



The Reality Gap (2017)

Analyst Briefing - 18th October 2017

Biffa

Agenda



- Introductions
- Key messages
- The Reality Gap – market analysis
- Conclusions
- Biffa – looking to the future
- Q&A session

Introductions



- **Ian Wakelin – CEO**

Ian was appointed CEO of Biffa in September 2010. He was previously co-founder and CEO of Greenstar UK (2001 – 2010), which was subsequently sold to Biffa. Prior to joining Greenstar UK, Ian was Managing Director of UK Waste Management, a British subsidiary of America's Waste Management Inc. Prior to that Ian spent 8 years with Arthur Andersen, as a Chartered Accountant.



- **Michael Topham – CFO**

Michael joined Biffa in September 2010. He has previously held the roles of Divisional Finance Director and Divisional Managing Director before being appointed to his current role of CFO. Prior to joining Biffa, Michael was finance director at Greenstar UK from 2005 to 2010. He trained as a Chartered Accountant with PwC in London, and held positions in both audit and transaction services practices.



- **Report Authors:**

- **Jeff Rhodes BSc (Hons) BTP MRTPI, Head of Environment & External Affairs**

Jeff has worked in waste management and waste planning for over 30 years and been with Biffa since 2002. His responsibilities cover environmental development and operational consents, compliance, regulation, policy and sustainability.



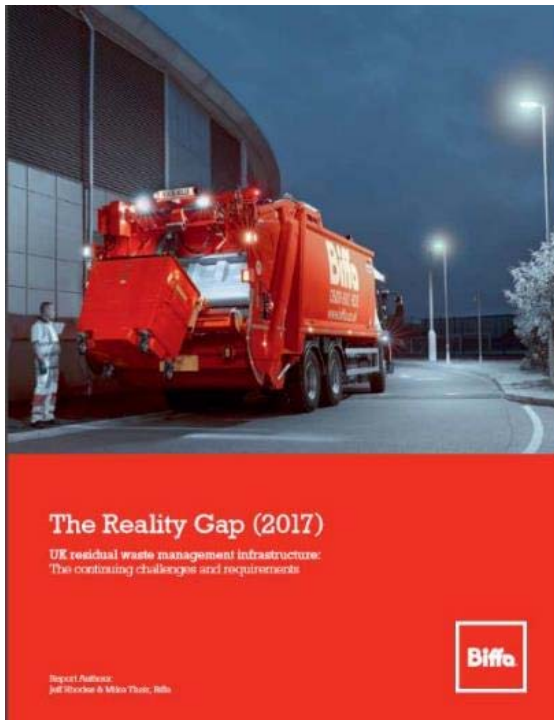
- **Mike Thair BSc (Hons) MBA MCIWM, Business Development Director**

Mike has worked in the waste sector for 19 years and been with Biffa since 2000. He has worked in a variety of roles including operational, technical, commercial and development.



Reality Gap (2017) Report

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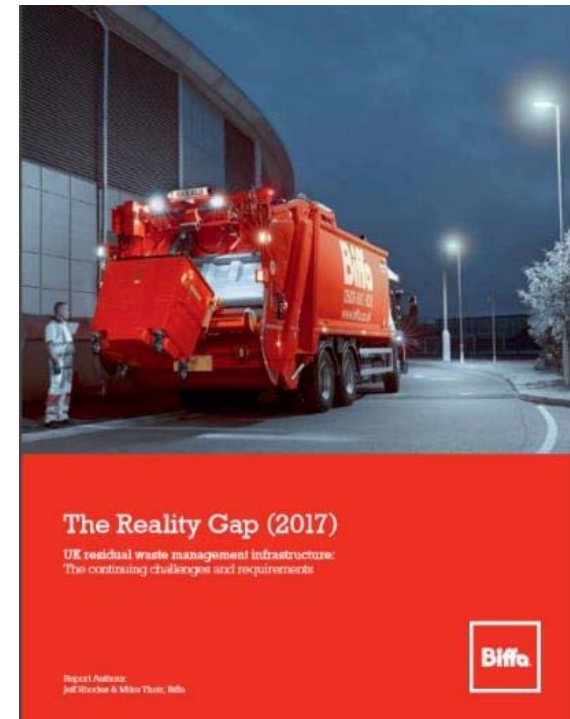
Purpose:

