

Rother District Council

Report to: Cabinet

Date: 27 February 2023

Title: Waste and Recycling Vehicles - Use of Hydrotreated Vegetable Oil instead of diesel

Report of: Deborah Kenneally, Head of Neighbourhood Services

Cabinet Member: Councillor Prochak

Ward(s): All

Purpose of Report: This report sets out the benefits and estimated costs for the use of Hydrotreated Vegetable Oil (HVO) as a direct diesel replacement to reduce carbon emissions from the waste collection and street cleansing vehicle fleet by up to 90% in support of the Council's commitment to achieve carbon neutrality by 2030.

Decision Type: Key

Officer

Recommendation(s): It be **RESOLVED**: That:

- 1) due to the significant carbon emissions reductions of up to 90% the introduction of Hydrotreated Vegetable Oil as a direct replacement for diesel in delivering waste and street cleansing services through the Joint Waste and Recycling Contract be approved in principle;
- 2) the current cost predictions are unaffordable for the 2023/24 financial year;
- 3) the Director – Place and Climate Change be authorised to identify possible service-related savings that can partially or fully offset the cost increase related to the introduction of Hydrotreated Vegetable Oil for 2024/2025; and
- 4) a paper be brought forward to a future meeting of Cabinet to outline and approve those service-related savings.

Reasons for

Recommendations: In switching to the use of HVO to fuel vehicles, it is estimated that carbon emissions will reduce by up to 90%, thus supporting the Councils Climate Emergency Plan to achieve carbon neutrality by 2030.

Introduction

Hydro-treated Vegetable Oil (HVO) Waste collection fuel trial

1. In 2019, Rother District Council (RDC) declared a climate emergency and pledged to achieve carbon neutrality by 2030.

2. Hydro-treated Vegetable Oil (HVO), often referred to as renewable diesel, is a fossil-free alternative to mineral diesel. It is a paraffinic bio-based liquid fuel originating from many kinds of vegetable oils, as well as animal fats.
3. HVO offers an immediate opportunity to realise significant carbon emission reductions across the waste and street cleansing fleet as a 'drop in' fuel to replace white diesel. The vehicles require no adjustments and warranties remain unaffected. The switch to HVO is quick, straight forward and relatively modest in cost when compared to other carbon reducing technologies.
4. Changing the fuel used by the vehicles from diesel to HVO offers an immediate reduction in the carbon being generated by as much as 90%, and the Joint Waste and Recycling Committee (JWRC) has recommended that each partner council consider the implications of funding HVO in 2023/24 and onwards. (Minute JWRC 462022 (b) refers). Members may note that the Joint Waste Partnership (in liaison with officers holding Climate Change responsibilities at each partner council) has elected to use the UK government Business, Energy and Industrial Strategy (BEIS) department conversion factors to determine the carbon baseline and potential savings.
5. The use of HVO can act as an interim measure whilst zero emission technology for large goods vehicles (LGVs) in the form of electric battery and hydrogen fuel cell powered vehicles further develop to where they become affordable and suited to the workload in terms of performance, including range of operation and, for hydrogen, a sufficient and sustainable source of fuel.
6. This recommendation follows a lengthy period of work by the Joint Waste Climate Change Working Group to consider short and longer-term options to minimise carbon emissions, and a successful trial using HVO for waste and street cleansing vehicles in Wealden. The principles for an agreement aligned with the Joint Waste Contract to enable use of HVO have been agreed with Biffa and the councils are liable to fund the cost differential between diesel and HVO fuel. While the cost per litre of both fuels changes regularly in response to external economic and market forces, fuel consumption can be more directly linked to distance travelled and it is estimated that circa 1million litres of fuel per annum are required across the whole partnership.
7. The final terms of the intended Agreement remain subject to pricing and HVO supply assurances regarding negative environmental impacts (i.e. the HVO is supplied from certified sustainable sources). Members of the JWRC have confirmed each council's commitment to reducing carbon as soon as possible and determined that budget approvals would be sought in advance of the final cost basis being determined.

Analysis / Details of the proposals

8. In the Rother District area, circa 336,000 litres of fuel is required per annum to operate the existing fleet and allowing, for example, a 64.8 (as at December 2022) pence per litre differential between HVO and diesel concludes that an estimated additional annual budget of £218,000 per annum may enable use of HVO and secure an immediate reduction in carbon emission of up to 90%.
9. 1,000 litres of regular diesel produce c3.6 tonnes of net CO₂ compared with c0.195 tonnes for HVO. This includes whole life emissions from oil extraction, transportation, refining and combustion. Using c336,000 litres of diesel results

in c1,207 tonnes of CO₂ emissions per year compared with c65.52 tonnes using HVO - a reduction of c1,141.8 tonnes at a cost of £191 per tonne of CO₂ based on the example costs in paragraph 8 above.

