

To: **EXECUTIVE**
18 JUNE 2024

HYDROTREATED VEGETABLE OIL TRIAL
Executive Director: Communities

1 Purpose of Report

- 1.1 The twelfth 26 tonne waste collection vehicle approved at the November 2023 Executive is now in use. A commitment to investigate trialling Hydrotreated Vegetable Oil (HVO) as an alternative fuel to reduce emissions from waste collection vehicles was made at that meeting.

2 Recommendations

That the Executive:

- 2.1 Endorse a trial of HVO in one waste collection vehicle for a minimum period of 12 months from September 2024.**
- 2.2 Note the purchase of a 5,000 litre fuel tank for the HVO to be stored and dispensed from the Commercial Centre from an existing capital waste collection budget.**

3 Reasons for Recommendations

- 3.1 HVO is a 'drop in' fuel so there are no changes required to the vehicle it is to be trialled in, the trial will allow a comparison to be made against the other vehicles on how HVO impacts on costs and emissions when compared to diesel.

4 Alternative Options Considered

- 4.1 Continuing to run all the vehicles on diesel.

5 Supporting Information

- 5.1 The existing waste fleet is all diesel powered. HVO is a 'drop in' fuel, which means it can simply be used in a diesel vehicle with no alterations required, and then also switched back to using diesel should the need arise.
- 5.2 HVO delivers a 90% reduction in carbon dioxide equivalent emissions when compared to diesel. HVO can be added as a straight replacement for diesel or as a blend. Compared to diesel HVO has a lower calorific value so it is expected that there will be a circa 10% drop in fuel efficiency.
- 5.3 The main risks to HVO are around security of supply due to demand and making sure the source of the fuel is known. The oils used can either be from grown energy crops (palm oil) or from used cooking oils. If the oil is not sourced from sustainable sources, such as used cooking oils, it can cause other environmental issues such as deforestation. The demand for HVO is increasing, which will only increase pressure on the supply chain but should ultimately improve availability.
- 5.4 The supply risk can be mitigated by the ability to switch back to diesel should the need arise.

- 5.5 A new fuel tank for the HVO to be stored in would be required at the Commercial Centre, the chart below outlines costs for both purchase and/or hire of a tank which will be purchased from existing budgets. The hire cost shown is based on hiring the tank for a year. It is more cost effective to purchase a 5,000 litre polyethylene fuel tank. For both options connection to the monitoring and ordering system would be required. This is essential as it records the fuel used against the vehicle and assists with measuring efficiencies and emissions, it also makes sure fuel deliveries are arranged when supplies are low.

	Purchase	Hire
Tank cost £	6,458	
Delivery and set up	Incl. in cost	1,050
Hire cost - £ for 12 months		8,268
Link to monitoring system	5,285.50	5,285.50
removal at end of hire		1,050*
Total	11,744	15,654

**gas free certificate also required at further cost before removal*

- 5.6 Estimated costs of HVO compared to diesel are outlined in the chart below, mileage and litres of fuel required are estimates based on April 2024 mileage and costs for one 26 tonne collection vehicle:

	Diesel	HVO
Cost per litre £ (April 2024 price)	1.17	1.47
Miles per litre	0.6	0.5
Average litres of fuel per month	933	1,120
Estimated cost per month £	1,089	1,646
Estimated Annual cost £ (April 2024 price)	13,063	19,757

This increase in cost can be accommodated within the existing waste collection budget by other operational savings identified.

- 5.7 Estimated reduction in CO₂e from HVO compared to diesel are outlined in the chart below:

	Diesel	HVO
Kg CO ₂ e per litre	3.17	0.26
Average litres of fuel per month	933	1,120
Estimated CO ₂ e emissions	2,958	291
Estimated Annual CO₂e	35,491	3,494

6 Consultation and Other Considerations

Legal Advice

- 6.1 There are no specific legal implications arising from the recommendations in this report.

Financial Advice

- 6.2 The financial implications are contained within the report. The additional revenue and capital costs associated with this report will be contained within existing budgets.

Other Consultation Responses

- 6.3 NA

Equalities Impact Assessment

- 6.4 NA

Strategic Risk Management Issues

- 6.5 There is a risk that HVO may be difficult to source as demand for this alternative fuel is increasing. Suppliers of the fuel in the UK need to comply with International Sustainability and Carbon Certification, which means that the fuel feedstocks must be verified as waste or residues. This is positive as it means the HVO sourced will be from the correct source, however it does mean that supply can be affected if there is not enough of the right waste oils.

Climate Change Implications

- 6.6 Alternative fuelled vehicles with lower emissions than the current diesel powered vehicles would have a positive impact on climate change as shown in 5.6.

Health & Wellbeing Considerations

- 6.7 A move towards an alternative fuel would lower harmful emissions so help towards improving air quality in Bracknell Forest.

Background Papers

Not applicable

Contacts for further information

Damian James
Assistant Director: Contract Services
01344 351325
Damian.james@bracknell-forest.gov.uk

Claire Pike
Head of Environmental Services
01344 352520
Claire.pike@bracknell-forest.gov.uk