STROUD DISTRICT COUNCIL

ENVIRONMENT COMMITTEE

THURSDAY, 30 MARCH 2023

Report Title	**INTERIM FLEET PROCUREMENT STRATEGY - UBICO**			
Purpose of Report	To update the committee on the intended method of Ubico fleet replacement over the next four years.			
Decision(s)	**The Committee RESOLVES to:** **i) Approve the interim fleet procurement methodology** **ii) Approve the introduction and use of Hydrotreated Vegetable Oil as an alternative fuel and delegate authority to the Strategic Director of Resources to work with Ubico to outline an appropriate additional revenue budget as outlined in the report** **The Committee RECOMMENDS to COUNCIL:** **iii) Include £45k in the capital programme for HVO Tank** **iv) Increase the vehicle purchase budget in the capital programme by £152k to meet the higher cost of EV procurement.**			
Consultation and Feedback	Liaison with the CN2030 Team and guidance from the Energy Saving Trust			
Report Author	Michael Towson, Community Services Manager Email: michael.towson@stroud.gov.uk			
Options	To proceed with alternative options as laid out in the report.			
Risks	1) That the cost of HVO rises, creating pressure on revenue budgets. 2) That HVO supply is interrupted These risks are mitigated – see 7.6			
Background papers	None			
Appendices	Appendix A – HVO Fuel Briefing Paper SDC Feb 23			
Implications (further details at the end of the report)	Financial	Legal	Equality	Environmental
	Yes	Yes	No	Yes

1. INTRODUCTION / BACKGROUND

1.1 Stroud District Council own the seventy-seven fleet vehicles that Ubico operate in the district. All of the vehicles are recorded on a rolling capital plan, with replacement cycles ranging from 5 to 10 years, depending on the vehicle type.

1.2 The capital funding is authorised within the usual Council reporting process. This assumes fleet replacement on a like for like basis. Any alteration requires additional capital investment to be sought.

1.3 In 2023/24 there are 24 vehicles due for renewal. Twelve are large refuse collection vehicles (RCVs), six are 7.5 tonne food waste vehicles, with the other six made up of three more variants. Trials are currently being conducted, to assess whether there is any prospect of round rationalisation on food waste.

1.4 SDC is committed to Carbon Neutral 2030, with the Council Plan (EC6.3) detailing a specific objective in relation to fleet; it commits to 'increase the proportion of council and partner fleet vehicles powered by zero or low carbon technologies'.

1.5 Every Ubico vehicle replacement is reviewed to assess and determine operational need and available technologies. This report seeks the approval to formalise this review process.

2. FLEET ELECTRIFICATION TO DATE

2.1 As per the Members Briefing dated 22nd February 2022, a good start has been made on electrifying the Ubico fleet. Charging provision has been readied, albeit further investment will be required (see 6.6-6.8), with two EV vehicles already operational and investment set aside from 22/23, for a further four.

2.2 The existing EV vehicles are a car derived van, used by the building cleaning team and an industrial street sweeper.

3. ELECTRIC VEHICLE PERFORMANCE

3.1 The car derived van has been an excellent addition to the fleet. The street sweeper has been less successful, with a number of technical glitches leading to time off the road and recovery to the workshop.

3.2 The technology for industrial machines, is in its infancy and therefore being pioneers, comes with associated risks. Nonetheless, successful trials were undertaken prior to purchase, so the performance in the field is disappointing.

3.3 The experience of the above echoes the eRCV (electric RCV) trial undertaken. Whilst the trial illustrated the potential to use electric vehicles, the battery life was not sufficient to complete larger rounds.

3.4 This has reaffirmed the operational stance that eRCVs are currently more suited to urban environments where mileages tend to be lower and terrain is often flatter. This is reflected by the local authorities that have invested to date.

3.5 In more rural environments, such as Stroud, there is limited scope to do this. Tewkesbury Borough Council are going through a similar process and recommendations similar to those in this report, have been presented to Council.

3.6 Any vehicle malfunction or shortcoming, increases the risk of service failure, with repeated problems posing a reputational risk. Residents value the waste services they receive and there is a keenness to maintain high satisfaction levels.

4. ELECTRIC VEHICLE OPTIONS FOR 2023/24 REPLACEMENT

4.1 Most vehicles now have an electric option or alternative, although some remain too specialised in the short term.

4.2 Currently there is no off the shelf option for split back RCVs, used to conduct the twin stream recycling. This also applies to the existing food waste vehicles and the 4x4 vehicles used for awkward collections.

