

## Lancaster City Council | Report Cover Sheet

<b>Meeting</b>	Cabinet	<b>Date</b>	17 <sup>th</sup> Aug 2020
<b>Title</b>	Covid-19 Pandemic- Policy for decision making and spending delegations within the Budget and Police Framework  Award of contract- electric refuse collection vehicles		
<b>Report of</b>	Director for Communities and Environment		
<b>Purpose of the Report</b>			
To seek authorisation to complete an award of contract in accord with the 'Covid-19 Pandemic- Policy for decision making and spending delegations within the Budget and Police Framework'			
<b>Key Decision (Y)</b>	Y	<b>Date of Notice</b>	2.3.2020
		<b>Exempt (N)</b>	

<b>Report Summary</b>
As above

<b>Recommendations of Director for Communities and Environment</b>
That Cabinet authorises officers to complete the award of contract for two electric refuse collection vehicles.

<b>Relationship to Policy Framework</b>
The Council has a target to become carbon neutral by 2030. The Council's refuse collection vehicles produce approx 25% of its direct CO2 emissions. Switching the vehicle fleet from diesel to electric power is an agreed part of the Council's climate change plans. The funding for this was approved in the Council's budget for 2020/21

<b>Conclusion of Impact Assessment(s), where applicable</b>	
Climate- as outlined	Wellbeing & Social Value
Digital	Health & Safety
Equality	Community Safety

<b>Details of Consultation</b>
The principle of purchasing two electric refuse collection vehicles was considered extensively during the formulation of the Council's 20/21 budget. Funding for their purchase was approved by Full Council.

<b>Legal Implications</b>
NA

<b>Financial Implications</b>	
The total budgetary provision contained within the general fund capital programme for both vehicles is £750K. The additional £81K (attributable mainly to the inclusion of a 7 yr battery and chassis warranty) can be financed by the deferred purchase of significant vehicles identified in the replacement programme from this financial year to next, leading to savings in the MRP requirement.	
<b>Other Resource or Risk Implications</b>	
See attached exempt appendices	
<b>Section 151 Officer's Comments</b>	
The Section 151 Officer has been consulted and has no further comments to make.	
<b>Monitoring Officer's Comments</b>	
The Monitoring Officer has been consulted and has no further comments to make	
<b>Contact Officer</b>	Mark Davies
<b>Tel</b>	
<b>Email</b>	mdavies@lancaster.gov.uk
<b>Links to Background Papers</b>	

## 1.0 Introduction

- 1.1 The Council's approved capital budget for 2020/21 included provision for the replacement of two diesel refuse collection vehicles with battery powered electric vehicles.
- 1.2 The replacement of these first two vehicles is taking place within the context of review of the way household waste collection / recycling services are planned and delivered. The aims being to reduce CO2 emissions, contribute to improved air quality, make the best use of the vehicles as assets and balance the overall capital and revenue spend so that when fully replaced the whole life costs are comparable to a diesel powered fleet. The Energy Saving Trust have completed a detailed assessment of how this could happen. (Summary of this report is included in the appendix)
- 1.3 The procurement exercise has now taken place and the costs are within approved budgets.
- 1.4 The 'Covid-19 Pandemic- Policy for decision making and spending delegations within the Budget and Police Framework' require items of spend over £150K to be authorised by Cabinet (with some defined exceptions).

## **2.0 Proposal**

**2.1** To delegate officers to complete the award of contract for two electric refuse collection vehicles, including the provision of a 7 year chassis and battery warranty, at a combined cost of £831,298.30. The figure include deduction of the OLEV grant for £20,000 per vehicle, which is being underwritten by the supplier of the vehicle.

## **3.0 Options and Options Analysis (including risk assessment)**

**3.1** The options are to either authorise completion of the award of contract or not.

**3.2** Not authorising this will still mean that replacement vehicles need to be procured in order to ensure continuity of service delivery. The vehicles procured would be diesel powered. Delay in procurement would incur some costs in the repairs and maintenance of vehicles being operated beyond their expected lifespan. It would also conflict with the Council's climate change aspirations.

## **4. Officer Preferred Option (and comments)**

**4.1** The officer preferred option is to authorise officers to award the contract.

## Appendix

### **Summary from Energy Saving Trust Report- March 2020 (from report by Tom Endacott)**

Lancaster City Council (LCC) has sought this report to assess the efficiency of its refuse collection fleet in terms of greenhouse gas (GHG) emissions, energy consumption and costs. In addition, LCC is particularly interested in exploring the opportunity to use 26 tonne electric refuse vehicles on the fleet. The analysis was undertaken by the Energy Saving Trust (EST). Data was supplied for the period April 2019 to November 2019. This data has been annualised to provide an estimate of the GHG emissions of the fleet in a whole year.

During this period, LCC operated 29 refuse collection vehicles, nine general purpose heavy commercial vehicles (HCVs), 106 light commercial vehicles (LCVs), six cars and at least 29 plant vehicles. These numbers include short-term hires, disposals and replacements. Based on the data supplied; we estimate these combined fleets:

- drove at least 803,000 miles,
- produced at least 1,240 tonnes of carbon dioxide equivalent (CO<sub>2</sub>e) emissions,
- consumed at least 5,000 megawatt hours of energy,
- emitted up to 2.2 tonnes of nitrogen oxides (NOX),
- emitted up to 17 kg of particulate matter (PM),
- were 26% clean air zone compliant (excludes plant).

