Report of the Portfolio Holder for Environment and Climate Change

DECARBONISATION OF THE FLEET (TRANSITION TO BIOFUEL)

1. Purpose of Report

To seek approval for the transition to biofuel given the additional spend required to facilitate implementation.

2. Recommendation

Cabinet is asked to RESOLVE that the transition of the fleet to HVO biofuel be approved with the estimated additional costs being contained within existing budgets in 2023/24.

3. Detail

The Council has set an ambitious target of being carbon neutral by the end of 2027. In May 2022, Members approved an additional £42k budget to transition to Hydrotreated Vegetable Oil (HVO) in support of decarbonising the fleet and reducing the Council's carbon footprint. Following the approval of these funds, the price of both Diesel and HVO increased significantly. The result of the price escalating was that the funds approved would not cover the transition to HVO. Consequently, the project was put on hold to allow the price to stabilise.

Whilst the price is still significantly higher than in 2022, the market has now stabilised. It has therefore been possible to predict the potential additional annual spend needed to transition to HVO.

The carbon emissions from the Council's own fleet account for 26% (818 tCO_2e based on provisional 2022/23 carbon reporting figures) of the Council's total emissions.

HVO is compatible with all diesel vehicles from 2019 onwards and all refuse collection vehicles, irrespective of the year of manufacture. 46% of the fleet is HVO compatible. Based on fuel usage for 2022/23, the total tCO_2e savings each year would be in the region of 629 tCO_2e. This represents a 77% reduction in transport carbon emissions and an overall reduction of 26% in the Council's total carbon emissions.

HVO typically is around £0.47 per litre more expensive to purchase than diesel. Based on fuel usage figures for 2022/23, the additional cost of using HVO would be in the region of £116,500 per annum and in order to maintain 10-days' worth of contingency supply, in line with the Civil Contingency Act, the additional cost rises to £126,000. It should also be noted that the additional cost will increase as older vehicles are replaced with newer ones compatible with HVO. In line with this, the Council's carbon emissions from the newer fleet will continue to reduce.

Whilst transition to HVO will require an increase in the budget in the longer term, the relative investment to pay back in terms CO_2 emission reduction means that the additional expense represents an environmentally sound investment and demonstrates that the Council is committed to achieving carbon neutrality by 31 December 2027.

Further information regarding the pricing and subsequent carbon savings from a transition to HVO is shown in the appendix.

4. Financial Implications

The comments of the Head of Finance Services are as follows:

The overall fuel budget for the vehicle fleet is considered as part of the annual budget setting process. The budget for 2023/24 at £574,950 was prudently set to reflect usage at the heightened fuel prices seen in autumn 2022. This also includes an additional £42,000 built into the base budget for the transition to HVO that was previously approved by Cabinet in May 2022.

The additional cost of facilitating the transition to HVO (due to higher prices relative to DERV) and the fulfilment of the 10-day contingency for fuel is now estimated at £126,000 per annum.

Whilst this additional cost could be contained within existing budgets, there is clearly a financial risk to the Council should fuel prices increase to and above the levels seen in 2022. This risk has to be carefully balanced against the desire to achieve the environmental benefits outlined in this report.

5. Legal Implications

The comments of the Head of Legal Services are as follows:

Whilst there are no direct implication arising from this report, the Climate Change Act 2008 imposes a target on Central Government to be carbon neutral by 2050. The Council has, set an earlier target of 2027. This transition must also comply Part 3 of the Environment Act 2021.

6. Human Resources Implications

No comments.

7. Union Comments

No comments.

8. Data Protection Compliance Implications

No comments.

9. Climate Change Implications

Climate change implications are considered within the report.

10. Equality Impact Assessment

As this change only relates to a change in fuel type rather than a policy change an Equality Impact Assessment is not required.

11. Background Papers

Nil

APPENDIX

The Council's vehicle fleet is a major contributor to the Council's own operation greenhouse gas emissions. Decarbonising the fleet, using methods such as electrification or alternative low emission fuels, is a priority for the Council, however, a transition to electrification across the fleet is currently cost prohibitive.

