Options for Recycling & Food Waste Collections

Cabinet Task & Finish Group
25th July 2018.

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What are we going to look at?

- What to do with Food Waste Collections?
- The three main recycling collection models operating in the UK – source separate – twin stream – fully comingled
- Advantages / Disadvantages with twin stream & fully comingled
- Legal obligations & TEEP requirements
- Modeling analysis of each model. With and without food waste
- Potential Capital requirements
- Update on EU Circular Economy Package
- Processing and markets
- Net costs of different options including processing with and without food waste
- Questions & Next Steps

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What to do with Food waste Collections? Background

- Introduced in 2010 as part of significant service change, and as mitigation for changing from weekly collection of residual waste, to fortnightly.
- Participation around 50% households taking part
- 2,700 tonnes collected in 2017/18, = 3% of the total recycling rate for the Council
- Treatment costs are very low, and treatment generates energy.
- Great way of identifying how much food we waste as individuals once you see it separated.
- Currently collected along with recycling on the same vehicle and bulked up at Knutton Lane.
- Currently unable to collect from flats which are on a bin system.

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What to do with Food waste Collections? Moving Forward

- Maintaining weekly collections of food waste utilising collection vehicle for residual waste and recycling would require these vehicles to have separate food pods, therefore requiring replacement of two thirds of the RCV fleet.
- Refuse collection vehicles with food pods are rare, and therefore difficult to source on the hire market if required, and therefore could impact on the reliability of the service in bad weather or other major issues.
- The majority of authorities run a separate fleet for the collection of food waste.
- Separate fleet would allow collection from flats, schools and allow the Council to provide commercial collection of food waste.

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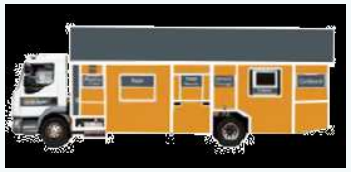
Multi-stream with separate food – current service

Dry Recycling	Residual Waste / Garden Waste	Food Waste
 Paper  Card & Glass  Plastic & Cans		
Maximum 165 litres weekly	Maximum of 240lts fortnightly	Food – 23lts weekly
Vehicle – 12t multi compartment	Vehicle – 26t standard RCV	Vehicle – N/A
		Included in dry recycling

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Two-stream (fibres separate) with or without separate food

Dry Recycling		Residual Waste	Food Waste
 	Paper or Paper& Card		
	Glass Plastic & Cans & Card ?		
Maximum 175 litres fortnightly		Maximum 240lts fortnightly	Food – 23lts weekly
Vehicle – 26t Split body RCV		Vehicle – 26t standard RCV	Vehicle – 7.5t RCV
			

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Co-mingled with or without separate food

Dry Recycling	Residual Waste	Food Waste
 Paper Card Glass Plastic Cans		
Maximum 240lts fortnightly	Maximum 240lts fortnightly	Food – 23lts weekly
Vehicle – 26t standard RCV	Vehicle – 26t standard RCV	Vehicle – 7.5t RCV
		

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Advantages / Disadvantages – Twin Stream

Advantages	Disadvantages
Easier for the householder to use	Householder will still need to separate paper / card
Provides more consistency with some Staffordshire and other neighbouring authorities collection systems	Difficult to integrate separate food waste collection
Maintains the 'high' value high quantity materials separately. This takes some of the volatility risk out of the operation	Contamination levels will increase, which will lead to increased costs if not effectively managed.
Increased productivity in collections.	Glass in the comingled element remains a problem. Difficult from a TEEP issue.
Easier to recover following bad weather / other incidents	Twin pack vehicles not as reliable as standard RCV's

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Advantages / Disadvantages – Comingled

Advantages	Disadvantages
Very easy for the householder to use	System will generate high levels of contamination, which could lead to increased costs, and will need to be managed effectively.
Requires a standard RCV for collections, therefore more flexibility in the fleet	Volatile markets for materials will increase gate fees
Provides more consistency with some Staffordshire and other neighbouring authorities collection systems	Materials likely to be exported following sorting process
Fast collection process similar to collecting residual waste	Will require rigorous TEEP assessment
Very easy to recover from bad weather / other incidents	Industry does not like materials from comingled collections. As they will be paying for collections under EPR, they will want more say in how it is collected / processed.
	Difficult to integrate separate food waste collection

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Legal Obligations - TEEP

- Currently **no** statutory recycling targets for English Local Authorities.
- Waste Framework Directive 2012, however obligates LA's to 'separately' collect Glass, Paper, Plastic, and Metal for recycling.
- If collecting materials comingled, it is necessary to carry out a 'TEEP' assessment.
- TEEP = **Technically, Environmentally, Economically & Practical.** In essence LA's collecting and processing comingled materials, need to prove the process produces materials to the same quality to those collected separately.
- TEEP assessments are regulated by the Environment Agency.

