

## Bristol Waste Company

### Business Case

# Multi Compartmental Recycling Vehicle (MCRV) Fleet

November 2018

Version 1



Vehicle shown is for indicative purposes only

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## Document Control

DOCUMENT CONTROL	
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<b>MCRV Fleet Business Case</b>	

## 1. Executive Summary

This business case is in support of the requirement to renew all our fleet over a period of 6-12 months at an estimated cost of up to £12m. The purchases will take place in separate tranches, with the first tranche funding the purchase of 45 Multi Compartmental Recycling Vehicles (MCRV).

We are seeking approval for BCC to fund the purchase over a period of 10 years which is the predicted life expectancy of recycling vehicles. Funding via a loan from BCC combined with part match from BWC's own reserves will provide Bristol Waste Company with the most flexible method of financing, it also generates an income to BCC.

With robust maintenance and in-service repairs BWC will endeavour to extend the usefulness of these new vehicles adding long term value to our business.

This business case covers the first and most urgent requirement. This is to replace our recycling fleet at an estimated cost of £6.8M.

The second requirement due during 2019/2020 will cover the remainder of the fleet consisting of refuse vehicles, street scene vehicles and plant. The second tranche is estimated to cost an additional £5M to £6M.

*This business case seeks approval to allocate up to £12m from the council's finance resource to support the phased purchase of the new fleet in the form of a shareholder's loan, other options have also been explored including leases.*

*The exact amount of the finance required will be calculated which will net off against any sales proceeds from the disposal of the existing vehicles*

The case below lays out the requirement and, at this stage in the interests of informing BCC of the estimated investment required, outlines the funding necessary to purchase a suitable fleet of vehicles.

The vehicles will be equipped with an array of safety features and will conform to the latest energy and CO2 requisites.

Alternative fuels are being examined as at this stage electric vehicles are not currently at the level needed to fully support the contract. BWC cannot afford to wait until technology has caught up as our ageing fleet is deteriorating to the point of putting our service at risk due to too many breakdowns and repairs.

BWC request that this business case is given full consideration which will allow changes to our existing fleet to commence as soon as December/January and support and enhance the current kerbside recycling service.

### Background to Bristol Waste Company:

Bristol Waste Company (BWC) carry out local recycling, waste collection and street cleansing. We are committed to working in partnership with the people and enterprises of Bristol, to help all communities recycle more and throw away less. Additionally, we run both of the city's household

waste recycling centres (HWRCs) and a commercial waste service, offering local businesses tailored, cost effective recycling and waste solutions.

We employ over 500 local people who make 17 million scheduled collections every year, operate 230 vehicles, collect 140,000 tonnes of waste (Inc. confidential waste) and recycling per annum – of which 53,000 tonnes is sent for composting or recycling in the Bristol Region. We clean 800 miles of streets and footpaths and deal with 180,000 ad hoc job requests and service requests annually. We support student accommodation in Bristol City with recycling initiatives, events and behavioural change.

Our health and safety compliancy benchmarks are 40% lower (i.e. better) than the national average. We invest in creating and delivering sustainable waste management solutions that are in-line with legislation and the principles of the waste hierarchy.

## 2. Business Case details

<b>Project Name</b>	Multi Compartmental Recycling Vehicle (MCRV) Fleet Purchase
<b>Project Sponsor</b>	Bristol Waste Company
<b>Project Manager</b>	Tony Lawless
<b>Service description</b>	Supply of 45 Vehicles to support BWC waste services contract
<b>Partner organisation(s)</b>	Bristol City Council
<b>Project Reference</b>	MCRV Fleet

## 3. Strategic Case

The new fleet will result in a significant reduction in the number of breakdowns that BWC currently experience on a regular basis. Service delivery would improve through ensuring collection rounds are not delayed or incomplete leading to reduced resident complaints, and improved service satisfaction.

