

GREATER LONDON AUTHORITY

REQUEST FOR MAYORAL DECISION – MD2084

Title: Commercial Electric Vehicle Demonstrator

Executive Summary:

The Mayor has made improving London's air quality one of his top priorities as it is one of the most significant health challenges facing Londoners. He has also committed to reduce congestion including working with freight companies to reduce the number of large lorries on the city's roads, particularly at the busiest times. Through the Mayor's Environment and Transport strategies (due to be published later this year) and the London Plan he will promote actions to ensure London's air quality is improved and congestion is reduced.

The GLA and Gnewt Cargo (a leading SME with a proven logistics operator who specialises in electric vehicles), have secured circa £1.1M from Innovate UK to run a low emission freight and logistics trial from April 2017 – 2019. This will help meet these manifesto commitments and mayoral strategy ambitions through the trialling of freight collections using zero emission vehicles. This demonstrator will build on a recently completed Innovate UK funded demonstrator the GLA undertook with Gnewt Cargo which demonstrated the benefits that could be achieved through consolidating commercial parcel delivery with small electric freight vehicles. Just over 13,000 freight deliveries were undertaken by electric vans, covering 149,000 miles, delivering circa 2 million parcels each year. The demonstrator achieved a range of benefits including reduction in NO_x by 71%, PM₁₀'s by 87% and CO₂ by 67% relative to conventional diesel vehicles. The demonstrator also achieved a 57% reduction in vehicle trips.

This new demonstrator will help prove the commercial viability of this technology for this size of vehicle, encouraging widespread introduction of low and zero emission vehicles to other commercial fleets operating in London and other urban areas across the UK.

Decision:

That the Mayor approves:

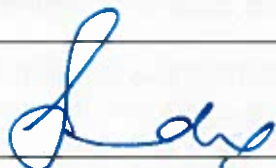
- The receipt from Innovate UK of up to £292,093 in grant funding to manage and deliver the low emission freight and logistics trial; and
- Entry into £100,000 sub-contract with ARUP to provide data collation and data analysis support.

Mayor of London

I confirm that I do not have any disclosable pecuniary interests in the proposed decision, and take the decision in compliance with the Code of Conduct for elected Members of the Authority.

The above request has my approval.

Signature:



Date:

10/4/17

PART I - NON-CONFIDENTIAL FACTS AND ADVICE TO THE MAYOR

Decision required – supporting report

1. Introduction

- 1.1 The Mayor has made improving London's air quality one of his top priorities as it is one of the most significant health challenges facing Londoners. He has also committed to reducing congestion through a number of transport initiatives including working with freight companies to reduce the number of large lorries on the city's roads, particularly at the busiest times.
- 1.2 Through the Mayor's Environment and Transport strategies (due to be published later this year) and the London Plan he will promote actions to ensure London's air quality is improved and congestion is reduced.
- 1.3 The GLA and Gnewt Cargo (a leading SME with a proven logistics operator who specialises in electric vehicles), have successfully secured circa £1.1M from Innovate UK (a non-departmental body tasked with accelerating economic growth by supporting UK innovation) from their £20 million funding call for Low Emission Freight and Logistics Trials that demonstrate innovative new technologies for larger commercial N1, N2 and HGV vehicle categories. The funds secured will support a low emission freight and logistics trial from April 2017 – 2019.
- 1.4 The aim of the Innovate UK funding competition is to prove the commercial viability of this, demonstrating innovative new technologies for this size of vehicle category and to, encouraging the widespread introduction of low and zero emission vehicles to other commercial fleets operating in London and other urban areas across the UK.
- 1.5 Following a competitive grant funding application, Gnewt Cargo (lead partner) in partnership with the GLA has been awarded circa £1.1M (£813,085 and **£292,093** respectively) from Innovate UK to deliver a low emission freight and logistics trial from April 2017 - 2019.
- 1.6 The aim of the trial is to test a range of state of the art N1 & N2 electric freight vehicle types and sizes in urban and inter-urban environments for a range of parcel sizes. The project will also install and test on-site charging infrastructure to support the 25 vehicles being tested at GNet's central London depots. During the trial, Gnewt will carry freight for Hermes, DX, TNT and IKEA.

2.0 Background

- 2.1 Transport for London estimates more than 281,000 daily journeys are commercial freight. Of this total, 30% of all central London traffic and 10% of all Greater London traffic are HGV and vans, the majority of which are diesel-powered (Circa 97%). By 2030 HGV traffic is projected to grow by 43% due to the unparalleled growth in e-commerce and personal deliveries. Transport currently accounts for 63% of NO_x & 52% of PM₁₀. (Source: LoCity website, last updated November 2016).
- 2.2 Tackling emissions from freight vehicles is therefore crucial to improving air quality in London which is a top priority for the Mayor of London. To address this, the Mayor has run a number of smart freight trials using smaller electric vehicles. The Mayor through TfL's LoCity initiative also provides support to businesses with fleets transitioning to cleaner vehicles and alternative fuels.
- 2.3 This demonstrator will build on a recently completed Innovate UK funded demonstrator the GLA undertook with Gnewt Cargo which demonstrated the benefits that could be achieved through consolidating commercial parcel delivery with small electric freight vehicles, Just over 13,000 freight deliveries were undertaken by electric vans, covering 149,000 miles, delivering circa 2 million parcels

each year. The demonstrator achieved a range of benefits including reduction in NO_x by 71%, PM₁₀'s by 87% and CO₂ by 67% relative to conventional diesel vehicles. The demonstrator also achieved a 57% reduction in vehicle trips.