1. The report provides a review of the residual waste market now and in the future, supported by an assessment of UK performance, Government policy issues and commercial realities
2. This is our second report and is a wider assessment than our 2015 report, looking at continued requirements for landfill disposal for certain waste, as well as energy recovery and recycling
3. The analysis focuses on the relevant component of UK waste arisings, namely c.60Mtpa of non hazardous recyclable and combustible wastes from households and businesses
4. The report supports and informs Biffa's business strategy and is also being used to help influence the new wave of Government industrial and environmental strategy work looking ahead to the UK's own strategic responsibilities post-Brexit

Reality Gap (2017) – Key Findings

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1. The UK produced 209Mt of waste in 2016. Over half of this is construction and demolition waste. Our analysis focuses on c. 60Mtpa of non hazardous recyclable and combustible waste produced by households and businesses
2. The UK has seen substantial growth in recycling over the last decade but this has now slowed and will only grow marginally without substantial intervention (environmental and/or fiscal policy)
3. There is a persistent and substantial shortfall in UK Energy From Waste (“EfW”) capacity (6Mt by 2030)
4. Landfill has a fundamental and continuing role to play in waste policy, with more waste than capacity by 2030
5. The need for new infrastructure represents an investment opportunity of >£4bn¹ over the next 10 years



¹Management Assessment

Market Analysis



Mike Thair

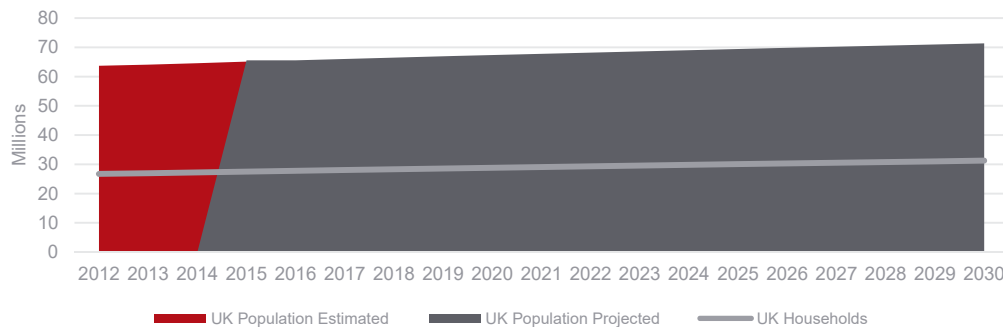
- Waste production
- Recycling
- Infrastructure
- Treatment gap
- Landfill capacity
- 2030

Waste Production – Forecasting Methodology

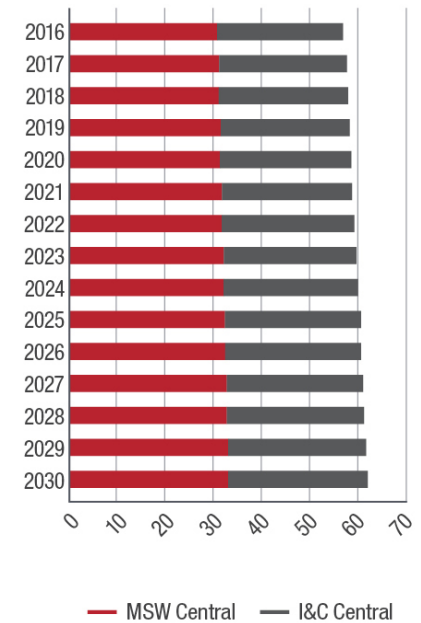


- Population and household growth and UK GDP are the main factors driving waste generation in UK
- The ONS projects 9% population growth in the period 2016 – 2030 (6m more people), with DCLG projecting a 12% growth in households (3m more households) for the same period
- Based on previous government modelling and reporting we have modelled waste growth at 1% per annum, reaching 62m tpa by 2030
- 55% of the recyclable and combustible waste is produced by households

UK Population and Housing Growth



CENTRAL GROWTH (MTPA)