1,240 tonnes of greenhouse gas (GHG) emissions would fill 240 “standard” hot air balloons.

In January 2019 Lancaster City Council declared a ‘Climate Change Emergency’ (CCE) and set itself the target of being a “Net Zero” authority by 2030. Part of the declaration includes the electrification of the council’s vehicle fleet.

This review has identified that the refuse collection vehicles (RCV) are responsible for over half (62%) of the council’s road transport GHG emissions. The remainder of the GHG emissions were split across the light commercial vehicle (LCV) van fleets (18%), plant (16%) and other HCVs (8%). Omitted from this review is the GHG footprint of the councils Grey Fleet (staff owned cars used for council business and paid a mileage rate).

There are opportunities to further electrify parts of the van and car fleets (the council already operates two electric cars) but the impact on overall GHG emissions will be small. In the large van (3.5 tonne) and HCV fleets there are currently no cost-effective and practical ultra-low emission options, although that is expected to change by 2025.

The fleet where electrification can make a big difference is the refuse fleet. Lancaster City Council have already identified this as an area for potential emission savings to be made and has proposed the initial replacement of two diesel RCVs with electric RCVs (eRCV).

At least two UK councils are now actively pursuing the large-scale use of electric RCVs (20+). The City of London has signed a contract with Veolia for all-electric refuse collection by the end of 2020 and a Manchester council are currently seeking approval to purchase a 27-vehicle eRCV fleet (half the fleet) to replace their current Euro V vehicles. It is understood that in both cases these councils are planning

to use the “Electra” vehicle which is based on a new Mercedes Econic 3-Axle 26 tonne chassis supplied direct from Mercedes as a glider (no engine installed). Both councils have robustly tested the prototype vehicle on their routes. In Manchester the test lasted six months and covered all waste collection types. The vehicle was able to complete all routes, but the garden waste route was at the edge of its range due to a 20 mile trip to the processing centre. Manchester is planning to use its Euro VI diesels bought two years ago for the garden waste rounds in the expectation that by 2025 these vehicles can be replaced by electric RCVs with the range to deliver the service. The new eRCVs will be used for residual and recyclable collections. In London there were no issues with any of the rounds, but tipping distances were all short as the council uses a local waste transfer station. After initial scepticism the eRCV proved to be very popular with drivers and crews who like the low noise levels, lack of exhaust and rapid acceleration.

The vehicles cost over twice as much as the conventional diesel vehicle but are much more energy efficient and use low cost “fuel”. Other savings arise from simplified maintenance (only 80 moving parts where the diesel has over 2,000) and the lack of the complex exhaust treatment system needed to remove particulates and nitrogen oxides.

For this report we have advised on 23 of the 29 RCVs, the six RCVs not included are two operated only for short periods of time, presumably to cover vehicle breakdowns, and the four smaller 12 to 16 tonne vehicles.

We suggest the fleet is reduced to 19 eRCVs that are operational for eight years, with an accompanying increase in operating days and daily mileage. Tracking data provided by LCC suggests that the current fleet is underutilized and that the same level of service could be provided with only 19 RCVs. Reducing the fleet size would significantly reduce the initial capital costs of an electric RCV fleet, spreading the remaining capital costs over a smaller number of higher mileage vehicles with a marginal change in running costs.

A fleet of 19 eRCVs would cost £6.6 million to buy, £3.1 million more than replacing the current fleet with diesel RCVs. These changes in fleet operation and vehicle type would save 5,262 tonnes of CO<sub>2</sub>e. Over an eight-year period 19 eRCVs would save an estimated £2.75 million in energy, service and exhaust fluid (AdBlue) costs. This leaves an additional cost of £1,951 per vehicle per annum associated with the capital cost of operating a 19 vehicle ultra-low emission fleet (£359,000 over eight years). The gap is significant but comparable to the value (HM Treasury Shadow Price) of the GHG emissions saved.

Other cost saving measures could include using the residual energy stored in the eRCV batteries at the end of the working day as a local off-set, powering LCC’s buildings during the late afternoon when grid requirements peak, and the energy price is higher than overnight when the vehicles were charged. This is known as vehicle to grid (V2G) and may require some modification of the vehicle charging system.

LCC needs to consider how it reduces the number of operational RCVs to 19 in preparation for a fully electric fleet. LCC should also obtain the half-hourly electrical energy consumption data for all sites where EVs of all types could be based to ensure there is headroom to recharge all its vehicles overnight. The EST can help with this and can advise on the type of charging infrastructure needed. The UK grid is expected to rapidly decarbonise over the next 10 years and the electric RCV fleet will benefit from this. We have built decarbonisation of the grid into our calculations of the eRCV GHG footprint. Based on the available fleet data and the anticipated development of electric vehicles up to 26 tonnes maximum authorized mass it is expected that by 2025-2027 all LCC fleet operations could be delivered by electric vehicles. This will require a significant charging infrastructure at depots and

offices. Planning for this should begin as soon as possible and the groundworks for an EV charging infrastructure should be integrated into all site development plans at all council sites including car parks. Electric vehicle procurement should involve the LCC energy team as well as the end user and fleet management because the vehicles can form part of the energy supply infrastructure at LCC sites.