In recent years, there has been a growth in the number of vehicles transitioning from diesel fuel to more sustainable alternatives, such as biofuel HVO (Hydrotreated Vegetable Oil). Whilst HVO is more expensive than traditional diesel fuel, it offers significant carbon savings, making it an attractive option as a way for the Council to reduce its current Carbon emissions.

HVO Compatible Fleet

There is currently 44 out of the total fleet of 95 vehicles that are compatible with HVO, equating to 46% of the fleet. At present, nine of the fleet are electric. HVO can be used in existing diesel engines without any modifications, making it a relatively straightforward transition. However, it is important to note that some of the older fleet vehicles are not compatible with HVO. This will change over time, as the older fleet is replaced with newer HVO compatible models.

Table 1 provides a breakdown of fleet vehicles and machinery, fuel types and usage.

Vehicle Type	Fuel	22/23 Litres
Refuse trucks or road sweepers (rigid size)	Diesel	224,393.71
Diesel van Average (up to 3.5 tonnes)	Diesel	53,664.08
Gardening and Grounds Maintenance - diesel	Diesel	24,072.76
Gardening and Grounds Maintenance - petrol	Petrol	9,244.08
Industrial mobile machinery - gas oil	Diesel	4,744.09
Diesel HGV Rigid (>3.5 - 7.5 tonnes)	Diesel	3,713.04
Total		**319,831.76**

Table 1: Council fleet and fuel types and litreage used for 2202/23

Out of the 44 vehicles HVO compatible vehicles, 18 of those are refuse freighters and these account for 70% of the HVO fuel that would be required.

Financial Implications and Budget Projections

One of the primary challenges in transitioning from diesel fuel to HVO is the cost. HVO is currently more expensive than traditional diesel fuel, however, it is important to consider the long-term cost implications of using HVO. As demand for HVO increases, the cost is expected to decrease, making it more affordable for a wider range of users.

Table 2, details the estimated fuel spend for Diesel (DERV) and unleaded petrol for the Council's Fleet for 2023/24.

Fuel Type	Litres	Indicative price per litre	Total
Diesel	310,587.68	£1.33	£413,082
Petrol	9,244.08	£1.41	£13,034
Total			**£426,116**

Table 2: Indicative fuel prices and usage based on fuel usage for 2022/23

Indicative fuel pricing has been used to estimate the spend per litre for 2023/24. This has been calculated by taking the average price per litre for each of the fuel types from August 2022 through to August 2023.

Table 3, details the estimated fuel spend if the Council were to transition to HVO. Not all the fleet/machinery at this time would be able to transition. As old vehicles are replaced with newer ones that are compatible with HVO, the level of spend on HVO fuel would increase. It is predicted that the transition to HVO will increase fuel spend by an estimated **£116,500** per annum.

Fuel Type	Litres	Indicative price per litre	Total
HVO	247,940.11	£1.80	£446,292
Diesel	62,647.57	£1.33	£83,321
Petrol	9,244.08	£1.41	£13,034
Total			**£542,647**

Table 3: Indicative fuel prices and usage for 2023/24 after a transition to HVO

10-day Contingency for Fuel

The Civil Contingencies Act, also known as the CCA, was introduced in 2004 following a review of emergency planning arrangements, as a result of the fuel crisis and severe flooding in 2000. The Act establishes a framework for civil protection in the UK. It imposes a clear set of roles and responsibilities on those organisations preparing for and responding to emergencies.

Local authorities are a category one responder and as such the Council need to ensure that it has ten days' worth of fuel for its fleet at all times.

Currently, the fuel tank on site at Kimberley depot holds 27,000 litres of DERV. The fleet currently uses 1,000 litres of fuel per day and stock is re-ordered when levels reach 10,000 litres. As fuel can take a couple of days to arrive from ordering, the fuel levels currently do not meet the 10-day contingency requirement.