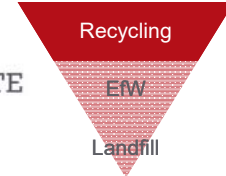


UK's Recycling Performance

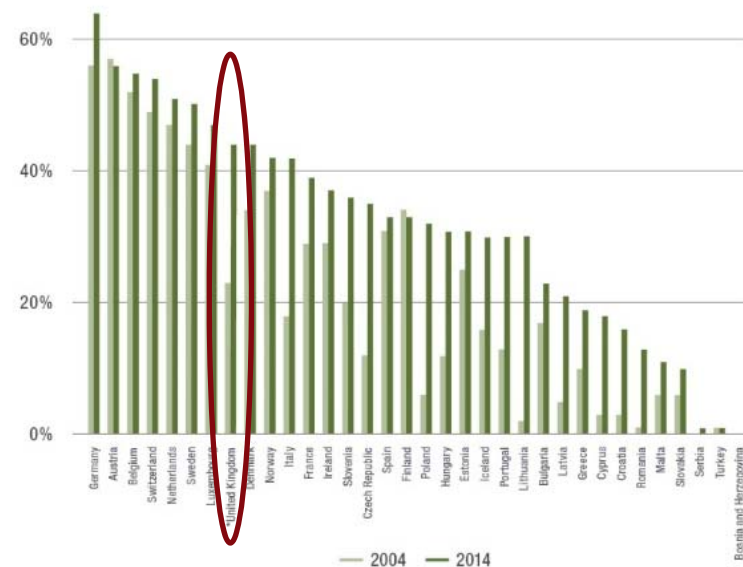


MSW (Household) Recycling

- MSW recycling levels in the UK have risen substantially in recent years, from ~10% in 2000 to ~45% in 2016 (current 2020 target is 50%)
- UK performance is now comparable with the best European countries, potentially even better if harmonised reporting methodologies were used
- UK performance to date has been driven by:
 - Environment policy and legislation (EU and UK)
 - Fiscal: landfill tax + some elements of government subsidy
- Inevitably, growth in recycling performance has slowed as the easier wins have been won. Further stimulus is required to drive future increases



COUNTRY COMPARISON - MUNICIPAL WASTE RECYCLED AND COMPOSTED IN EACH EUROPEAN COUNTRY



Source: European Environment Agency website, November 2016 report

I&C Recycling

- Unlike household waste, I&C waste in the UK has not been included in general recycling targets. Some specific targets exist relating to types of packaging but recycling is mainly driven by cost (versus disposal), consumer and customer demand and voluntary CSR policies primarily amongst larger businesses
- In 2016 I&C recycling rates reached 59%

Recycling Projections

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MSW (Household) Recycling

- Current UK target for MSW (household) is 50% recycling rate by 2020 (EU Directive and UK Regulation)
- Targets after 2020 are not yet fixed – the EU’s Circular Economy Package currently proposes a target of 65% by 2030
- UK adoption of specific new EU Circular Economy targets is uncertain, although broad principles appear likely to be followed
- Extrapolation against similar recycling growth curves in Europe suggests UK household recycling could reach 54% by 2030

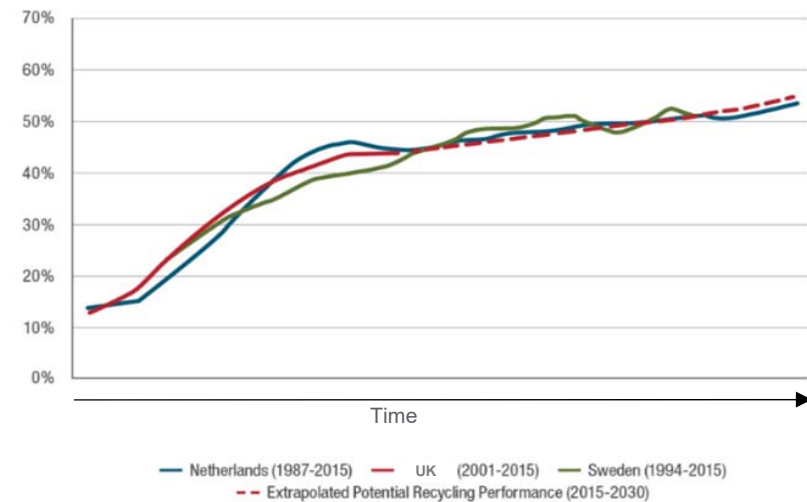
I&C Recycling

- 2016 I&C recycling rates reached 59%, predicted to reach 62% by 2020 (DEFRA)