The new fleet will also allow for additional material separation and capture. This will increase recycle totals by reducing waste to landfill which will lead to a rise in recycled material percentages and income.

We are currently experiencing an average of 4 vehicles constantly off the road for MOT testing, refurbishment of badly worn body parts and essential repairs. The number of vehicles off the road can rise to 10 during extremes of weather. The average turn around on defects to return the vehicle back into service averages out at approximately 3 hours. The tangible improvements a new fleet will bring to the business will include all programmed collection rounds being completed each day within standard operational working hours. The new fleet will incorporate modern test points which allows faults to be traced in a shorter time. Add the warranty and reliability of a higher standard modern vehicle and we expect to be able to reduce our workshop staff by at least two full time mechanics.

Improved fleet image, safety and branding will project a professional waste business, maintaining a modern fit for purpose fleet for residents and future commercial customers within the city.

### **3.1 The proposal**

Bristol Waste Company are looking to initially purchase 45 Multi Compartmental Recycling Vehicles (MCRV's) to replace its existing fleet which have come to the end of their useful life. The current vehicles are all fully depreciated and are all over eight years old. The increasing failure and unreliability of the current fleet is affecting the service provided by BWC due to continuous breakdowns and excessive time in our repair workshops.

The second tranche of replacement include refuse collection and street cleaning vehicles. We will follow on with the purchase of the remainder of the fleet under a separate business case update during 2019/2020.

### **3.2 The case for change**

The current cost profile for each vehicle for fleet maintenance (above our regulated inspections and calibrations) is £5000 per annum for each vehicle. Additional maintenance is required due to the age-related problems of our current fleet. Typical faults include rodents eating through internal wiring, ageing operational systems or the distortion of the body structure resulting in lift and chain failures.

We estimate revenue savings in the first 3 years for the MCRV's would be in the region of £220,000 per year due to higher reliability, which will lead to fewer breakdowns and vehicle replacement hire charges. The following 4 years we still estimate savings compared to the current fleet (50%/£110,000 per year) as the vehicles will have less faults and issues due to the higher build quality of the proposed new vehicles.

There are also additional non-tangible costs to consider in the reduction of overtime due to a higher rate of rounds being completed during normal hours. Every additional hour to complete rounds on overtime costs on average £55 / hr based on current crew rates.

Also, during peak times when we do not have enough MCRV's available we have to use refuse trucks to clear the rounds. This means we must mix the recyclates leading to a loss of revenue, reduced recycling targets and bad publicity as residents see us mixing up the recyclates after we have been campaigning hard to encourage them to sort before collection.

Efficiency savings also include reduced fuel cost due to better mpg, and the installation of storage fuel tanks to enable us to bulk buy fuel at a reduced rate with managed usage. We will also negotiate reduced insurance premiums as the vehicles will incorporate tracking systems and live/recording cameras which will support traffic incident insurance claims by providing evidence against a BWC liability.

### **3.3 Fit with national policy regarding sustainability**

Alternative fuels are being examined as at this stage electric vehicles are not currently at the level needed to fully support the contract. BWC cannot afford to wait until technology has caught up as our ageing fleet is deteriorating to the point of putting our service at risk due to too many breakdowns and repairs

Bristol Waste Company require vehicles of a specific design to collect recyclates, utilising the methodology agreed with the Bristol City Council, which separates recycling materials at the kerb side.

This ensures BWC can process the highest quality recyclates in support of national recycling targets and to secure the maximum income from disposal.

The configuration of the multi compartmental vehicles requires maximum space availability which reduces the opportunities to purchase vehicles using alternative power supplies such as Electric (EV) or compressed natural gas (CNG). This is due to both EV and CNG utilising rigid containers to hold battery cells or pressurised fuel vessels.

For this current recycling fleet replacement, the alternatives would need to be liquid based which allows chassis manufactures to move containers for the fuel into appropriate points away from the loading areas.

