REA Q&A Opportunity on Defra Report:

Financial Costs and Climate Change Impacts of Current and Future Landfill Operations

DEPARTMENT FOR THE ENVIRONMENT FOOD AND RURAL AFFAIRS

RESOURCE AND WASTE SOLUTIONS PARTNERSHIP

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Report Aim and Objectives

- Identify the overall costs, and the costs of individual elements of landfilling non-hazardous waste in England
- Identify the current landfill capacity in England
- Predict the future capacity needed under the Resources and Waste Strategy and other proposals
- Identify the environmental and financial issues associated with providing that capacity

Assessment against these Scenarios

- Scenario 1 - continuation of the situation in 2018 prior to the publication of the 25 Year Environment Plan and the Resources and Waste Strategy
- Scenario 2a - targets and policy proposals within the Resources and Waste strategy are fully met five years earlier than the anticipated timescale, (generally by 2030)
- Scenario 2b - meeting the Resources and Waste Strategy targets by the published timescale of 2035
- Scenario 2c - meeting the 'Further Ambition' targets for waste set out by the Committee for Climate Change for 2025
- Scenario 3 - to examine the potential for landfills with passive gas and leachate management based on restricting the organic content of landfilled wastes post 2030

Report Conclusions - 1

- 75% of the current landfill capacity for non-hazardous wastes in England is at 36 sites. 50% of the total capacity is in 15 operational sites
- At 2018 rates of input, new void space would be required by 2024
- This date stretches to 2028 if planned EFW capacity is commissioned
- And stretches further to 2030 by increased recycling scenarios
- The void space requirement for new landfills ranges from 863 Mm^3 in Scenario 1 to 604 Mm^3 in Scenario 2c
- The cost of new landfill capacity varies in line with amounts of waste recycled, ranging from £13.1 Bn in Scenario 1 to £8.9 Bn in Scenario 2c
- Costs per tonne landfilled range from £13.06 in Scenario 1 to £12.74 in Scenario 2c with the largest elements in the variation being related to assumptions on landfill gas utilisation for electricity generation

Report Conclusions -2

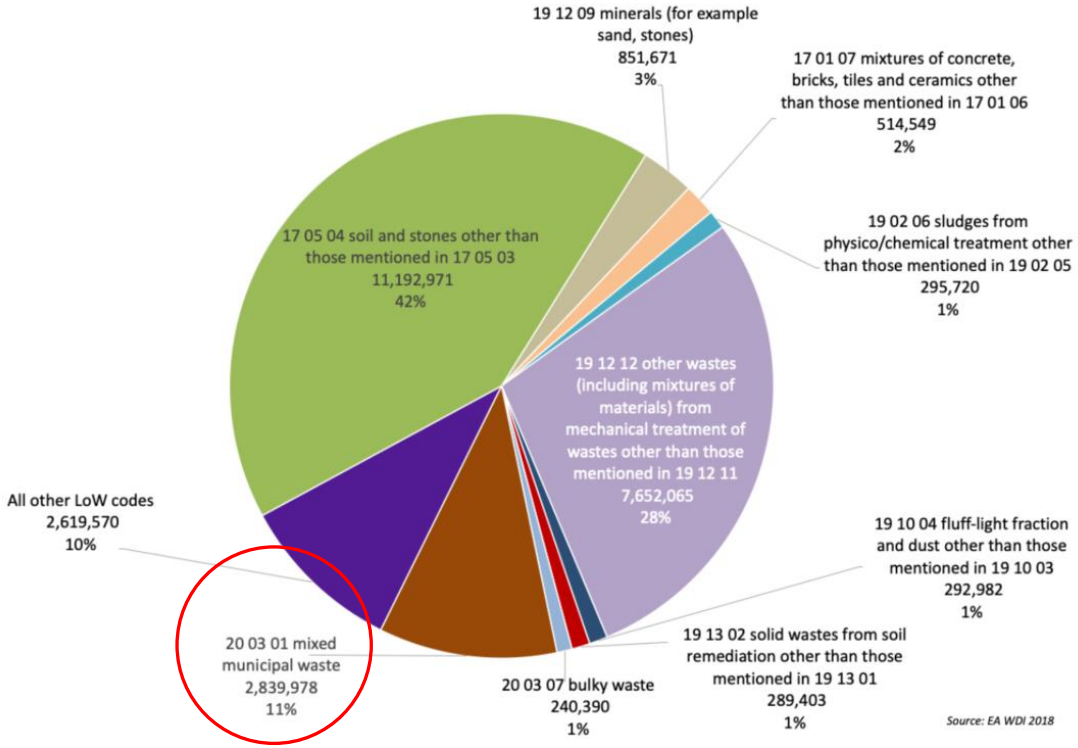
- Government should consider replacing ROCs with landfill gas collection efficiency payments when the ROCs scheme ends in 2027
- The industry's view was there were no plans to develop future landfills. Every major company wants a biodegradable landfill in each region. Financial uncertainties are delaying or restricting investment in landfill
- Government should engage further with industry on the provision of strategic landfill reserves for unplanned arisings of biodegradable waste
- There is potential for the development of passively-managed low organic landfills
  - They are unlikely to meet the Environment Agency's current standards for passive management of closed landfills
  - Their climate change impacts could be substantially lower than modern landfills with active gas extraction
  - This is dependent on the effective diversion of biodegradable waste fractions