Future Projections

- Our modelling projects a blended (MSW and I&C) 57% recycling rate by 2030
- 7m tpa additional recycling will be required to achieve 57% representing an investment opportunity of £1bn² over the next 10 years

Recycling
EfW
Landfill



² Management assessment

Energy from Waste (EfW)

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Recycling

EfW

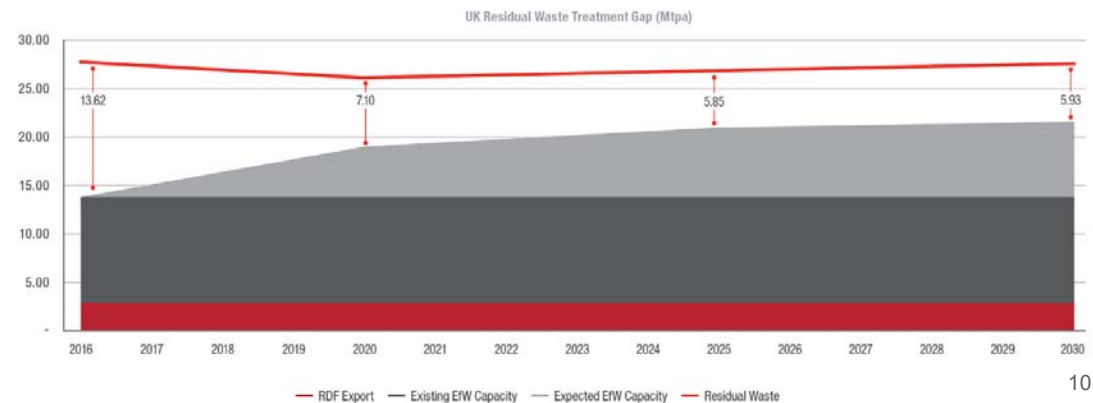
Landfill

- 2 main types of EfW: Incineration (proven, major contributor) and Advanced Thermal Treatment (ATT), primarily gasification (unproven, minor contributor)
- UK has >13m tonnes operational under-capacity currently. Speculative planning consents for numerous ATT projects driven by the prospect of now unavailable, lucrative subsidies will expire without being developed
- Gasification, operating on residual waste, remains unproven in the UK with delays in construction and operational challenges (Avonmouth, Air Products, Energos). There are currently no operational ATT facilities solely processing residual waste in the UK

Analysis

- 13m tonnes of operational capacity in 2015 - growing to 18.8m in 2020
- Based on specific project analyses, we estimate a further 2.6m tpa of capacity will be constructed between 2020 and 2030
- RDF export to mainland Europe to continue at c. 3m tpa
- Despite this new capacity, there will be a persistent shortfall in capacity of c.6m tpa (“market balance”)

REALITY GAP 1: ENERGY FROM WASTE CAPACITY GAP (“REALISTIC” SCENARIO)

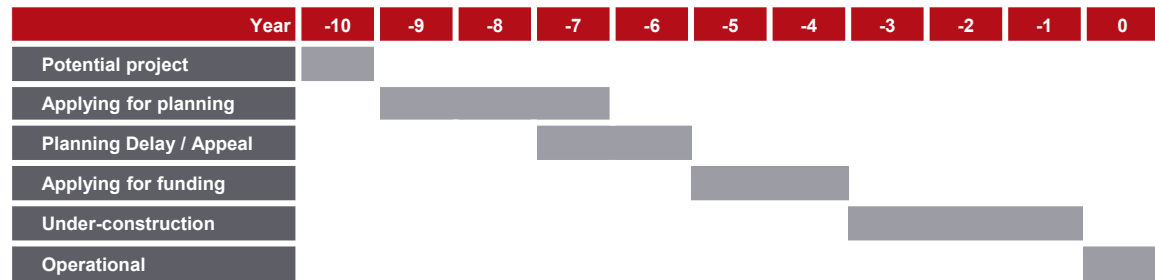


Future EfW




Recycling
EfW
Landfill

- Historic plants were delivered under PFI / PPP contracts. Limited opportunity for future development without secured long-term waste supply contracts
- Long term, efficient generation of de-centralised low carbon and renewable power is consistent with government policy and objectives
- 90% of new capacity will be medium to large scale incineration EfW (proven technology understood by funders, not dependent on government subsidies)
- Significant barriers to entry;
 - access to consented sites - planning and permitting can take up to five years
 - suitable and secure waste feedstock is critical to a successful project
 - access to capital - capital intensive projects with long-term payback
 - Government support (ROCs / CfD) are in decline and / or ending creating a barrier to new technologies
 - Extended timescales for delivery

