

## **Cabinet Report Update**

**Date:** 17<sup>th</sup> September

**Subject:** 2<sup>nd</sup> Report - WRAP Kerbside Recycling Options Appraisal and MRF contracts

---

### **1 Purpose of Report**

- 1.1. To update Cabinet on the potential alternative collection models for dry recycling as provided through the recent support received from the Waste Resources Action Programme (WRAP) and advise on the MRF contract extensions.

### **2 Background**

- 2.1 It has been reported at previous OPB and Joint Executive Committee (JEC) meetings that separately collected paper tonnages have declined dramatically in all three partner authorities since this system was implemented in 2014 (See Appendix 1). This follows a year-on-year trend with separately collected paper tonnages now being minimal. With such low paper tonnages, this means the current kerbside dry recycling collection system is not sustainable as the authorities continue to operate split body vehicles which are not being utilised effectively i.e. one of the compartments is effectively empty most of the time.
- 2.2 Therefore, STWWMP are currently considering alternative collection models available, to identify the most appropriate method of maximising the quality of household recycling collected at the kerbside which will also assist preparations for the next MRF processing contract procurement. To help with this exercise, we have been working with and received some further support from the Waste Resources Action Programme (WRAP). Work was initially carried out in 2019, but WRAP have been reviewing the appraisal of options based on updated tonnage data, in case there has been a change in composition of dry recycling since the COVID-19 pandemic as well as impact on commodity prices. WRAP's final report, which referenced forthcoming proposals under Simpler Recycling, was presented to Officer Project Board on 22 February 2024. This note should be read in conjunction with WRAP's final report.

### **3 Summary of the Report and Presentation**

- 3.1 WRAP used data received from the Partnership and outputs from the previous options appraisal report that WRAP provided to the Partnership in 2019/20. This enabled the cost models to project the likely cost and performance of a short-list of alternative collection scenarios. The short-list, proposed by OPB was essentially, the options previously modelled but excluding food waste. WRAP agreed to update the outputs on each of these, free of charge, on the basis that there have not been any major changes to waste and recycling services since the original report.
- 3.2 The short-listed scenarios assessed by WRAP are shown below in table 1.

**Table 1: short-listed options**

Option	Residual		Dry recycling		Garden		What does this option do?
	Frequency / vehicle	Container	Frequency / vehicle	Container	Frequency / vehicle	Container	
Baseline	Fortnightly, RCV	240 litre wheeled bin	Fortnightly, twin-stream (paper separate), split back RCV	240 litre wheeled bin and insert for paper	Fortnightly (charged), RCV	240 litre wheeled bin	
Option 1a	Fortnightly, RCV	240 litre wheeled bin	Twin-stream, with separate streams collected every 4 weeks (paper and card separate), RCV	x2 240 litre wheeled bin			Enables officers to see what is likely to happen if the Palm pilot were to be rolled out across the Partnership
Option 1c	Fortnightly, RCV	240 litre wheeled bin	Fortnightly, two stream (paper and card separate), split back RCV	x2 240 litre wheeled bin			Enables officers to see the cost of a two-stream (paper and card separate) service and compare with Baseline and Option 1a
Option 1d	Fortnightly, RCV	240 litre wheeled bin	Fortnightly, twin-stream (glass separate), split back RCV	240 litre wheeled bin and insert for glass			Enables officers to see the cost of a two-stream (glass separate) service and compare with Option 1c
Comingled options	Option 2a	Fortnightly, RCV	240 litre wheeled bin	Fortnightly, co-mingled, RCV			240 litre wheeled bin

3.3 A number of inputs and assumptions were used for the short-listed alternative collection scenarios. These are listed below.

- i) Latest Tonnage data
- ii) Waste Composition Data (actuals from sampling and assumptions)
- iii) Capture rates (assumed)
- iv) Contamination rates (actuals and assumptions)
- v) Vehicle and Staff Resources
- vi) Container costs
- vii) Disposal and Treatment costs (actuals and assumptions)

3.4 The report looked at projected performance in terms of kerbside recycling levels relative to the baseline service. There were only minor differences in recycling rate percentages for the modelled options.

3.5 Combining the collection and disposal costs plus overheads produces projected 'whole system' costs. Comparing the projected 'whole system' costs for the short-listed scenarios against the baseline shows that Scenario 1a is projected to deliver the greatest saving for all 3 authorities. Projected collection, disposal and overhead costs of the future collection scenarios relative to the baseline by authority are set out in table 2 below.

**Table 2: Summary of projected costs**

		Option 1a	Option 1c	Option 1d	Option 2a
Gateshead	Collection	-£234,587	£516,829	£49,186	-£418,141
	Disposal	-£274,569	-£274,569	-£168,924	£139,740
	Overheads	-£23,236	£51,905	£7,123	-£38,530
South Tyneside	Collection	-£129,786	£291,419	£0	-£49,360
	Disposal	-£253,924	-£253,924	-£160,120	£54,010
	Overheads	-£12,686	£29,435	£0	-£2,699
Sunderland	Collection	-£247,611	£660,900	£232,112	-£286,080
	Disposal	-£327,781	-£327,781	-£276,325	£105,107
	Overheads	-£26,747	£64,104	£23,211	-£25,563