4.3 There is therefore potential to switch up to nine fleet vehicles to EV in 2023/24.

5. HYDROGEN FUEL CELLS

5.1 The first hydrogen fuel cell waste collection vehicle has been added to fleet in the Merseyside area.

5.2 The local authority has a partnership arrangement with a commercial partner to share refuelling infrastructure.

5.3 Indicative costs suggest each RCV would cost circa. £0.75m, with significant additional investment required to realise the correct refuelling setup.

5.4 It is too early to detail precise costings and the technology remains too new for consideration at this renewal.

6. FLEET PROCUREMENT – OPTIONS APPRAISAL AND RECOMMENDATION

6.1 Table 1 illustrates a basic options appraisal for the replacement of Ubico fleet in line with the capital replacement plan.

Table 1 – Options for Ubico Fleet Procurement

Option 1 – Do nothing; procure diesel fleet for all vehicles
Option 2 – Procure exclusively EV fleet, unless model variants aren't available
Option 3 – Continue to invest in EV fleet where it doesn't represent a service risk and take steps to ensure a smooth transition to carbon neutrality, whilst safeguarding operational performance

6.2 Given previous commitments option 1, isn't feasible. It won't generate carbon savings and will severely hinder the ambitions of our CN2030 strategy.

6.3 Option 2 remains aspirational. Moving to EV fleet too quickly risks operational failure. There isn't sufficient surety to ensure vehicle range, especially considering the topography of the district. Battery degradation also poses a risk, especially in the latter years of the vehicle life. To assure service, reserve diesel fleet would be required, essentially double covering.

6.4 This leaves option 3 as the most prudent. Weighing up our CN2030 commitments, advice from the fleet management team at Ubico, our operational experience with EV vehicles and the risks associated with service failure, there is an important balance to be struck between decarbonising fleet and ensuring the vehicle specification. The clear advice therefore is to proceed with fleet procurement as follows:

- Light vehicles up to 3.5 tonnes – wherever possible replace with an EV option.
- Vehicles over 3.5 tonnes – assess EV opportunities and consider a switch to EV, utilising extensive vehicle trials to evaluate the operational suitability. If EV is considered to present an operational risk, purchase the latest Euro 6 standard vehicles and potentially switch to the use of cleaner fuels i.e. HVO (see section 7)

6.5 Applying this strategy for the 2023/24 renewal cycle will focus the switch to EV on five vehicles. One car derived van and four 3.5 tonne cage tippers, used on the streets/grounds service. Subject to operational trials, this will require an additional investment of £152k and generate carbon savings of circa. 36 tonnes p.a.

6.6 However, this further investment in EV fleet also requires an upgrade to the supply capacity from the grid. Currently the depot is supplied with 69 KVA, which is sufficient to supply the six vehicles already funded.

6.7 To simultaneously power the additional five vehicles highlighted in 6.5, SDC will need to engage the national grid to increase the supply and/or source alternative solutions. Property Services via Facilities Management are already engaged in this process, which may include a future business case for photovoltaic (PV) cells with solar batteries, added to the roof of the depot in Gossington.

6.8 Further alternatives, such as off site charging, will also be considered.

7. ADDITIONAL CONSIDERATIONS

Hydrotreated Vegetable Oil (HVO)

7.1 HVO is an alternative to traditional B7 diesel. It is a second-generation biofuel, which can be used as a direct replacement for diesel, being approved for use by manufacturers and requiring no vehicle modification whatsoever.

7.2 The introduction of HVO for use with the diesel powered vehicles on fleet, will allow an additional transitional step to the EV journey.

7.3 An additional briefing paper on HVO is attached as Appendix A. This has been written by the Head of Fleet Operations at Ubico.

7.4 In summary the use of HVO reduces 'well to wheel' carbon emissions by 80-90%. Whilst it may not be a long-term solution that removes particulate pollution, it is viewed as an appropriate stepping stone to carbon neutrality. This was reflected to SDC officers in a seminar conducted by the Energy Saving Trust.

7.5 As with the transition to EV, HVO does come at a premium. The current price differential between HVO and diesel has been inflated in line with supply disruption, partially created by the war in Ukraine.

7.6 Any risks associated with supply, are completely mitigated by the ability to switch between fuels without the requirement for modification. Therefore, the use of HVO comes with little risk to service provision, albeit a switch back to B7 diesel may be seen as a retrograde step.

7.7 Based on a representative figure of 21.8 pence above the price of diesel per litre and calculating using the actual fleet mileage figures for 2021/22, this would equate to an additional revenue cost of £82k p.a.

