.5bn whole life capex e.g. 50 Biffa Poplars or Redhill scale engineered landfills (@£20m/site upfront / £150m/site total)

[1] DEFRA consultation on Introducing a Deposit Return Scheme in England, Wales and Northern Ireland 2021 Introducing a Deposit Return Scheme in England, Wales and Northern Ireland - Defra - Citizen Space
[2] DEFRA consultation on Extended Producer Responsibility for Packaging 2021 Extended Producer Responsibility for Packaging - Defra - Citizen Space
[3] DEFRA consultation on Consistency in Household and Business Recycling in England 2021 Consistency in Household and Business Recycling in England - Defra - Citizen Space

The exception is Energy from Waste where if Government recycling targets are reached, we anticipate that UK residual waste totals will shrink and signal the conclusion of new UK EfW construction, with future projects likely focused on replacing ageing plant. However, it is possible that as some older facilities reach end of life they might not be replaced, leading to a long-term, gradual decline in the UK's EfW capacity.

Capacity gap analysis



Source: Biffa analysis

Reducing our reliance on overseas processors of recyclable materials

Widely reported data has shown large amounts of exported recyclable waste material underpins the UK's increases in reported recycling rates over the last 20 years or so. In its 2018 report[4] , the National Audit Office highlighted a sixfold increase between 2002 and 2017 in exports of packaging material for recycling abroad; exports accounted for half of the packaging reported as recycled in 2017.

The main material streams exported by volume are wastepaper and card (fibre); waste plastic packaging; glass and metals such as steel and aluminium.

Wastepaper and Card

In its 2021 report 'The Economic Value of the UK Paper-based Industries' [5], the Confederation of Paper Industries (CPI) reported that around 6.6mt of used paper and card were recovered in the UK for recycling in 2020. Of this, some 3.8mt were exported to overseas markets, achieving an overall recycling rate of 65%. The CPI's 2018/19 report indicates around 4.5mtpa typically being exported pre-pandemic.

[4] The Packaging Recycling Obligations NAO 23rd July 2018 https://www.nao.org.uk/press-release/the-packaging-recycling-obligations/

[5] The Economic Value of the UK Paper-based Industries – Confederation of Paper Industries 2021 https://thecpi.org.uk/library/PDF/Public/Publications/Reports/CPI%20EVR3%202021%20Final.pdf

The CPI also highlighted that, while this is a potential opportunity to invest in UK-based paper and card reprocessing, doing so brings significant challenges, not least UK energy costs and embedded emissions. It also relies on consumer spending habits changing, to create more demand for the material within the UK, by buying more UK-based goods.

Plastic Packaging

Recoup's 2020 report 'Meeting the Plastic Packaging Recycled Content Challenge ' [6] estimates the UK's plastic packaging waste reprocessing capacity at around 230Ktpa. According to the Environment Agency's National Packaging Waste Database, this resulted in some 688kt of plastic packaging being exported in 2020, a similar total to prior years. The capacity shortfall of 688kt equates to an additional 5 Biffa Polymers' Redcar sites (current processing capacity 135Ktpa), or 12 Biffa Polymers' Seaham sites[7] (57Ktpa).

Plastic recycling is an area where the UK could become self-sufficient particularly given the higher environmental risks associated with exports and the difficulties that UK regulators face in controlling the end results.

Biffa recycles over 90% of the waste plastics we handle within the UK, and the remainder is recycled within the EU. We have a target in our sustainability strategy 'resourceful responsible'[8] to recycle all plastics waste within the UK by 2025. Since 2019, we have called for a ban on the export of unprocessed plastic waste from the UK, to help boost investment in additional UK plastic reprocessing capacity.

The development of Biffa Polymers new recycling facilities in the Northeast has shown facilities can be delivered within the relatively short timescales of 2-5 years, often using existing industrial buildings and sites. Developments like this also support the ambitions of 'levelling up' expressed in Chapter 4 of the second National Infrastructure Assessment baseline report.

In addition. measures already in place such as the forthcoming Plastics Packaging Tax [9] which is being implemented from April 2022 provide a stable regulatory framework which stimulate markets for recycled content and the development of UK recycling infrastructure.