10. It is important to be aware that a single fuel tank, located at the St Leonards depot, supplies the vehicles used to operate in both the Hastings and Rother areas. To enable the change to HVO will therefore require both Hastings Borough Council (HBC) and RDC to accept the terms of the agreement in due course.
11. As a cleaner fuel, HVO also reduces NO_x and particulate emission, being sources of air pollution and contributing to respiratory diseases.
12. Final terms of an Agreement to secure use of HVO fuel as the alternative to diesel will need to be approved by the JWRC followed by legal drafting and execution of the Agreement and operational implementation through to 2026. The current waste contract ends in 2026 and it is intended the use of HVO and associated costs will be included as part of the specification for any contract extension or re-procurement process.
13. The price of both white diesel and HVO is highly volatile, the price differential between the two will change until the cost can be fixed at the point of purchase of the fuel. This may mean the cost differential could increase to perhaps £300K + per annum at the point of purchase Members are asked to note that fuel pricing (diesel and HVO) is affected by several factors including customer demand (and high numbers of UK local authorities have expressed interest in HVO over the past year), oil price (which is subject to international influences – OPEC and similar), fuel grade (the feedstock sources and sustainability certification) and distance to supply (additional cost to transport fuel into the local depot).
14. At the current time the increase in cost to the Councils 2023/2024 revenue budget of between £218K and £300K is felt to be unaffordable and it is proposed that the waste, recycling and street cleansing vehicles continue to operate on diesel for the forthcoming financial year. In the meantime, negotiations will take place between RDC and Biffa to identify potential service savings that could offset the increase in HVO cost either partially or in full for future financial years.

Conclusion

15. The use of HVO as a replacement fuel for white diesel could provide immediate and significant reduction in carbon emissions of up to 90% with minimal impact on the delivery of the waste and street cleansing service. However, the potential cost to the Council's revenue budget in 2023/2024 is felt to be unaffordable and officers will work with the waste, recycling and street cleansing contractor Biffa to seek service savings in order to implement the change to HVO in the financial year 2024/2025.

Financial Implications

16. The financial implications are c£218,000 to £300k per annum based on recent estimates.

17. It is acknowledged that savings are required as part of the Council's general budget. While a relatively modest amount of money against the total waste budget, this additional expenditure will need to be considered as part of the wider budget discussions to establish if the benefits outweigh the cost, particularly as expense in this area means that another service may have to cease or be curtailed to fund the change.
18. It is also important to note that the cost of HVO and diesel, fluctuates on a monthly basis. In May 2022, the cost difference per year was c£98k but by In December 2022 the cost difference was c.£218,000. This could change considerably, either for the better, or worse. As this is a direct swap and the vehicles do not require modification, there is the possibility of ceasing the use of HVO and switching back to diesel in future years if HVO becomes financially unsustainable and with agreement from HBC.

Legal Implications

19. The impact on the waste and street cleansing contract will need to be considered and progressed by the Joint Waste Partnership office.

Environmental

20. A 90% reduction in whole life and vehicle fleet CO₂ emissions could be realised by switching to HVO, amounting to c1,207 tonnes per year.
21. As a cleaner fuel, HVO also reduces NO_x and particulate emissions, being sources of air pollution and contributing to respiratory diseases.

Risk Management

22. There is a risk that HVO will increase rapidly in cost due to demand exceeding supply. This risk can be mitigated by purchasing in advance at a fixed market price but does not allow for cost of diesel per litre to reduce, thereby increasing the differential between the two.

Other Implications	Applies?	Other Implications	Applies?
Human Rights	No	Equalities and Diversity	No
Crime and Disorder	No	External Consultation	No
Environmental	Yes	Access to Information	No
Risk Management	Yes	Exempt from publication	No

Chief Executive:	Malcolm Johnston
Report Contact Officer:	Deborah Kenneally
e-mail address:	Deborah.kenneally@rother.gov.uk
Appendices:	None
Relevant Previous Minutes:	JWRC 462022 (b)
Background Papers:	None
Reference Documents:	None