- 3.6 **Given the uncertainties of realising the collection savings, it would appear that Scenario 1a alone has the potential to deliver a financial saving to the Partnership.** (£532K Gateshead, £396K South Tyneside and £602K Sunderland savings per annum). This is a twin stream collection service with paper and card collected in one (240 litre) bin and other dry recycling (plastic, cans, glass and cartons) collected in another (240 litre) bin. The bins are collected on an alternate fortnightly basis i.e. each bin emptied once every 4 weeks. This collection system would enable the use of single bodied vehicles instead of split bodied vehicles.
- 3.7 However, this would require an additional bin for the paper and card stream which is a significant capital cost requirement. There are also political sensitivities with providing an additional bin to residents. The cost of the additional bin to all households is estimated at approximately £7,000,000 across the partnership (£2.1m GHC; £1.7m STC; £3.1m SCC). Therefore, the initial costs of providing additional bins could be offset by the estimated savings discussed in 3.6 above. This would be at least 4 years in each Authority before a net saving could be realised.
- 3.8 WRAP have suggested a full business case should be produced before making a final decision on the most feasible collection model, as the report is based on modelled costs with a number of assumptions, comparing to a baseline.
- 3.9 The next most feasible option, according to the financial comparisons shown in Table 2 above would be option 2a, a fully comingled recycling collection service. This would not require an additional bin for residents. However, the overall, whole modelled costs were not too dissimilar to our current whole system costs.
- 3.10 A Carbon assessment has not been carried out in this updated report. Therefore, we only have the information provided in the 2019 report. In this report, a carbon assessment was completed on each of the options using the English Carbon Metric (ECM) produced by WRAP. The metric has been developed at DEFRA's request to allow monitoring and evaluation of the impacts of the Resources and Waste Strategy in England, in terms of its Greenhouse Gas emissions impact, measured as carbon dioxide equivalent

(CO<sub>2</sub>e). The metric does not provide a “footprint” (i.e. it is not a statement of the absolute emission that can be attributed to a material, product or activity) but rather a relative measure that quantifies the carbon saving (or additional emission) for a given material / treatment combination. See Appendix 2 for more detailed information of the carbon assessment from the previous report in 2019. However, as this assessment was carried out when the Councils had different contract arrangements, as well as including the impact of collecting food waste separately and updated tonnages and composition, this is not an accurate assessment of the modelled options.

## **4 Discussion points**

### **MRF Contract and extension**

- 4.1 The current MRF contracts were discussed. It was suggested the best option in the current climate would be to extend the current contracts potentially for the full two years. This would allow time to make a decision on future collection models (i.e. producing a business case and getting political approval). If the Authorities were to go out to tender this year, we would not be able to confirm what collection system the Authorities were moving to and this would potentially increase prices due to the level of uncertainty around this and reduce competition as some companies may not bid as they would want confirmation that they could handle the material. If the Authorities were to opt for a twin stream collection system with fibre separate then the contract and tender documents would potentially be completely different to the current contract ie we may require different lots or even contracts for the fibre element. The type of contract or contract to be tendered is still to be discussed and decided and this may take several months.
- 4.2 It would also give more time to consider the impact of Simpler Recycling, in particular DRS, EPR and the introduction of films and flexibles from April 2027. Defra has said it “remains committed” to DRS following reports in the national media of a delay, which, if true, would see the scheme delayed until 2028. This isn’t ideal as we were hoping for detailed information in terms of impact on composition to assist in the new MRF tender. However, an extension to the current contract does not change this and only helps to give us more time to find out if this delay is correct.
- 4.3 It was also agreed there is a high risk that prices could increase if the authorities go out to tender this year due to the uncertainty around Simpler Recycling and based on information provided by WRAP in their latest gate fees report which suggests MRF gate fees are currently increasing. The current contracts seem to be very competitive based on WRAP gate fee information and also based on the fact the current MRF contractors bid in 2021 when risks were lower in terms of Simpler Recycling as no details were known at this stage. By extending the current contract this would give more time for the Partnership to carry out further benchmarking on the trend for MRF procurements nationally and regionally.

### **Kerbside Collection Options**

- 4.4 The WRAP report confirmed there are potentially two front runners in terms of collection options, twin stream with fibre separate and fully comingled. These collection options (options 1a and 2a) can both be carried out using single bodied vehicles so long term it is likely the partner authorities will move to this vehicle type.
- 4.5 An important factor to consider is the current fleet replacement programme and operation of ageing split bodied vehicles. The current fleet information in each Authority is included in Appendix 3. Partner authorities could consider replacing split bodied vehicles with single bodied vehicles as and when they need replacing. Collections would have to be fully comingled on these rounds. It was acknowledged many households do not currently use a caddy for newspapers and magazines so in effect we are currently operating a largely fully comingled service anyway. Therefore, there would be minimal impact to the current service. However, the following implications would need to be considered:
- i) Liaise with MRF contractors to discuss the impact of phasing out twin stream vehicles and providing a fully comingled service in more areas of the partner boroughs.
  - ii) Consider the financial impact of this proposal including vehicle costs, saving on caddy replacements and additional cost of processing newspapers and magazines mixed rather than being separate. (See Appendix 4)
  - iii) Consider the impact to the public and reputational risk in collecting all recycling mixed.
- 4.6 Longer term when the partners decide on what kerbside collection option to adopt then the transition can be made relatively easily as both options 1a and 2a can be carried out using single bodied vehicles.
- 4.7 It should be noted that we are still awaiting the outcome of the consultation on whether we can fully comingle recycling without the need to submit a written assessment. This would be in the form of statutory guidance however nothing has been confirmed nor set out in regulations to date.
- 4.8 The overall composition of dry mixed recycling streams and in particular the fibre stream is an important factor. We have stated earlier that the tonnage of separately collected paper collected in the caddies is declining year on year. We need to understand that this trend is not also occurring to the fibre in the blue bin as we know composition has changed post pandemic. However the percentage of fibre in the blue bin including the separately collected paper has actually been quite consistent over the past 5 years. This is certainly the case in Sunderland where the same contractor has carried out sampling throughout this period. In Gateshead and South Tyneside, the composition has fluctuated more and has reduced in the last 2 years however this could be the result of different contractors carrying out the sampling and the higher contamination figures experienced in Gateshead and South Tyneside over this same period. The historical percentage composition and the 2023/24 composition showing impact on annual tonnages are shown in Appendix 5.

