
Decarbonising Refuse Collection Vehicles: HVO Risk Assessment

Carrie Spencer, Climate Change Officer

Serving our
community



Initial Risk Assessment for HVO: Summary

Switching from diesel to HVO introduces **risks and challenging mitigation measures** for:

- **Infrastructure - costs**
 - Cost of a tank of circa £70k potentially manageable relative to overall contract cost
 - Costs of other refuelling infrastructure options are unknown
- **Infrastructure - location and access**
 - Several options could be pursued with various levels of partnership working, but feasibility and pace of delivery unknown.

Electric or hydrogen vehicles have not been considered in this risk assessment due to significantly higher costs, lack of existing infrastructure, supply challenges, and operational risks.

Political and Operational Risks highlight that switching to HVO is very low risk for these considerations

Consideration	Risk	Risk - level	Mitigation	Ease of mitigation (H is 'not easy')
Political	Inaction / low use of HVO seen as lacking ambition and commitment to carbon neutral 2030	H	Clear communications and assessment of benefits of HVO use up to a feasible price cap	L
	Disruption to service is very visible	L	HVO and diesel/HVO blends are very unlikely to disrupt service	L
	TMBC does not want to be the 'first mover' or adopt a technology still in development or unproven	L	Biofuels have been blended into forecourt fuels for over a decade. HVO has been widely adopted by other LAs for at least 5 years for waste services with no reported operational service impacts.	L
	New technologies in development or unproven are inherently more risky, with unpredictable issues arising	L	Biofuel and HVO are not new technologies or in early phases of supply chain development. Refining capacity is expanding with demand and the direction of travel to Net Zero 2050 which requires switching from fossil fuels.	L
Service operation	Changing mix of diesel and HVO introduces operational issues with vehicles	L	There are no reported issues with using HVO flexibly. HVO has fewer impurities, so filters etc need cleaning and replacing less often, and need for AdBlue is decreased	L

Financial and State of the Market risk assessment highlights unknown but manageable infrastructure costs for HVO refuelling

Consideration	Risk	Risk - level	Mitigation	Ease of mitigation (H is 'not easy')
Financial	Decarbonisation will increase costs of delivering refuse collection services	M	Service delivery cost will increase anyway as more people and houses. Financial cap on additional fuel costs	L
	Cost of infrastructure for HVO tank Tonbridge Wells have seen their cost estimates for a tank double (to £70k).	M	Costs will vary depending on option to address tank access	(see below)
	Cost of vehicles (end of current lease 2031)	L	HVO can be used in existing vehicles. On replacement, diesel/ HVO vehicles cost less than electric or hydrogen alternatives, and have fewer operational and infrastructure costs and risks.	L
State of the market	TMBC does not want to be the 'first mover' or adopt a technology still in development or unproven	L	Biofuels have been blended into forecourt fuels for over a decade. HVO has been widely adopted by other LAs for at least 5 years for waste services with no reported operational service impacts.	L
	New technologies in development or unproven are inherently more risky, with unpredictable issues arising	L	Biofuel and HVO are not new technologies. Refining capacity is expanding with demand and the direction of travel to Net Zero 2050 which requires switching from fossil fuels.	L

Infrastructure risks highlight mitigation actions for infrastructure risk, but with their own challenges

Consideration	Risk	Risk - level	Mitigation	Ease of mitigation (H is 'not easy')
Infrastructure	Current site on Vale Rise (Tonbridge) is tight for space to fit HVO tank.	H	Conduct assessment of size of tank needed and access on current site	L
			Work with Tonbridge Town Centre Review as an opportunity to address access and space East of High St adjacent to current site or locate appropriate new site	M
			Work with Tunbridge Wells and other adjacent LAs to investigate opportunity to share tank/ site at an appropriate location on routes	M / L
			Work with other Districts to influence KCC to locate HVO refuelling at waste transfer station	M / L
			Work with HVO supplier to discuss refuelling at their existing stations in Kent if at appropriate location on routes	M/ H
	Refuelling infrastructure for HVO is not in place for the start of the new contract	M/ H	Diesel use to ensure no service interruption or delay to contract. Ensure HVO use over course of contract outweighs diesel.	M

Supply and Sustainability risks are relatively low or manageable through mitigation measures

Consideration	Risk	Risk - level	Mitigation	Ease of mitigation (H is 'not easy')
HVO supply	Increased demand for HVO will put pressure on supply chains, prices and sustainable sources	L	Commit to only using HVO produced from waste and residuals. Increased investment in waste feedstock collection and biorefining capacity across Europe rising with demand to 2030 and beyond.	L
Sustainability	HVO is produced on agricultural land or cleared land of high biodiversity value	L	Ensure supplier uses only ISSC accredited biofuels and/ or from waste only sources (e.g. industrial residues and cooking oil).	L
	If TMBC chooses a fuel cost cap and HVO prices are high, low use of HVO could result in low emissions reductions	L / M	The contract could include an option to periodically review the additional fuel cost cap to 2030 and beyond.	L
	Even if using 100% HVO, refuse collection will not be carbon neutral by 2030	H	The contract could include an option to pilot electric refuse collection vehicles on appropriate routes, depending on the state of technology and additional costs to 2030. TMBC could look into further mitigation and sequestration measures to deliver carbon neutral in the round.	M / L