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Modelling Analysis - Number of Vehicles Required with & Without Food Waste

Total Vehicles to purchase (rounded up)

	Current Service for Comparison.	Option 1a – Comingled with separate Food	Option 1b – Comingled with Pod for Food Collection	Option 2a – Twin Stream with separate Food	Option 2b – Twin stream with Pod for Food Collection
Standard RCV	**12.0**	**18.0**	**6.0**	**12.0**	**6.0**
RCV + Food Pod	0.0	0.0	**12.0**	0.0	**6.0**
Twin pack	0.0	0.0	0.0	**9.0**	0.0
Twin pack + Food Pod	0.0	0.0	0.0	0.0	**9.0**
Dedicated Food	0.0	**6.0**	0.0	**6.0**	0.0
RRV	**15.0**	0.0	0.0	0.0	0.0
Total	**27.0**	**24.0**	**18.0**	**27.0**	**21.0**

*** Vehicle numbers do not include Spare Vehicles**

Commentry	Current service - No change	Recycling service can be replaced by ~5-6 vehicles (similar type to current Refuse and green) once moving to comingled. 6 - 7.5t food waste vehicles required	Using pod vehicles requires an extra vehicles for each of the residual and dry recycling services. No dedicated food waste vehicles required 6 standard RCV's are for Garden Waste	The dry recycling service requires ~ 9 twin pack RCV's for the two-stream service. Higher number required as the large compartment is filling up with the plastic/cans/glass and requiring an additional tip (reducing time on collections) 6 - 7.5t food waste vehicles required	Similar to Option 2a with the dry recycling service requiring ~ 9 one- pass vehicles for the two-stream service and food. Higher number required as the large compartment is filling up with the plastic/cans/glass and requiring an additional tip (reducing time on collections). No dedicated food waste vehicles 6 standard RCV's are for Garden Waste
Types of vehicles	2 main types	2 main types	2 main types	3 main types	3 main types

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Cost Analysis – Capital Requirements

- Procurement of Wheelie bins + distribution = £ 913,000
- Procurement of Vehicles between £960,000. and £3,810,000.
- Alterations to Knutton Lane Transfer Station to deal with different material mix. = £500,000
- Note, these costs have not been built into the model operating costs

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EU Circular Economy (CEP)

- UK has confirmed it intention to adopt CEP.
- Targets for recycling of Municipal Waste
  - 55% by 2025
  - 60% by 2030
  - 70% by 2035
- Focus on Extended Producer responsibility (EPR) for full cost coverage of collection for packaging materials paid by producers back to LA's, includes household and commercial collections of obligated packaging materials, namely –
  - Card
  - Glass
  - Plastic
  - Metal

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Processes and Markets for Materials

- Which ever option for recycling collections a transfer station will have to be operated by the Council, prior to sending to a Material Recovery Facility (MRF)
- Need to remember markets for recycled materials are global.
- Restrictions on inputs to China has had a major impact on the global market. Prices for commodities have dropped which has led to MRF gate fees increasing.
- Quality not quantity has become the focus for all types of collection

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Net costs for processing twin stream materials with and without separate food

Cost	Twin Stream with Food Separate	Twin Stream with Food Pod	Twin Stream without Food	Comparison with current service
Operating NBC TFS	£365,000	£365,000	£345,000	£405,134
Gate Fee for MRF including Transport & rebate for sale of materials	£29,623 (Food) £279,000(MRF no fibre) £516,000(MRF +Card)	£29,623 (Food) £279,000(MRF no fibre) £516,000(MRF +Card)	£279,000(MRF no fibre) £516,000(MRF +Card)	£29,623 (Food)
Income				
Paper	£164,680	£164,680	£164,680	£164,680
Paper & Card	£189,000	£189,000	£189,000	N/A
Other Income	N/A	N/A	N/A	£301,000
Recycling Credits	£580,162	£580,162	£475,711 (No Food)	£580,162 (current rate)
Collection Costs	£1,800,000	£1,300,000	£1,170,000	£1,806,441
Net Cost – Paper separate	**£1,965,781**	**£1,465,781**	**£1,390,609**	**£1,195,356**
Net Cost – P&C separate	**£1,704,461**	**£1,204,461**	**£1,129,289**	**N/A**

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Net costs for processing comingled materials with and without separate food

Cost	Comingled with Food Separate	Comingled Stream with Food Pod	Comingled Stream without Food	Comparison with current service
Operating NBC TFS	£365,000	£365,000	£345,000	£405,134
Gate Fee for MRF including Transport & rebate for sale of materials	£624,000(MRF) £29,623 (Food)	£624,000(MRF) £29,623 (Food)	£624,000(MRF)	£29,623(Food)
Income				
Paper	N/A	N/A	N/A	£164,680
Other Income	N/A	N/A	N/A	£301,000
Recycling Credits	£580,162	£580,162	£475,711 (no food)	£580,162 (current rate)
Collection Costs	£1,512,146	£882,146	£882,146	£1,806,441
Net Cost	**£1,950,607**	**£1,320,607**	**£1,308,039**	**£1,195,356**

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Other things to consider

- Modelling is VERY high level, and subject to further refinement
- Impact on Garage Workshop
- Impact on recycling credit income
- The need to effectively deal with contamination which will feature in comingled collections

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Next Steps

- Questions
- Preferred option to be presented to Cabinet in September 2018.
- What else? - for discussion

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Thank You

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