- 4.9 Furthermore, recent data from Gateshead's trial area is similar to the Sunderland data whereby there is 40% Fibre collected compared to 60% dry mixed recycling.
- 4.10 Further to 4.5 iii above, evidence would suggest that paper and card can still be recycled at MRFs even when operating a fully comingled collection service. Although, contamination can impact the amount recycled compared to separately collected paper and card, companies are still producing quality outputs. This can be seen at J & B where a news and pams grade is produced from fully comingled streams, which goes straight to paper mills. Other companies have also stated that technology exists to be able to sort paper card from fully comingled streams. A previous Contractor, Regen presented at a recent APSE conference on this and we have the findings from this.

## **5 Recommendations**

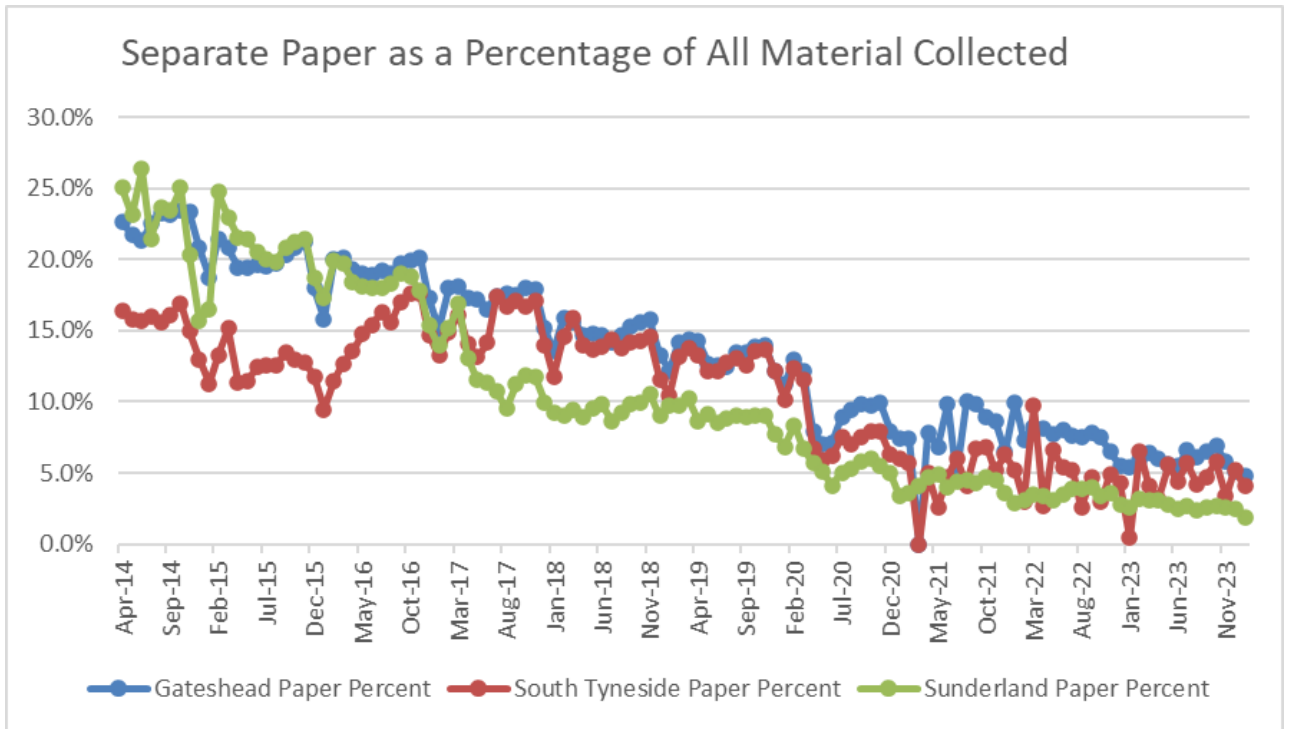
- 5.1 The Officer Project Board is requested to:
- i) note contents of the report;
  - ii) Agree to a 1 year extension to the current MRF contracts;
  - iii) agree the next steps to enable the Partners to move to a new kerbside collection model and help determine the contracts that will be required to process the materials collected;
  - iv) consider the financial implications of the preferred collection option.