In a detailed, 143 - page industrial dossier, the government pledged to introduce a new “voluntary, industry-supported commitment” to reduce HGV greenhouse gas emissions by 15% against 2015 levels by 2025.

Bristol Waste has instigated this commitment through joining the University of Oxford and have signed up to Tantalum’s trial with Imperial College London to road test its Air. Car Technology. Our current fleet is being monitored for NOx and CO2 impact.

Both DAF and MAN vehicle manufacturers can provide vehicles which operate on Bio-fuels. However, DAF will not warranty Bio- Fuel – FAME (Fatty Acid Methyl Esters) if based on 2<sup>nd</sup> hand oils / fats. MAN will warranty FAME but only as a percentage blend with Diesel. This is due to impurities and waxing when cold. Both DAF and MAN will warranty vehicles using Gas to Liquid (GTL) or Hydrated Vegetable Oils (HVO).

Pinning down the cost of any biofuel is difficult because prices vary with type of feedstock, production volume, production process, government incentives, food prices, and more. Prices also vary from country to country, just as they do with petroleum. Nevertheless, a general idea of how biofuels compare to petroleum in terms of cost can be evaluated.

GTL and HVO are both more expensive than Diesel by approximately 5% but this difference is very likely to be reduced over time as diesel prices rise.

Supply of fuels is limited to bulk deliveries as these fuels are not readily available at the pump. To order a minimum of 36,000 litres BWC intend to procure a 40,000L dispensing tank which would be used to fill vehicles under a managed and controlled system.

We have reached out to Shell about Gas to liquid (GTL) as a viable alternative to diesel. We also have been visited by the UK distributor.

The presentation helped us to understand the potential with main bullet points being,

- GTL (Gas to liquid) is a fossil fuel and is collected in a similar method to extracting oil for diesel or petrol. (Please note not fracking).
- There are large supplies worldwide although currently collected and refined in Qatar.
- Distribution is from Rotterdam through Tilbury on the Thames or Ellesmere port North Wales. Due to transport logistics 36,000 litres is the minimum order which equates to our monthly consumption.

- Currently GTL is taxed as a road fuel @ 47% however lobbying is in place to reduce this and encourage more use.
- Current and future diesel-powered vehicles need no modifications.
- Running on GTL reduces the consumption of add blue from 6% of total diesel fuel use to 2% of total GTL use and reduces the need to regenerate the DPF (diesel particulate filter) which saves 45mins of high engine speed stationary running.
- In the unlikely event of GTL not being available the fleet could revert to diesel until supplies were restocked.
- Shell would work with BWC on a carbon neutral campaign.

### 3.4 Fit with local policy

As well as complimenting and progressing the objectives set out in national policy, the procurement and purchase of this new vehicle fleet helps to achieve some of Bristol City Council’s strategic and policy aims and objectives with particular regard to ‘healthy, safe and sustainable communities and places’ as detailed within the Health and Wellbeing Strategy. Included in the strategy are the low-carbon objectives of the Global City Strategy, the sustainable improvements in the management of wastes set out in the Waste and Resource Management Strategy and the key commitments detailed with the Environmental Policy.

- Continually improving our performance, meeting our compliance obligations, preventing pollution and protecting the environment.
- Managing risks and reducing our direct environmental impacts in energy, travel, waste, water, food, biodiversity and land use.
- Using our resources efficiently and working with our suppliers to reduce the impact of the goods and services we buy.

### 3.4 Potential scope for further development/scalability

Once we have successfully incorporated the MCRV fleet into operation we will focus on the remainder of the fleet having learned from this procurement exercise working closely with BCC and our procurement team.