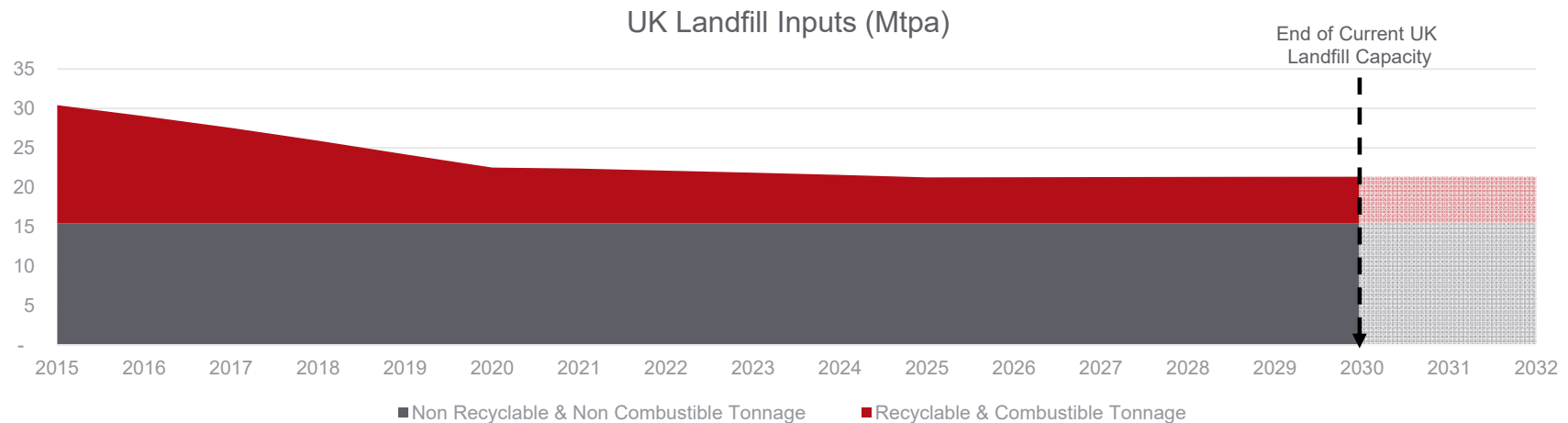
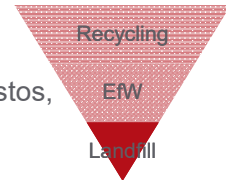