---

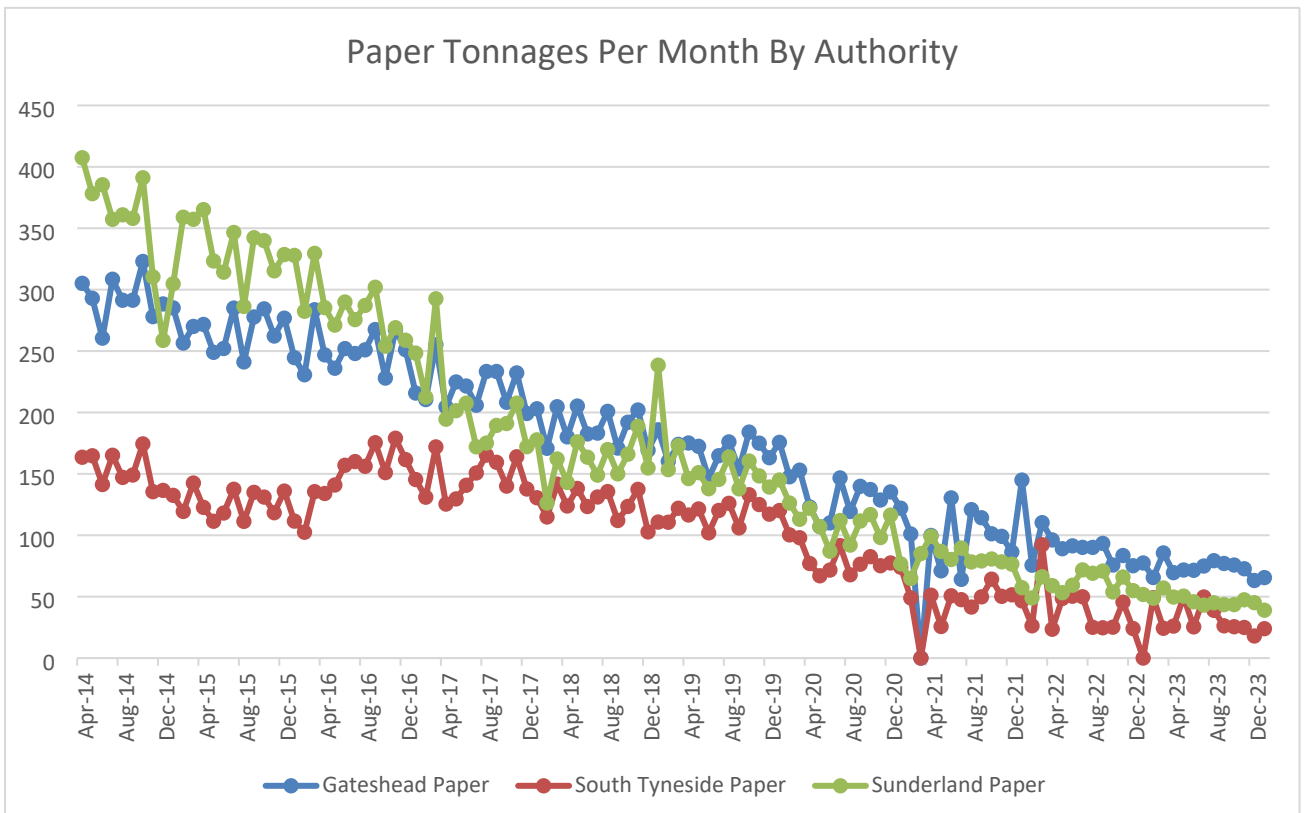
### **Contacts:**

Gary Smith, Contract Manager – Recycling

**Tel 433 7480**



**Figure 1: Separate paper collected as a percentage of all dry recycling**



**Figure 2: Total tonnage of Separately collected paper**

	<b>Gateshead</b>					
<b>Year</b>	<b>Total Material</b>	<b>Gateshead Paper Percent</b>	<b>Paper</b>	<b>Comingled</b>	<b>Fibre Trial</b>	
2014/15	15765	21.9%	3451	12314		
2015/16	16260	19.4%	3159	13101		
2016/17	15737	18.6%	2929	12808		
2017/18	15299	16.6%	2542	12757		
2018/19	15286	14.4%	2206	13080		
2019/20	15403	12.9%	1987	13416		
2020/21	17746	7.7%	1370	16376		
2021/22	16290	7.5%	1218	14942		130
2022/23	15308	6.6%	1013	14199		96
2023/24	12306	5.9%	721	11507		78

**Figure 3a – All annual historical tonnages – Gateshead**

	<b>South Tyneside</b>					
<b>Year</b>	<b>Total Material</b>	<b>South Tyneside Paper Percent</b>	<b>Paper</b>	<b>Comingled</b>	<b>Fibre Trial</b>	
2014/15	11838	15.0%	1772	10066		
2015/16	12220	12.0%	1471	10749		
2016/17	11978	15.6%	1863	10114		
2017/18	11216	15.2%	1700	9516		
2018/19	10952	13.4%	1471	9481		
2019/20	11154	12.4%	1386	9768		
2020/21	13046	6.2%	810	12236		
2021/22	12481	4.8%	598	11793		91
2022/23	11379	3.4%	390	10905		83
2023/24	8247	3.7%	308	7862		77

**Figure 3b – All annual historical tonnages – South Tyneside**

	<b>Sunderland</b>				
<b>Year</b>	<b>Total Material</b>	<b>Sunderland Paper Percent</b>	<b>Paper</b>	<b>Comingled</b>	
2014/15	19026	22.2%	4228	14798	
2015/16	19349	20.2%	3902	15448	
2016/17	18798	17.3%	3246	15552	
2017/18	20314	10.7%	2177	18137	
2018/19	21080	9.6%	2026	19054	
2019/20	20471	8.4%	1714	18757	
2020/21	24478	4.9%	1190	23288	
2021/22	22569	4.1%	921	21648	
2022/23	21348	3.4%	716	20633	
2023/24	17716	2.6%	453	17264	

**Figure 3c – All annual historical tonnages – Sunderland**

2023/24 – not a full year.