[6] Meeting the Plastic Packaging Recycled Content Challenge RECOUP April 2020 https://www.recoup.org/downloads/info-required?id=756&referrer=https%3A%2F%2Fwww.recoup.org%2Fp%2F173%2Frecoup-reports

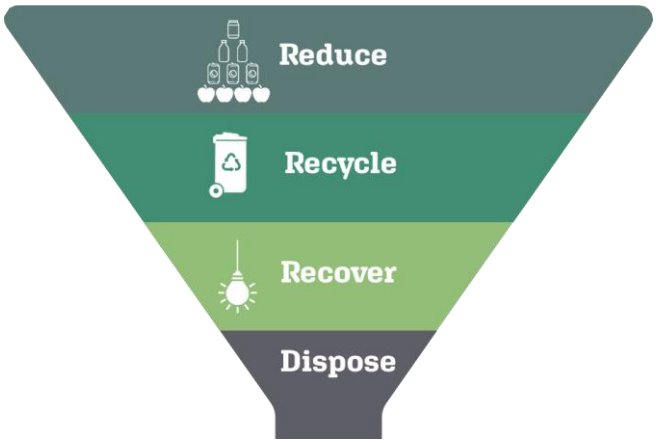
[7] Biffa Plastic Recycling Facilities - Plastic Recycling Facilities | Recycling Plastic | Biffa

[8] Biffa Sustainability Strategy 'Resourceful Responsible' https://www.biffa.co.uk/-/media/files/sustainability/biffa-sustainability-strategy-2020.ashx

[9] Plastic packaging tax - GOV.UK (www.gov.uk)

2) Planning and Environmental Permitting systems

The Land Use Planning system needs to support the development and delivery of the right infrastructure to push materials up the Waste Hierarchy and increase the circular economy.



There is a need for additional re-use, recycling, recovery, and residual waste capacity and planning should consider the requirement for infrastructure throughout the supply chain including initial segregation and storage, collection, bulking and pre-treatment stages, processing, and disposal of residues. The existing system remains too heavily driven by housing delivery and needs modernising to address the wider and fundamental challenges of climate change and the circular economy.

The next update of the National Planning Policy Framework (last revised July 2021[10]) should include policies to deliver the required new infrastructure. Sites will then need to be allocated in local minerals and waste local plans. The 2014 National Planning Policy for Waste (NPPW) also needs reviewing and updating. The Environmental Services Association produced an updated report last year with its recommendations on planning issues[11]

Environmental Permitting regime

New and upgraded waste management facilities will also require new or modified permit applications through the Environment Agency and this system is now proving more of a delay and cost than the planning system. Permit applications of any significance now regularly take several months before even being allocated to an officer and can take well over a year to process. The EA has committed to quarterly reporting against its KPI of 75% of permit applications dealt with on time and to publish the data online, but services times remain below target which is unacceptable.

[10] The National Planning Policy Framework 20 July 2021 Ministry of Housing Communities & Local Government

[11] https://www.esauk.org/application/files/3616/2617/1490/Planning_for_a_Green_Economic_Recovery_May2021_FINAL2.pdf

Collections consistency

Changes to existing services through the introduction of collection consistency (now expected to come in from 2025) will require existing sorting facilities to be reconfigured to process changed mixes of material, including the addition of potentially problematic materials (e.g., flexible plastics).

The separation of a wider range of materials for recycling could also necessitate the introduction of additional sorting stages, e.g., additional PRFs to sort plastics post-MRF sorting and prior to reprocessing.

Energy from Waste

There will be limited need for additional EfW capacity beyond that which is already committed. The development of new heat networks connected to EfW facilities will enable these plants to contribute towards the decarbonisation of the heat network, whilst also improving the plant efficiency and lowering the carbon intensity of the EfW facilities.

Provision of recyclate storage within the domestic and household and setting

For all development of new housing stock there needs to be provision made for the domestic storage of recyclate in the format decided upon by the outcome of the collection's consistency consultation [12]. This should include appropriate storage at houses of multiple occupancy flats and apartment blocks to ensure that residents can access facilities to segregate recycling waste streams including food waste, recyclate.