The estimated time lines are

Tranche	Vehicle type	Quantity	Estimated delivery
1	MCRV (Recycling)	45	January to July 2019
2	RCV (Refuse)	20	July to October 2019
3	Street Cleansing and vans	90	October 2019 to December 2019
	Totals	155	

The fleet is being tendered in three lots with delivery scheduled to suit our requirements. This ensures best value as bulk buying per tranche is more cost effective than buying smaller lots over a six-month period. The tranches are divided into three categories with delivery spread over 12 months which can be extended slightly for refuse or streets if necessary. We have spread the delivery over 6 months to reduce the risk of having all our vehicles delivered in one lot without ensuring they are fit for purpose and do not contain any inherent factory faults. We can also ensure that crew training of the new fleet is broken down into manageable amounts.

The MCRV fleet is the first tranche as they are in a poor and unreliable condition and are the biggest risk to service and cost. The RCV fleet is tranche two as these are also specialist vehicles with a long lead time but are in better condition with less problems than the MCRV's. The third tranche are street cleansing and vans as these are mainly an off the shelf purchase and if required, short term hire vehicles are all readily available. We are also looking to replace all the smaller vans with electric equivalents and within 12 – 18 months these will be more readily available with improved reliability and hopefully a reduction in price.

### 3.5 Safety Benefits

Health & Safety benefits will be significant;

#### 360-degree cameras.

- Cameras will improve the monitoring and training of drivers and loaders through CCTV capture of working around the vehicles.
- Through LED warning lights, signage, advertising and enforcement, the cameras will reduce the risk to our operators or members of the public from vehicles mounting the pavements and driving past the vehicles where our operators are working.
- The camera systems will also detect pedestrians and cyclists who can often be out of the line of sight of the drivers further enhancing the safety of the public as well as providing vital evidence to the authorities in the event of an incident.
- Captured data will be shared with other parts of BCC including highways for pot holes and road maintenance and enforcement and emergency services for up to date information and recorded incidents.

#### Improvements in the build and design

- The improved design reduces the current risk from head injuries caused by hinged doors, eye injuries from glass fragments and wrist injuries from the current loading method.
- Low entry access into the cabs to make it easier and safer for our operatives to continually enter and exit the vehicles. This leads to fewer trips slips and falls and fatigue from clambering in and out of a high entry/exit cab.
- Although we currently operate on Euro 5 diesel the significant improvements provided by the Euro 6b diesel will ensure we reduce our impact on the environment to reduce harm to our staff and citizens of Bristol. It should be noted that Bristol has an obligation to provide a clear air zone by March 2020 and that Euro 6 would be the minimum standard across the city.

### 3.5 Risks and mitigation

The biggest risk to the business is not replacing the fleet as soon as possible as the effect on the business in terms of service and cost deteriorates daily.

- To reduce the risk of unavailability of vehicles routine servicing is completed between 14:30 – 22:00 which increases the up-time and provides robustness to the fleet.
- A new fleet will be supported with warranties on both chassis and body. Additionally, the procurement process will ensure that the evaluation considers satisfactory resilience through service back-up and loan vehicles if required.

- We will also improve the effectiveness and ease of the maintenance regime by hot water pressure washing vehicles weekly this will also enhance the overall appearance of the fleet.
- A fleet maintenance monitoring and service IT system will be established.
- To further add to our resilience, we intend to refurbish 4 of the best vehicles we currently run and use them as back up and rotation for any periods of excessive down time on the new fleet. This will be at a very minor cost as we will cannibalise the best parts from the existing fleet before disposal. This may also add a source of income if other local authorities want to loan/hire the spare vehicles if we do not need them over short periods.

## **4. Commercial Case**

### **3.6 Procurement strategy**

The purchase of the MCRV's will follow the procedures set out in Bristol Waste Companies Procurement Policy. The purchase will be tendered via the Councils procurement portal and will comply with EU procurement regulations. The procurement strategy identified the need for early marketplace engagement with potential bidders to help understand the marketplace and risks around lead times, build process, etc. The risk around build times and scheduling of builds was identified as a significant risk and extensive communication has been conducted to keep bidders informed of our progress and plans to ensure that any risks are mitigated. The strategy also identified that an open tender process was best suited for this procurement to enable shorter procurement process in what is a limited marketplace.