7.8 However, at the time of writing price differentials have changed quickly, exacerbated by the decreasing cost of diesel. Current prices, which illustrate a differential of 57 pence per litre, equates to an additional revenue spend of £215k p.a. Whilst there is an expectation that differentials will return to previous ranges, of between 15 and 26 pence per litre, this will be driven by market forces.

7.9 For 2023/24 the budget for diesel on the Ubico contract has been based on a diesel price of 155 pence per litre. This means that some of the price differential has already been accounted for in the approved base budget. Therefore in 2023/24, based on the very latest figures, an additional revenue budget of circa. £110k would be required for the switch. In future years, based on the range expectation, the additional cost of using HVO will be between £57k and £215k.

7.10 A full site survey will be required, but the use of HVO is also likely to require a new fuel tank, with a one-off capital cost of £45k. The vast majority of the fleet will be able to operate on HVO, but diesel will still be used on fleet that is not compatible, or for which there is no manufacturer agreement.

7.11 The carbon savings for HVO are considerable. Calculating on the same mileage figures and assessing the existing fleet for suitability, it's estimated to reduce total carbon emissions by 1,049 tonnes p.a.

7.12 In terms of carbon payback this will maximise and front load carbon savings, well beyond the equivalent financial investment in eRCVs. Based on a typical RCV round in the district, an eRCV would achieve a saving of approximately 41 tonnes p.a.

7.13 In light of the impressive carbon savings and recognising that HVO is a genuine transitional fuel, it is also recommended that SDC commence the use of HVO in Ubico fleet, wherever possible. This change is recommended to take place by the summer/autumn of 2023.

Future Potential to Retrofit Vehicles with EV Technology

7.14 EV Technology continues to develop rapidly. Should we proceed to purchase euro 6 emission RCV's in 23/24, as per the recommendation, there is a future option to retrofit the chassis of these vehicles, applying an electric drivetrain to make them 100% electric.

7.15 This use of so called donor vehicles is something that is happening locally, with RVS in Dursley, undertaking some of this work. The costs for retrofit are below that of a new eRCV, but without the more extensive warranty support.

Driver Behaviours

7.16 Using vehicle telematics to improve driver behaviours has already proved beneficial on other Ubico contracts and SDC are keen to introduce it.

7.17 Installing connected fleet management software, 'Ubiconnect', it utilises a 'safe driving assistant' providing real-time in-cab feedback and coaching to drivers whilst they are on the road. This is supported by the Ubico Driver Liaison Manager, who closely analyses data provided by the software and uses this to help improve driver performance.

7.18 The software has helped reduce costs and increase operational efficiency, delivering savings in carbon and improved air quality. Driver behaviours impact fuel use and can have a large bearing on tyre wear. A new tyre policy has already been introduced, achieving carbon savings across Ubico of around 96 tonnes, whilst the driver behaviours module has delivered carbon savings of 90 tonnes in the Cotswold DC area.

7.19 SDC will ready new fleet for introduction of this software.

8. SUMMARY

8.1 Ubico and the SDC Multi Service Team are keen to decarbonise fleet. However, there is a keenness to transition in such a way as to not risk service provision.

8.2 It is therefore recommended to continue with a step change approach, assessing vehicle procurement on a case by case basis, to ensure we have the best available vehicles to do the job.

8.3 In the short term this means switching smaller fleet vehicles to electric, whilst using cleaner fuels (HVO) for larger vehicles.

8.4 In 2023/24 applying this strategy will switch up to 20% of the vehicles due for replacement, to electric. EV adoption for critical services will increase further as technology develops within the industrial sector.

9. IMPLICATIONS

9.1 Financial Implications

There are financial implications arising from this report. A proposal of £197k increase in the capital programme for a HVO Tank and additional costs associated with EV vehicle procurement. Additional capital costs will be met through borrowing as with the wider Ubico capital programme. As outlined in the report, the use of HVO fuels will result in additional revenue cost as it is more expensive than conventional diesel. This cost will be met in 2023/24 through the waste and recycling reserve with future years requiring an update to the Medium Term Financial Plan. Members will be updated on the revisions made to the budget as a result of the use of this fuel.

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9.2 Legal Implications

The Council will need to comply with its Contract and Procurement Procedure Rules and the Public Contract Regulations 2015 when undertaking the procurement of new vehicles referred to in this report.

All contracts need to be prepared by or reviewed by One Legal prior to signature.

Donna Ruck, Senior Lawyer

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9.3 Equality Implications

There are not any specific changes to service delivery proposed within this decision.

9.4 Environmental Implications

The report above sets out details of significant implications throughout with specific detail provided in 7.11-7.13.