Landfill Capacity

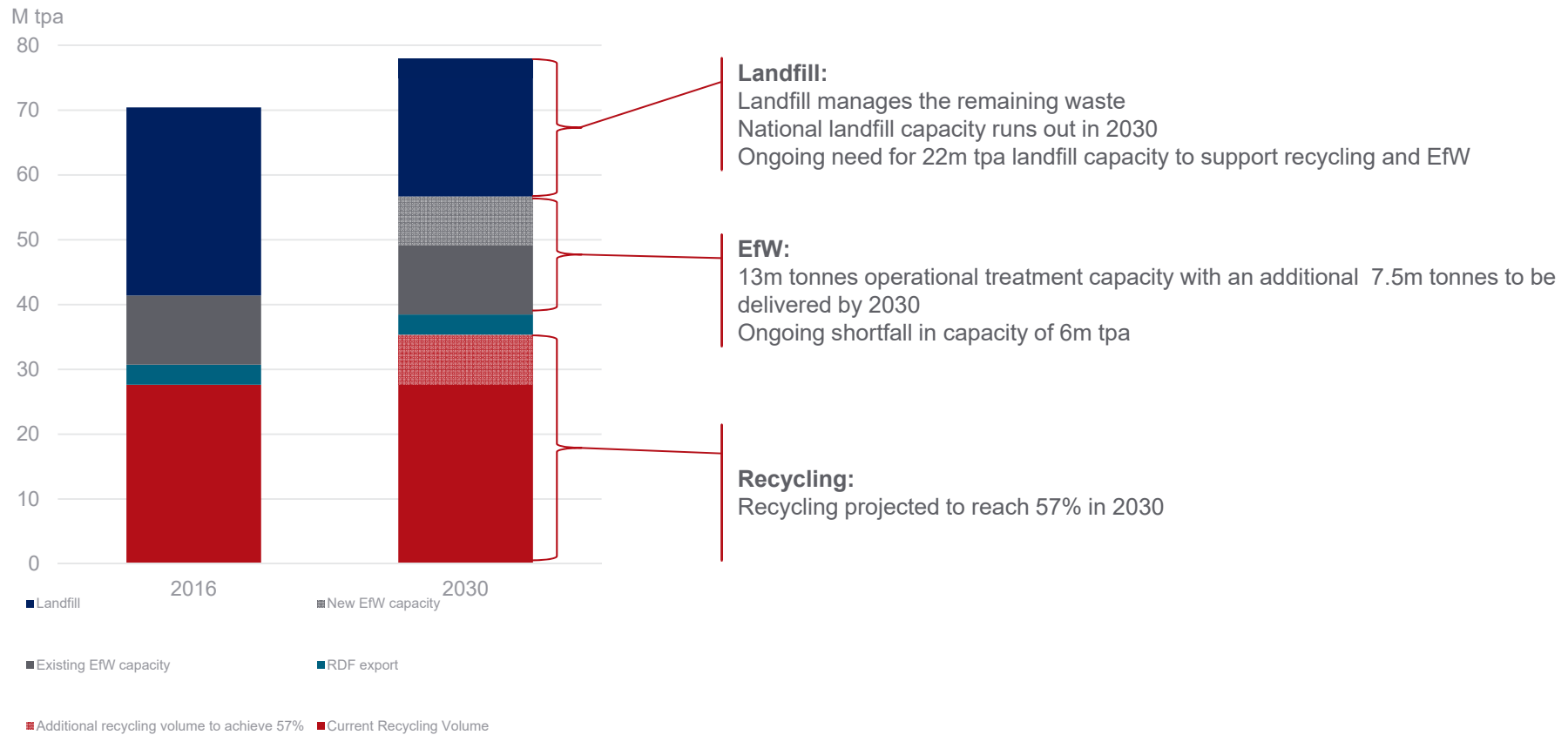


Landfill will continue to play a crucial role in UK waste management

- In addition to the recyclable and combustible 'Gap' tonnage there are 15m tpa of specialist waste streams such as sludges, asbestos, various inerts and difficult waste streams that require landfill capacity for disposal
- Even with predicted new treatment capacity (recycling and EfW) the UK faces a shortfall in landfill capacity by 2030 as current capacity is filled. Localised shortfalls already exist, resulting in increased gate fees and increased haulage costs
- The UK needs 4-5 new landfill sites to be developed annually to maintain long term disposal continuity
- Discussions with Government experts indicate that this on-going landfill need is now being recognised, informed by our report



Waste and Resource Management 2030



Conclusions



	Recycling	EfW	Landfill
Market Need	<ul style="list-style-type: none"> • 7m tpa additional capacity • Infrastructure – niche materials (plastics, aggregates), ADs, MRFs • £1bn³ investment 	<ul style="list-style-type: none"> • 5m tpa additional capacity • Infrastructure – medium to large scale incineration technology • £3.25bn⁴ investment 	<ul style="list-style-type: none"> • 22m tpa additional capacity • Infrastructure – 4 / 5 new landfills developed each year
Supply of aggregated waste volumes through collection logistics			
Biffa Position	<ul style="list-style-type: none"> • National network of facilities • Handling capacity >3Mtpa • Strategic Material Recycling Facility (MRF) footprint • 10% market share 	<ul style="list-style-type: none"> • Partnership with Covanta (experienced EfW operator) • 2 consented sites strategically located in regions of under capacity 	<ul style="list-style-type: none"> • 11 operational landfills nationally • Significant development and operational experience • Land bank portfolio • 13% market share
National logistics operation and control of >2m tpa of recyclable and combustible waste			

³ Management assessment

⁴ Management assessment



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Q&A

www.biffa.co.uk