Large scale domestic, commercial, or industrial redevelopment projects should only be permitted when consideration of storage of waste and recyclable materials, initial consolidation and access for collection services is made.

3) A Clear Regulatory framework for key materials

End of Waste Classification

Current classification of waste and end of waste criteria needs to be clearer if innovative circular economy solutions for key materials such as paper, card and plastic is to be developed.

Clear guidance on waste derived product quality would support the production of quality recycled products. Several European countries are investigating the adoption of EN463 standard in order to classify the end of waste classification of paper and card. The UK has no agreed standard which disincentivises investment in new facilities.

Reduce export of recyclable waste material

Recycling and net zero targets would be supported by an increase in UK recycling capacity and a reduction in reliance on overseas processors of recyclable materials.

[12] DEFRA consultation on Consistency in Household and Business Recycling in England 2021 Consistency in Household and Business Recycling in England - Defra - Citizen Space

In its 2018 report[13] , the National Audit Office (NAO) highlighted a sixfold increase between 2002 and 2017 in UK exports of packaging material for recycling abroad; exports accounted for half of the packaging reported as recycled in 2017.

The main material streams exported by volume are wastepaper and card (fibre); waste plastic packaging; glass and metals such as steel and aluminium.

Biffa recycles over 90% of the waste plastics we handle within the UK, and the remainder is recycled within the EU. We have a target in our sustainability strategy to recycle all plastics waste within the UK by 2025. Since 2019, we have called for a ban on the export of unprocessed plastic waste from the UK, to help boost investment in additional UK plastic reprocessing capacity.

As Biffa has shown with the development of our own Biffa Polymers business in the Northeast, new recycling facilities can be delivered within the relatively short timescales of 2-5 years, often using existing industrial buildings and sites. This sort of development really assists with the ambitions of levelling up as expressed in Chapter 4 of the second National Infrastructure Assessment baseline report.

4) Packaging design for reusability or easy recyclability

The introduction of the Plastics Packaging Tax [14] from April 2022 will support more development of domestic recycling infrastructure by creating for recycled plastic content.

The new tax applies to plastic packaging produced in or imported into the UK that does not contain at least 30% recycled plastic. Plastic packaging is packaging that is predominantly plastic by weight and having this stable regulatory framework has already stimulated the development of UK recycling infrastructure.

However, to increase UK plastic recycling rates further we need to be proactive. Plastic as a material is not the problem, plastic packaging serves an important role as a lightweight, durable, protective, adaptable, and recyclable material, the issue is how it is used, re-used and managed.

The Government Resources and waste strategy includes proposals for new system of Extended Producer Responsibility would increase compliance fee costs for non-recyclable or difficult to recycle plastic packaging. We welcome this proposal to bring renewed pressure to tackle waste at source, including designing products and packaging for recyclability, reversing a previous focus on what to do with it after it has become waste.

The type of plastic, its application and even its colour need consideration at the design and production stage, so that the resulting item is genuinely recyclable in mainstream, widely available systems and the resulting re-processed plastic is attractive to the widest possible end markets.

[13] The Packaging Recycling Obligations NAO 23rd July 2018 https://www.nao.org.uk/press-release/the-packaging-recycling-obligations/

[14] Plastic packaging tax - GOV.UK (www.gov.uk)

A good example is the closed loop ‘bottle to bottle’ type of recycling which is possible with plastic HDPE milk bottles and PET drinks bottles, which Biffa Polymers process, this keeps the material in the resource loop for as long as possible in place of virgin polymers and helps reduce the carbon impacts from virgin plastic production

5) Logistics

The sector relies on highly developed logistics to efficiently collect and transport the re-usable or recyclable materials which drive a more circular economy.

A key part of the net zero strategy for Biffa and the UK is de-carbonisation of transport. A barrier to widespread electrification of appropriate vehicles is the requirement for charging infrastructure for Electric Vehicles (EV) and Low carbon / Zero carbon fuelling infrastructure at depots and at other locations. However, current supply chain and economics do not support widespread roll out. Government will need to make funding available to Municipalities to ensure consistent transition.

For heavy haulage and long-distance haulage vehicles the development of hydrogen (or another energy dense low carbon fuel) is needed.