The frequency of fuel reordering needs to be adjusted to ensure that fuel stock remains above the 10-day threshold. As the number of delivery visits needs to be increased, the price per litre of fuel will also rise, as deliveries need to become more frequent and therefore they become less economical. It is anticipated that there will be an additional £0.03 per litre added to the fuel, if the frequency of ordering is increased (Table 4).

Fuel Type	Litres	Indicative price per litre	Total
Diesel	310,587.68	£1.36	£422,399
Petrol	9,244.08	£1.44	£13,312
Total			**£435,711**

Table 4: Indicative pricing to include 10-day fuel contingency

Based on fuel volumes before any transition to HVO, the additional cost per year is estimated at £9,600.

If the transition to HVO does go ahead, then the indicative cost for fuel for the year incorporating the 10-day contingency is detailed in Table 5.

Fuel Type	Litres	Indicative price per litre	Total
HVO	247,940.11	£1.83	£453,730
Diesel	62,647.57	£1.36	£85,201
Petrol	9244.08	£1.44	£13,311
Total			**£552,242**

Table 5: Indicative pricing to include 10-day fuel contingency and a transition to HVO

The transition cost to HVO including a move to fulfil the 10-day contingency supply requirement, will increase the fuel spend for the fleet by a further £126,000 per annum.

In terms of best value, the installation of an additional fuel tank was also explored. It is anticipated that the cost of the tank, plus all the infrastructure works required will be in the region of £50,000. As such, the increased frequency of deliveries at this stage provides value for money.

For 2023/24, the fuel budget for the fleet has been set at £574,950. The budget was established at this level as a consequence of the heightened fuel prices in 2022 and also includes the £42,000 agreed for HVO conversion in May 2022. Whilst prices are still significantly higher than in 2021/22, the market has now stabilised. If the transition to HVO were to take place in 2023/24 then it is anticipated that the transition could be contained within the current fuel budget. The transition could also be contained within future budgets, as long as fuel prices do not rise to levels experienced in 2022.

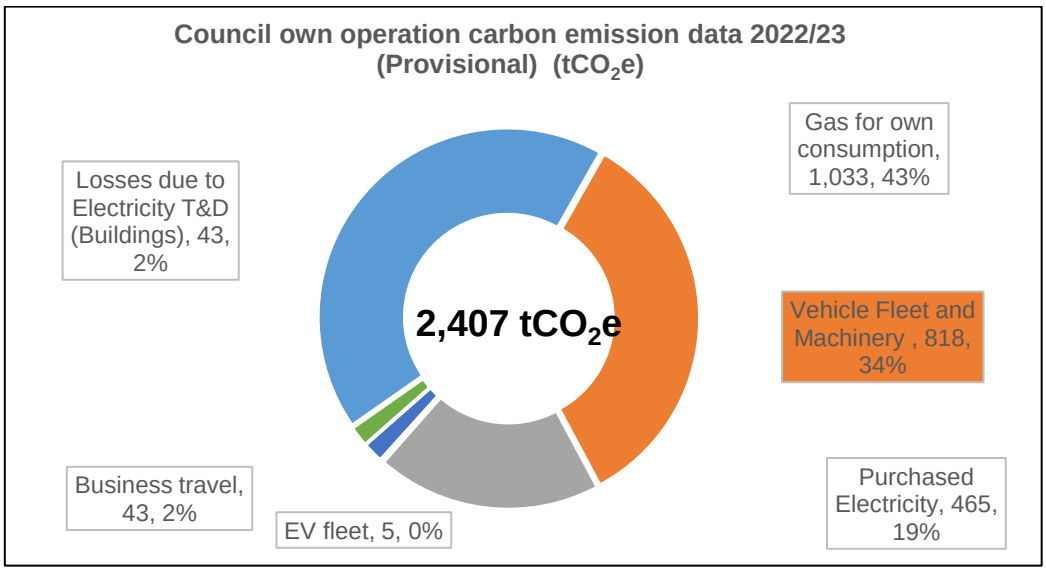
Transition Timeline

The wash bay at Kimberley Depot is scheduled for refurbishment works within the current financial year. As part of these works, the fuel tanks in the depot need to be emptied and cleaned out. This would offer an ideal opportunity to transition to HVO, without incurring additional expense for the fuel change over.