## Appendix 2

Carbon impact: A carbon assessment was completed in the options appraisal report in 2019 for each of the options using the English Carbon Metric (ECM) produced by WRAP. The model accounts for the different treatment routes of the key dry recycling materials (paper, card, glass, plastics and metals) and organic materials. All future options show a carbon saving compared to the Baseline for each authority. Contamination from the dry recycling stream subsequently sent to Energy from Waste, is a key contributor to emissions, particularly for fully co-mingled options. The greatest carbon savings are identified for options where glass is collected as a separate stream (Options 1d and 3) as it is assumed more of this tonnage could be reprocessed as 'closed-loop'. The impact of this has greater significance for Gateshead and South Tyneside as the Baseline model assumes a greater proportion of glass is sent for 'open-loop' recycling than is the case in Sunderland.

The Carbon impact of the modelled options (expressed as tonnes of CO<sub>2</sub>e per tonne of waste collected) for each authority is shown in Figure 4

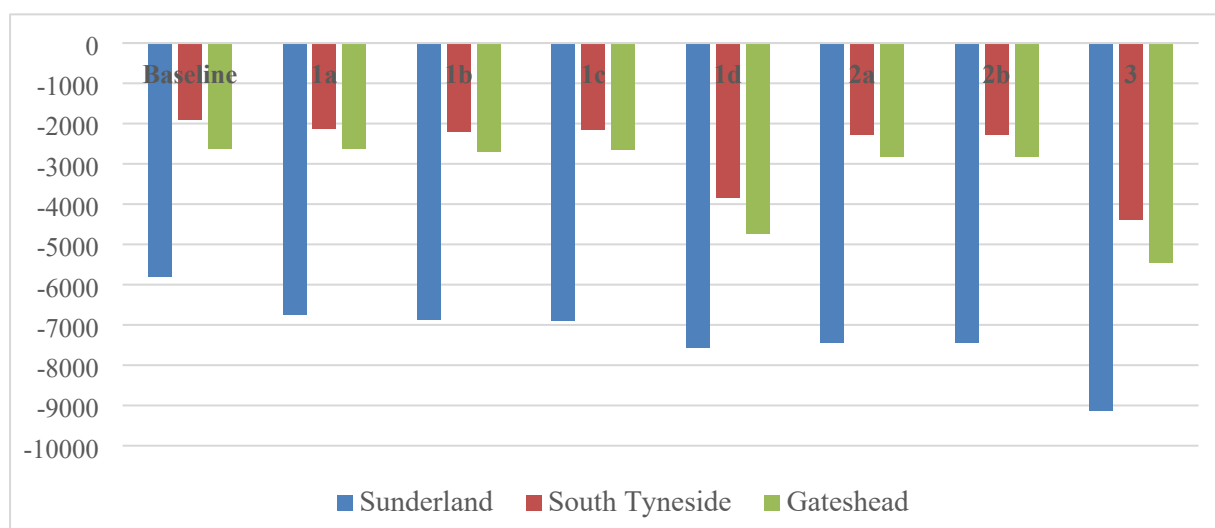


Figure 4: Carbon impact of the modelled options (tonnes of CO<sub>2</sub>e per tonne of waste collected)

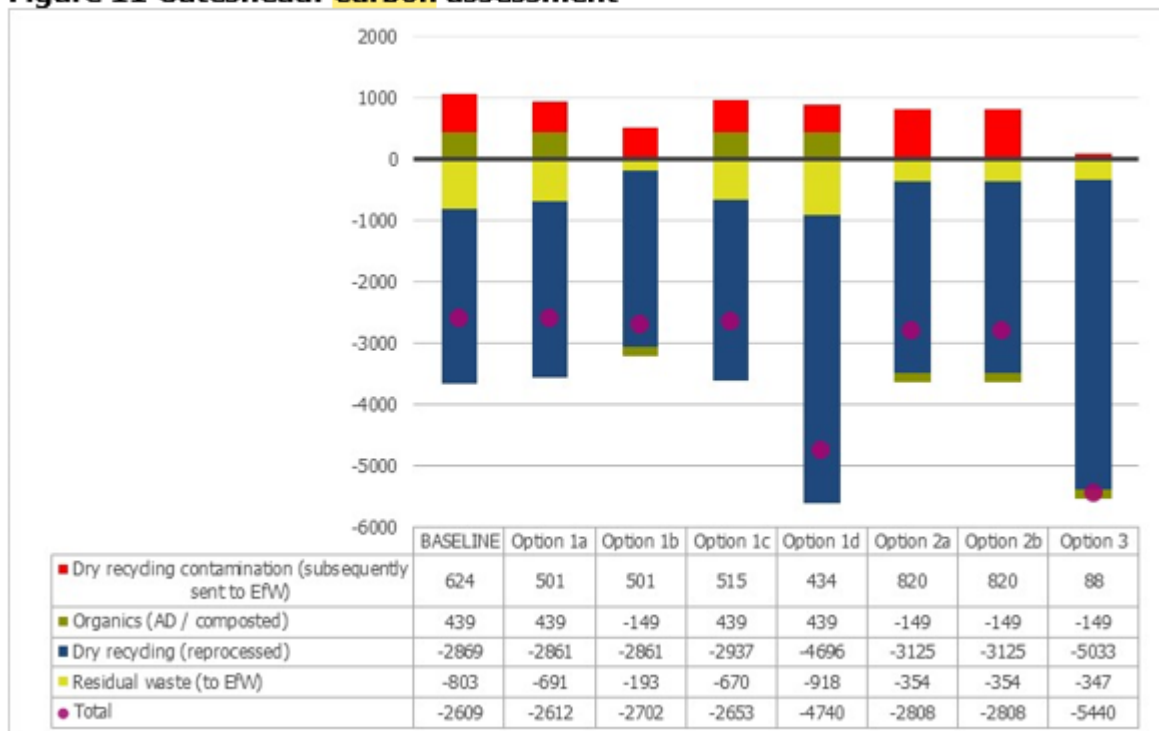
The assessment uses the following approach:

- The model accounts for the different treatment routes of the key dry recycling materials (paper, card, glass, plastics and metals) and organic materials. It does not account for all waste collected by the Councils (e.g. textiles are not included within the model).
- For the residual waste stream, an assumed composition profile has been applied to identify the quantity of each recyclable material and calculate the net impact of incinerating that mix of materials in the Baseline.

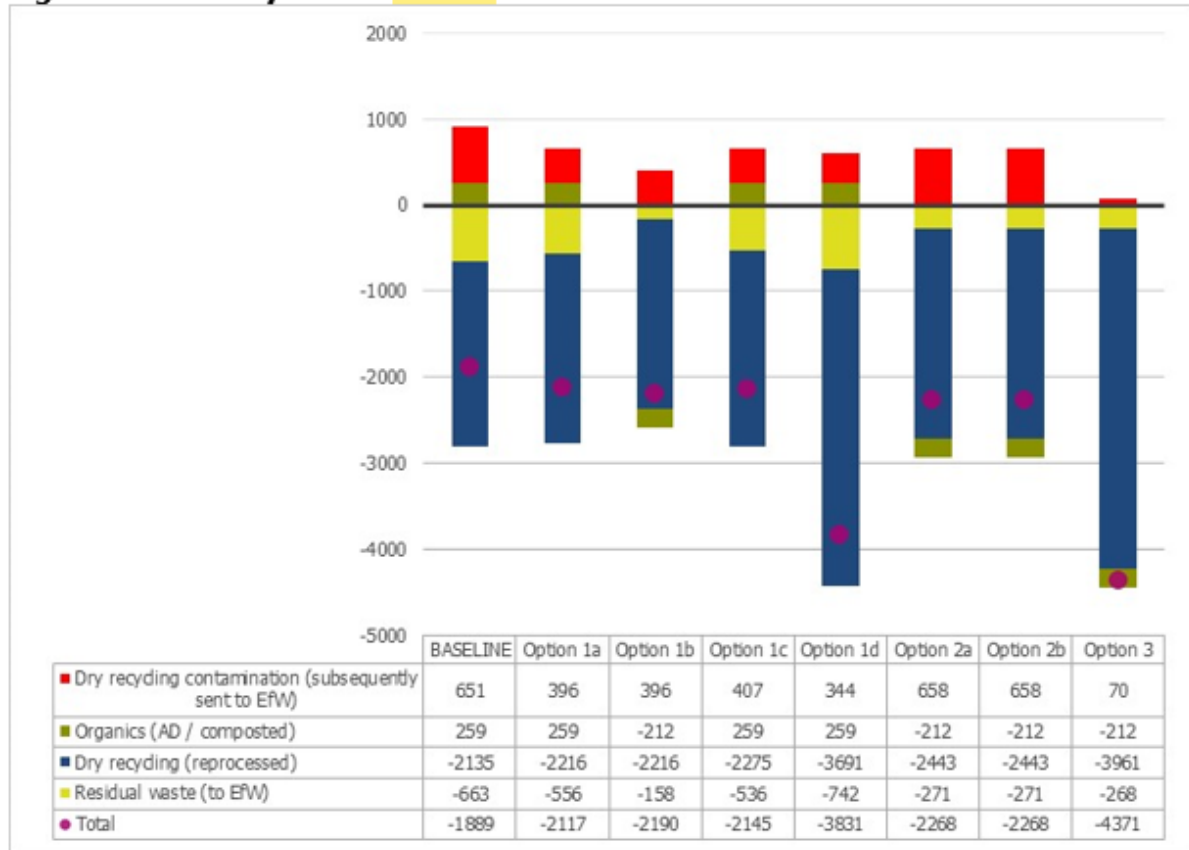
- For future options, the model diverts recyclable materials in the residual stream to either the kerbside dry recycling or organics collection based on the yields modelled in KAT.
- **Only transport emissions associated with collection and transport for reprocessing are included in the metrics. Transport emissions built into the metrics are indicative and do not account for the different vehicle types / engine emissions or distances travelled to unload used within the options modelled within this appraisal. Further analysis will be required to identify the anticipated Carbon impact of the specific vehicles assigned to each of the options.**
- For organics, the model accounts for food waste tonnage sent to AD in future options that collect food separately.
- The metrics include closed and open loop recycling figures for glass. Closed-loop recycling is a process where glass is collected, recycled and then used again to make the same product it came from (e.g. bottles and jars). An open loop process is one in which the glass is recycled into a different product, which usually has limited opportunity for further recycling. For example, using mixed cullet as an aggregate in road construction.