A barrier to achieving net zero is the delivery of this alternative fuel / charging infrastructure and the development of hydrogen trucks and plant where the technology is not yet proven at a commercial scale.

Challenge 7: Waste and the circular economy – the Commission will examine the role of the waste sector in enabling the move towards a more circular economy.

Question 15: What is the likely environmental impact of waste streams from construction across economic infrastructure sectors, over the next 30 years, and what are the appropriate measures for addressing it?

The environmental impacts of waste streams from construction over the next 30 years are difficult to forecast but two key areas are.

1) Waste classification
2) Residual waste disposal capacity

As with the discussion above in answer to question 14. A clear regulatory framework and appropriate guidance is needed to promote circular economy solutions to waste from construction activities.

1) Waste Classification

Clarification around waste classification is essential. The current statutory guidance on the Duty of Care[15] places an obligation on a waste producer to provide a description of their waste and for Hazardous Waste use an appropriate EWC code by reference to Appendix A of the Waste Classification Technical Guidance WM3[16]. The Environment Agency are currently requiring any waste stream that is a mirror entry in Appendix A of the Waste Classification Technical Guidance to be fully analysed or classified and Hazardous Waste. Sampling and testing all mirror entries which includes soil and stones, and many other construction wastes will increase the costs of dealing with these materials and potentially make many more re-development sites uneconomical to re-purpose.

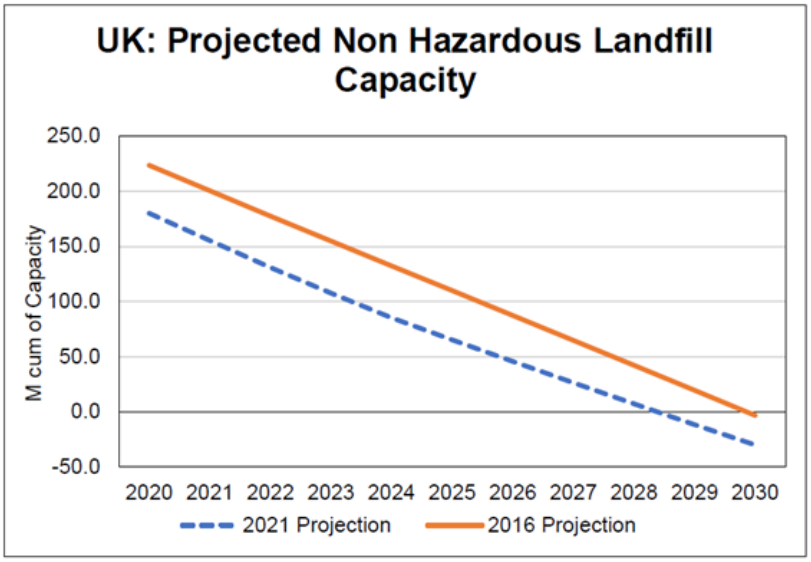
2) Residual Waste Disposal Capacity

Landfill disposal for material which cannot be recycled, reuse or recovered is at the bottom of the waste hierarchy.

Engineered landfill capacity will be required to deal with this material for which there is no alternative treatment or for treatment residues from existing waste treatment processes.

The material is predominantly inert materials including contaminated construction and demolition waste (e.g., inactive hazardous wastes such as asbestos for which there is no alternative safe disposal) along with some industrial process residues where there are no alternative treatments available.

[15] Waste duty of care code of practice - GOV.UK (www.gov.uk)
[16] WM3 Waste_classification_technical_guidance_WM3.pdf (publishing.service.gov.uk)



The graph above is based on analysis undertaken by Biffa and Tolvik and this highlights that unless additional landfill capacity is made available, it is projected that the UK as a whole will run out of landfill capacity by 2023. There are many areas including the Southeast where existing capacity is almost fully used and the same analysis shows there is an ongoing disposal capacity requirement of 20mtpa, and replacement sites will be needed in the UK within the next 3-5 years. New landfill capacity urgently needs to be identified and allocated within the Local Minerals and waste Plans.

We hope that the above is of some use and are happy to meet to discuss these important issues further.

Yours Sincerely

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