

## **APPENDIX A - Maintenance**

The maintenance profile for each type of vehicle, item of plant/equipment is determined by a number of factors –

Proposed life on fleet – in theory, the shorter the life on fleet, the less maintenance will be required. If a vehicle stays on fleet beyond its anticipated life then the profile must reflect this.

Mileage/usage profile – if a vehicle is operating under arduous conditions (e.g. short low speed runs or high mileage long journeys) then this will need to be reflected in the maintenance profile

Special manufacturer recommendations – E.g. Dennis Eagle RCV's require a 12 weekly engine oil and filter change, these types of special requirements must also need to be factored in.

If any of these factors change during the life of the vehicle then the profile will need to be adjusted.

For anything >3500kg MAM or over 8 passenger seats, the requirements for maintenance are part of legislation and subject to regulatory control. Lighter vehicles are usually based on what the customer requires and/or is willing to pay e.g. NPS 4 year "no frills" option, BH fixed 5 year, annual "S" Service, Biannual "F" Service.

## APPENDIX B - Types of Fuel

Diesel	<p>Reliable and available as standard across the majority of the vehicle types we operate. Very versatile and new vehicles all meet latest EU emissions standards. Fuel is widely available.</p> <p>Currently has a bad image due to Nitrogen Oxide content in emissions, may cause fuel prices to rise or additional tax. Low mileage and type of use can cause issues and additional costs due to DPF becoming blocked.</p>
Petrol	<p>Reliable and widely available in lighter vehicles, not available in LGVs or HGVs. Usually less economical than diesel powered engines however petrol is slightly cheaper and still readily available. Has a bad image as a fossil fuel but does not receive as much bad press as diesel. Higher CO2 emissions mean that the VED on petrol is higher than diesel.</p>
Electric	<p>Slowly becoming more available in small and large vehicles and reliability does not appear to be an issue with the latest models. The range is not as good as other fuels and while electricity is easily accessible, charging can take a long time and fast charge points are few and far between. Payload is also compromised due to heavy batteries, although on LGVs this is accounted for with a MAM. Due to this being a new technology our in house maintenance team currently lack the expertise required to maintain electric motors.</p>
Hybrid	<p>Combining a diesel or petrol engine with an electric motor to reduce the emissions the vehicle produces. Available for light vehicles with most manufacturers having hybrid models and technology being further developed. Few LGV or HGV hybrids however they are becoming more and more available. Fuelling is not a problem as they run on petrol or diesel and the engine charges the batteries. VED is usually very low due to minimal CO2 emissions.</p>
LNG	<p>Not readily available, requires quite a lot of infrastructure or travelling to fuel up as stations are limited. Large capacity spark ignition engine required which has limitations in terms of power/torque. More complex engine and systems, reduced payload, extra maintenance on fuel tanks etc.. Reduced particulate emissions, NOX, lower noise emissions, reduced oil change frequency, quite common on the continent. Big manufacturers embracing this tech e.g Iveco, Mercedes.</p>
CNG	<p>Not readily available, requires quite a lot of infrastructure or travelling to fuel up as stations are limited. Large capacity spark ignition engine required which has limitations in terms of power/torque. More complex engine and systems, reduced payload, extra maintenance on fuel tanks etc.. Reduced particulate emissions, NOX, lower noise emissions, reduced oil change frequency, quite common on the continent. Big manufacturers embracing this tech e.g. Iveco, Mercedes.</p>
Hydrogen	<p>Not perceived to be a viable option until 2032, ultimate clean fuel. Currently complex and expensive to extract the hydrogen from water as no tech exists to remove it from the atmosphere. Currently small scale solar powered plants are the only real option. Most abundant element on earth and once the technology becomes widely available this will be the preferred option for most manufacturers and fleets.</p>

## **APPENDIX C - Procurement**

The procurement strategy will operate within the wider fleet replacement strategy. It will include a review of the following options and requirements:

1. Evaluation of the different available frameworks – YPO, CCS, ESPO, NEPO or standalone tender.
2. Ad hoc or aggregated competitions – either individual procurements to take advantage of spot pricing, or a longer term framework based on aggregated forecast requirements.
3. Use of CCS e-auction and it's associated greater buying power producing cost benefits.
4. Use of frameworks with web based vehicle procurement software for real time manufacturers pricing.
5. Options to contract for warranty with in-house servicing, or warranty plus external servicing.
6. Potential for manufacturer and model standardisation, balancing the opportunity to reduce spares stockholding, strengthen contract management and improve in house maintenance ability, versus limiting supplier competition, potentially increasing acquisition cost and decreased technical capability.
7. Effective contract management requirements.
8. Opportunity for adding social value such as carbon reduction (electric vehicles or pollution reduction), local economy benefits, etc..

Factors to be part of any procurement exercise include:

- Capital cost including lease vs buy appraisal.
- Technical and functional ability, including options for innovation, more efficient vehicles/equipment, electric or fuel cell options.
- Whole life costs - service and maintenance options, costs of parts and consumables, warranty terms, fuel efficiency and sustainability.
- Support and maintenance - location and responsiveness of support, guaranteed uptime, lead times for parts and consumables, loan vehicles.
- Commercial relationship and contract management- service level agreements and KPI's, contract terms, remedies for reliability issues or service disruption.

## **APPENDIX D - Financial options appraisal**

Financial Services (FS) need copies of purchase orders (so that accurate details of the vehicles involved have been passed on) and likely delivery dates.

As all assets have to be financed in the year that they are acquired, FS needs to plan the best time to complete a tender exercise.

FS also need copies of the actual invoices when the vehicles have been delivered. Based on this information, FS completes tender for leasing rates – these are then compared to the cost of borrowing to ascertain the cheapest form of financing.

Fleet are then consulted to see if the cheapest form of financing necessarily is the most operationally effective method – each group of vehicles are chosen on their merit.

Whichever method is chosen, details of the annual cost of each vehicle and the end date of any leasing agreements are passed to Fleet from FS, for their future replacement process.