List of uncertainties raised by operators

- Policy uncertainty or delays from Government regarding targets/timescales/export restrictions for recyclables
- UK or England Incineration tax. This would put pressure on EfW gate prices. Possible knock-on impact on landfill gate fees where sites are in competition with EfW
- Other export-based policy changes, including incineration taxes in other countries. Recent incineration taxes in Netherlands and Sweden had an immediate impact on UK waste management facilities (exports of RDF already affected)
- Operators recognised Brexit-related export restrictions as a short-term issue and of less long-term importance than other bans or controls
- Enforcement - if policies and other interventions are introduced but not enforced evenly
- Robust implementation and monitoring programmes by governments and timely response if changes are needed to achieve the objectives
- Reliability of both domestic and export secondary materials markets
- Calorific value of residual wastes depend on composition/suitability for EfW/landfill
- De-carbonisation of power generation making EfW (and LFGTE) less attractive
- The future of power generation tariffs – beyond the current proposal to phase-out ROCs by 2027

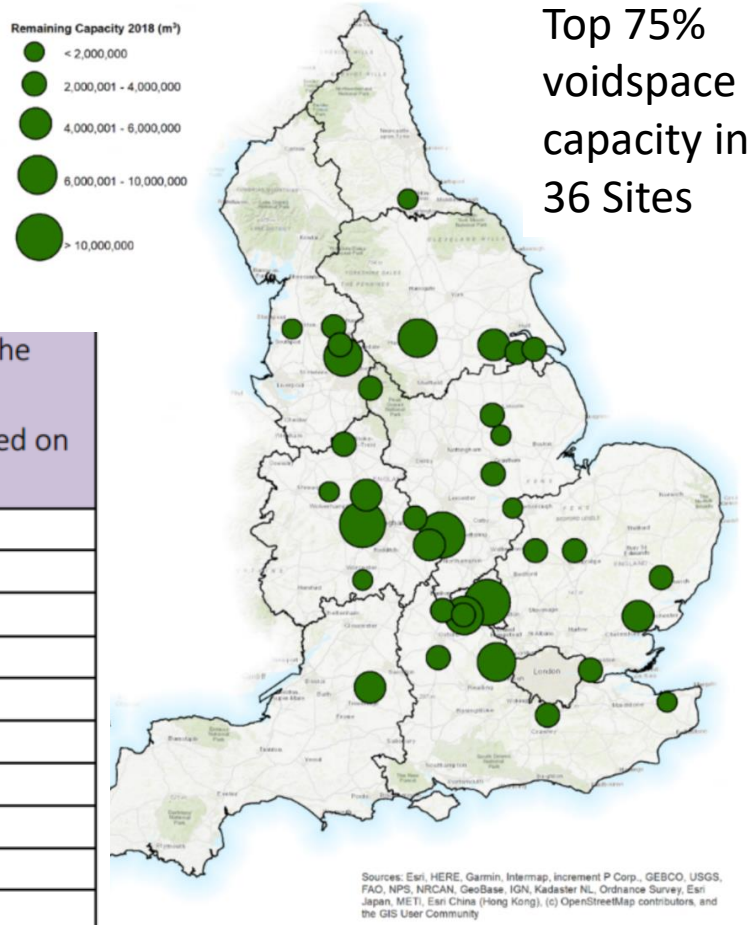
Key Issues for REA: 1. Landfill waste is not generating as much LFG

- LFG fuel in landfills is now mostly from historic wastes
- Continuing GHG Impacts from historic wastes
- End of ROCs in 2027
- Industry and modellers agree that brown power sites are not economic
- Increasing difficulty of collecting LFG in older sites
- Difficult/impossible to collect any LFG from Low Organic Matter landfills
- High cost of gas treatment in some sites hidden by lack of granularity in data



Key Issues for REA: 2. EfWs, Regional voidspace variations and transport costs

- Voidspace issues raised needs certainty in govt policy
- Uncertain how many EfW incinerators will be completed
- EfW assets need to be worked hard to get best economics. Landfills don't require so much effort
- Transporting waste inter-regionally is a substantial cost and brings its own transport emissions



Top 75% voidspace capacity in 36 Sites

	Remaining capacity for non-hazardous merchant landfills at end 2018 (cubic metres, millions)	Years of landfill life at the end of 2018 for non-hazardous landfills based on 2018 inputs[a]
East Midlands	24.5	7.1
East of England	29.3	4.3
London	5.8	3.3
North East	9.7	3.2
North West	26.7	5.9
South East	43.8	5.3
South West	14.8	4.4
West Midlands	41.8	11.2
Yorkshire & Humber	39.2	9.4
England	235.8	6