### **4.2 Contractual arrangements**

Once awarded contracts will be signed and sealed in accordance with Bristol Waste Company Procurement Policy guidelines. The contract will be managed by BWC's Operations Director and Fleet Manager to ensure that contract KPI's are met and achieved. Regular client meetings will be held throughout the contract term to monitor progress and to ensure a healthy and productive relationship is formed and maintained between Client and Contractor. Martyn Wordsworth will be the BCC procurement representative included in the combined procurement team.

### **4.3 Charging mechanism**

The preferred option proposes funding to be sought from BCC for the purchase, this will be managed by BWC during the contract term.

The preferred option is to fund the purchase via loan from BCC which will be part matched with reserves from Bristol Waste Company. The exact amount of the loan will be calculated after the proceeds from the disposal of the existing vehicles

The assets will be owned by BWC and the repayment of the loan will be on monthly or quarterly basis to BCC at an interest rate of 3.5% (illustrative, will be recalculated at the point of loan agreement) over 10 years commencing (latest) April 2019, following the annuity payment method.

## **5. Financial Case**

This section of the document details the financial aspect of the Business Case for the acquisition of approximately 45 new recycling vehicles, while ensuring that the funding choice enables Bristol Waste

Company to continue to provide value-for-money to shareholders. The second phase of vehicles replacement quotations have not yet been formally obtained.

**NOTE:** At the time of writing, (Oct-18) the details are estimates until final specification and pricing is confirmed, expected late November 2018.

There are several financial options to be considered: -

1. Capital purchase with BWC/BCC funds, including loan from BCC.
2. Capital purchase using 3<sup>rd</sup> party loan funds
3. Lease through a 3<sup>rd</sup> party provider

The table below sets out the arguments for and against each option

Option number	Funding option	For	Against
1.	Purchase BWC/BCC funds 10-year cost (including interest) £14.4M	<ol style="list-style-type: none"> <li>1. Good use of funds and return on investment.</li> <li>2. Avoids paying interest to 3<sup>rd</sup> party.</li> <li>3. Flexibility on drawdown.</li> <li>4. Control and speed.</li> <li>5. If BWC owned, take advantages of HMRC capital allowances.</li> </ol>	<ol style="list-style-type: none"> <li>1. Competitive rate risk</li> </ol>
2	Purchase with 3 <sup>rd</sup> party loan 8-year cost (including interest) £13.3M	<ol style="list-style-type: none"> <li>1. Market rates</li> </ol>	<ol style="list-style-type: none"> <li>1. Slow process.</li> <li>2. Inflexible drawdown.</li> <li>3. Lack flexibility.</li> <li>4. 10-year purchase option not available</li> </ol>
3	Operating lease 3 <sup>rd</sup> party 10-year cost (including interest) £18.3M	<ol style="list-style-type: none"> <li>1. Potential for maintenance provision.</li> <li>2. Avoid ownership risk.</li> <li>3. Avoid residual value risk</li> </ol>	<ol style="list-style-type: none"> <li>1. Vehicles not owned</li> <li>2. Residual value risk</li> <li>3. End of life damage cost</li> </ol>

### 5.1 Capital requirements

Description	Quantity	Total Value	Start date	End date
Recycling vehicles	45	£12.05M	Nov 2018	Jul 2019
Refuse vehicles	20		Jul 2019	Oct 2019
Street Cleansing and vans	90		Oct 2019	Dec 2019

## 5.2 Impact on revenue

**Option 1:(Preferred option)** This acquisition will increase depreciation to the accounts of Bristol Waste Company, however, it is our view that this investment remains critical to the successful operation by ensuring that as a company we can professionally function and are fit-for-purpose.

The total savings will be greatest in the first 3 years due new vehicles and warranty, the maintenance costs will increase from year 3.

For phase 1 recycling vehicles It is estimated that the maintenance costs of the recycling fleet would reduce by £220k per annum for the first three years of operation due to the vehicles being of better design and requiring less maintenance.