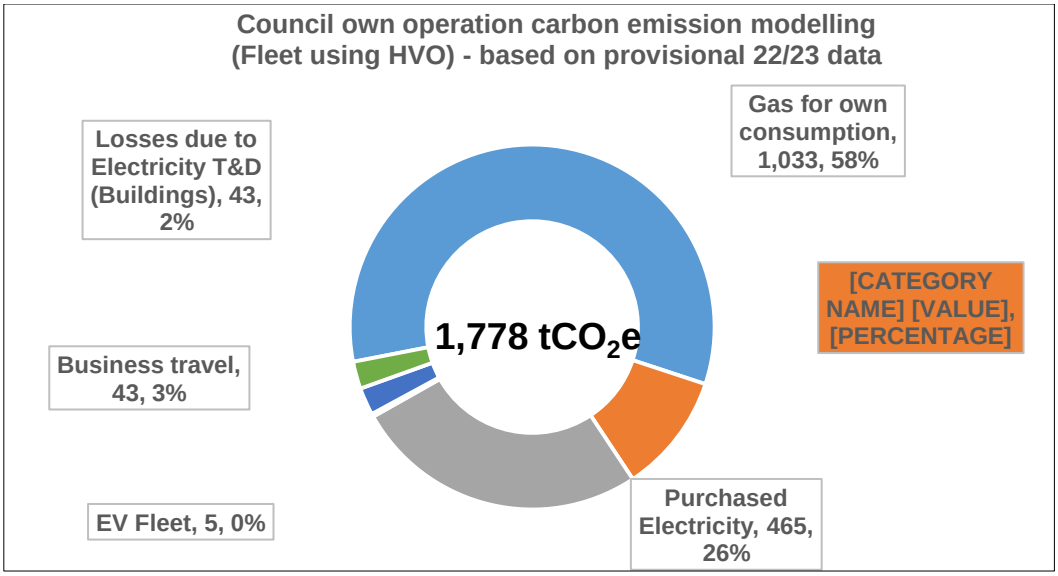
Carbon Savings

The primary benefit of transitioning from DERV to HVO is the significant carbon savings. HVO is a renewable fuel produced from plant-based oils and has a lower carbon footprint compared to traditional diesel fuel. If the Council was to transition to HVO, there would be a carbon saving for the fleet in the region of 77% or 629 tCO_2e (818 tCO_2e – Graph 1, compared to 189 tCO_2e with HVO – Graph 2).

Based on a provisional carbon footprint for the Council for 2022/23, a reduction of that significance would reduce the Council's overall carbon footprint by 26%.



Graph 1: Council Own operation carbon emission data (Provisional) 2022/23



Graph 2: Council Own operation carbon emission data (Provisional) after initial HVO transition 2022/23

Summary

The transition cost to HVO including a move to fulfil the 10-day fuel contingency supply requirement will increase fuel spend by an additional **£126,000** per annum. This additional spend can currently be contained within existing budgets.

The transition to HVO will bring about a carbon saving of **629 tCO_2e**. This will reduce fleet emissions by **77%** and the Council's overall carbon footprint by **26%.**

Conclusion

Whilst a move to fleet electrification is currently cost prohibitive, HVO offers an ideal solution in the short to medium term as a way to achieve significant carbon savings. However, this comes with associated cost implications that are currently contained within budgets because of a stabilisation in fuel prices.

Whilst HVO is currently more expensive than traditional diesel fuel, the long-term environmental benefits make it a positive option for the Council, as it looks for ways to reduce its own operational carbon footprint.