Dry recycling contamination is assumed to be sent for incineration. Contamination is modelled on the yields projected for each option. However, it does not account for any lost material through the MRF sorting process.

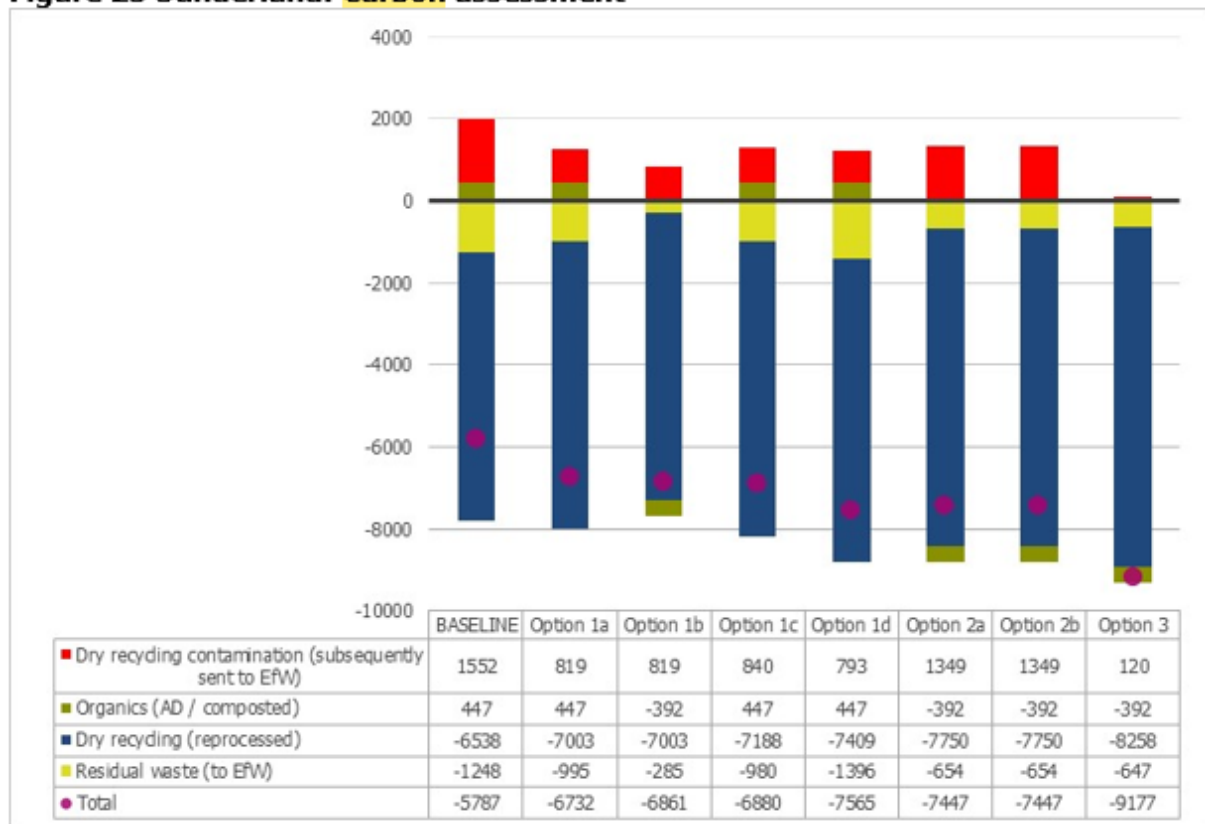
**Figure 11 Gateshead: Carbon assessment**