Other operating efficiencies which are difficult to quantify include reduction in landfill, increase in recycling and more efficient use of labour on the collection rounds. This will also include capital savings due to more efficient vehicles reducing the need for spares.

Latest calculations show that a loan of £12m from BCC would attract interest over the period (10 years) of £2.4M resulting in a total cost of £14.4M based on illustrative interest rate at 3.5% p.a. Annual repayments of this amount would be approximately £1.44M (£120.2k per month). The interest cost would be tax deductible and the capital purchase would result in capital allowances for corporation tax purposes from BWC's perspective.

**In comparison with Options 2 & 3:** Indicative rates from Lombard Assets Finance for the lease purchase are £13.3M over 8 years (10-year option not available currently) and operating lease £18.3M over 10 years. The operating lease quotes was provided based on several assumptions, for the quote to be binding these assumptions would need to be validated.

## 5.3 Financial sensitivity

The interest rate is yet to be finalised, however, for information purposes for every **0.1%** change in rate equates to **£73k** change over the 10-year period.

The final costs are yet to be agreed, however, for each **£100k** change in cost equates to **£19k** change in interest costs over the 10 years.

## 6. Programme

### INDICATIVE TIMETABLE

Actions		Dates
1.	Date specification made available	28/09/2018
2.	Closing date for requests of points of clarification	05/10/2018
3.	Date for receipt of Tender Submission	15/10/2018
4.	Evaluation Period	16/10/2018 to 19/10/2018
5.	Date of possible presentation & clarification meeting with selected providers (if required by the Company)	22/10/2018
6.	Notification to unsuccessful tenderers	<b>After BCC Approval</b>

7.	Letter to Preferred tenderer of Intent to award contract	
8.	De-briefing of unsuccessful bidders and standstill of process	
9.	Contract Award	
10.	Mobilisation period with successful provider	
11.	Vehicle Delivery Commencement Date	TBC with successful bidders

## 7. Conclusion

The above case lays out the requirement and, at this stage in the interests of informing BCC of the estimated investment required, outlines the funding necessary to purchase a suitable fleet of vehicles. The vehicles will be equipped with an array of safety features and will conform to the latest energy and CO2 requisites. Alternative fuels are being examined as at this stage electric vehicles are not currently at the level needed to fully support the contract. BWC cannot afford to wait until technology has caught up as our ageing fleet is deteriorating to the point of putting our service at risk due to too many breakdowns and repairs.

BWC request that this business case is given full consideration which will allow changes to our existing fleet to commence as soon as December/January and support and enhance the current kerbside recycling service.

### Frequently Asked Questions (FAQ's)

**“Why don't you go all electric?”**- Electric MCRV's and Refuse Vehicles are so far unproven in terms of reliability and availability, and cost is also a major factor. We will be looking at more electric vehicles for the smaller fleet and have already started to install additional charging stations on site in preparation.

**“Why are you not using Biofuel?” - Gelling** - Biodiesel can gel in colder weather and can prevent the vehicles from starting on cold mornings. **Breakdowns** - Biodiesel can clog filters due to the release of deposits that attached to tank and pipe and can degrade gaskets and seals over time. **Reduced Fuel Efficiency** - Biofuel can reduce fuel efficiency by 1 to 2% (on a spend per annum of £1M this equates to £10k - £20k)

**“What is Gas to liquids (GTL) technology?”** - GTL converts natural gas (the cleanest-burning fossil fuel) into high-quality liquid products that would otherwise be made from crude oil. GTL which will significantly reduce diesel emissions on vehicles, in addition to lowering noise levels, reducing servicing and maintenance cost and increasing engine life expectancy. Clean Air GTL is non-toxic and less harmful than diesel to the environment. Although not as readily available as diesel, fuel storage tanks will store enough for fleet use and diesel can be substituted if necessary, without any changes to the vehicle system.