**Figure 17 South Tyneside: Carbon assessment**



**Figure 23 Sunderland: Carbon assessment**



### Appendix 3 – Fleet Information – Recycling Vehicles (twin packs) only

Gateshead				South Tyneside				Sunderland			
Fleet no	Reg	Type	Date of Replacement	Fleet no	Reg	Type	Date of Replacement	Fleet no	Reg	Type	Date of Replacement
6428	VN14PZM	Split Body	2021	703	NK18 WRJ	Split Body	2025	10	NK18WEC	Split Body	2025
6430	ND66HHJ	Split Body	2024	704	NK18 WRP	Split Body	2025	11	NK18WEF	Split Body	2025
6431	ND66HHC	Split Body	2024	705	NK18 WRO	Split Body	2025	12	NK18WEH	Split Body	2025
6432	ND66HHE	Split Body	2024	706	NK18 WRN	Split Body	2025	13	NK18WEJ	Split Body	2025
6433	ND66HHF	Split Body	2024	707	NK18 WRL	Split Body	2025	14	NK18WEO	Split Body	2025
6434	NG66CDN	Split Body	2024	714	ND68 WNO	Split Body	2026	15	NK18WEP	Split Body	2025
6435	NK17VSX	Split Body	2024	715	ND68 WNP	Split Body	2026	16	NK18WEU	Split Body	2025
6436	NK17VSY	Split Body	2024	721	NK69XKP	Split Body	2026	17	NK18WEV	Split Body	2025
6438	VO15ZDY	Split Body	2022	R017	VN17DSE	Split Body	Hired in	18	NK18WEW	Split Body	2025
6209	NX17HRW	Single body (Alley Cat)	2024					19	NK18WEX	Split Body	2025
6210	NX17HRU	Single body (Alley Cat)	2024					6	NK22ZXJ	Split Body	2029
6211	NX17HMF	Single body (Alley Cat)	2024					7	NK22ZXL	Split Body	2029
6212	NX17HMG	Single body (Alley Cat)	2024					8	NK22ZXM	Split Body	2029
6213	NX17HRZ	Single body (Alley Cat)	2024					9	NJ23BGV	Split Body	2030
6214	NX17HSD	Single body (Alley Cat)	2024								
6215	FN68EKD	Single body (Alley Cat)	2025								
6216	FN68EKE	Single body (Alley Cat)	2025								
6217	LN70ZNV	Single body (Alley Cat)	2027								

#### Appendix 4

#### **Additional cost of processing separately collected Paper in with the blue bin material**

Authority	Gateshead	South Tyneside	Sunderland
Approx Cost per annum	£91,000	£39,000	£61,000

Based on 2023/24 estimates tonnages

#### **Cost of issuing caddies**

Authority	Gateshead	South Tyneside	Sunderland
Approx Cost per annum	£45,000	£12,375	£25,000

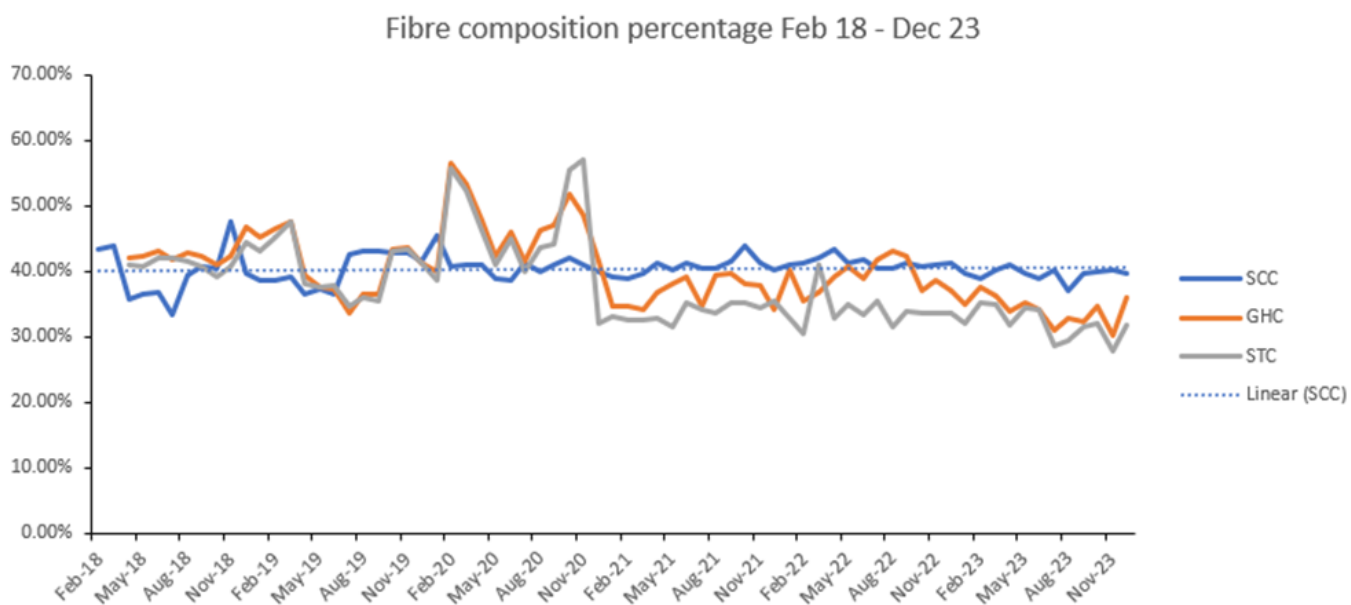
#### **Base purchase cost RCV's**

Split body RCV's are currently circa £45,000 more expensive than single body RCV's to purchase.\*

Vehicle type	Description	Cost to purchase
Split body RCV	26T OLTP-22W 6x2 RS	£260k - £270k
Single body RCV	26T OL-21W 6X2 RS	£215k - £225k

\*Info from Sunderland Council

## Appendix 5



**Figure 1: Total Fibre Composition Percentage (2018 – 2023) – all Councils**

STWWMP 2023/24 DMR average composition		%	DMR Tonnes	Separate fibres	Total	Total %	
Gateshead	DMR (inc contamination)	74%	10879		10879	69%	15726
	Fibres	26%	3834	1013	4847	31%	
South Tyneside	DMR (inc contamination)	73%	7976		7976	71%	11295
	Fibres	27%	2929	390	3319	29%	
Sunderland	DMR (inc contamination)	63%	13071		13071	61%	21436
	Fibres	37%	7605	760	8365	39%	

**Figure 2: Fibre Composition Percentage (2023/24) and tonnages – all Councils**