- 2.4 This project provides a good opportunity to test and evaluate the viability to replace diesel equivalent vehicles with state of the art electric N1 and N2 vehicles for day to day freight transport needs. Whilst in-roads have been made in commercialising smaller electric freight vehicles, electric equivalent vehicles for larger N1 (up to 3.5 tonnes) and N2 (between 3.5 to 12 tonnes) vehicles which are the most popular sized diesel freight vehicle are largely untested and not currently commercially available. Subject to vehicle performance, the use of these electric vehicles could significantly contribute to reducing the negative impact on London's air quality caused by existing diesel equivalent freight vehicles.
- 2.5 Although the Mayor's Direct Vision Standards do not apply to these trial vehicles as they are not traditional HGV's (which are 12 tonnes and over) pedestrian and cyclist safety is at the core of the trial. All vehicles will be fitted with on-board vehicle telematics that monitor driver behaviour and vehicle performance which helps in reducing the risks of collision with bicycles and pedestrians.
- 2.6 The vehicles to be trialled will be subject to the relevant TfL work related road risk requirements. Gnewt has been a bronze credited member of Fleet Operator Recognition Scheme (FORS) since circa 2014. All Gnewt drivers are trained in vulnerable road user safety and Gnewt does routine driver license checks as well as ensuring any collisions are properly recorded. Routine DBS criminal and driving license checks are also done.
- 2.7 The project will be delivered by Gnewt Cargo Limited in partnership with the GLA with support from ARUP. Gnewt Cargo will be responsible for operational day to day freight deliveries for a range of clients as well as management of the electric vehicle fleet and charging infrastructure. The GLA will not provide services to Gnewt Cargo. The GLA will provide project management expertise, stakeholder engagement management, contract & budget management, data analysis & reporting as well as data dissemination and exploitation for the project in line with the Innovate UK funding award. As an SME specialising in last-mile logistics in central urban areas, the majority of Gnewt deliveries during the trial will operate in the London Congestion Charge zone, LEZ and ULEZ when it launches. The density of urban areas in these zones necessitates a flexible fleet that allows parking for on-foot deliveries and one that is capable of negotiating small congested Central London roads.
- 2.8 As per Innovate UK request, the GLA will sub-contract ARUP to provide data collation and analysis, services for the project. ARUP were not procured competitively by the GLA for the services to be funded by Innovate in this instance, so approval of an exemption from the requirement of the GLA's Contracts and Funding Code (the "Code") has been secured. A single source justification form has also been considered and approved by TfL procurement.
- 2.9 Such an exemption may only be approved on certain grounds set out in the Code. ARUP were procured competitively under TfL's project management framework for an earlier piece of work (the "Agile Logistics" Project") related to the Project and also funded by Innovate UK; and Innovate UK has insisted, as a condition of this funding, that ARUP are retained in this instance because of ARUP's extensive experience and involvement in the Agile Logistics Project.

3. Objectives

- 3.1 The main objectives of this project are to assess:
- viability to replace diesel equivalent for day to day freight transport needs;
 - electric vehicle charging infrastructure viability – i.e. speed, cost and charging capacity;
 - vehicle lead times, leasing terms and charging costs;
 - day to day suitability for delivering in dense London urban areas;
 - environmental performance – NO_x, PM₁₀, PM_{2.5}, CO₂ and SO₂ emissions; and

- cost, value for money and return on investment – e.g. miles per gallon vs kWh per mile etc.

4. *Expected Outcomes*

The project is expected to deliver the following lasting changes compared to diesel equivalent deliveries:

- 60% reduction in the number of vehicle trips;
- 70% less kilometres travelled;
- reduction in NO_x (80%);
- reduction in PM (80%);
- reduction in CO₂ (60%) emissions;
- Increased market share for electric freight vehicles due to increased demand and consumer acceptance;
- reduction in congestion as a result of reduce vehicle trips due to larger vehicle capacity;
- Improved electric vehicle charging infrastructure in London; and
- greater percentage of green deliveries for the e-commerce sector.

5. **Equality comments**

- 5.1 The GLA and TfL are subject to public sector equality duties and any collaboration agreement, third party contracts and grant funding agreement entered into by the GLA, will be consistent with these duties, and with the Mayor's strategies and plans, including those identified in section 4 below with associated equality impact assessments.
- 5.2 No adverse impacts are identified for the proposed programme described in this document. Meeting the objectives of this proposal is expected to bring positive contributions to equality arising through improving air quality and reducing congestion for diverse groups of Londoners across the city.

6. Other considerations

a) Key risks

Risk	Impact	Likelihood	Mitigation
Vehicle reliability - Limited real world testing	Would cause operational issues and result in the requirement to back-up with a Diesel alternative	High	Due to the early life-cycle of such vehicles it is wise to assume a reasonably high risk of reliability issues. Gnewt has a diverse fleet of alternative emission-free vehicles on fleet. They are therefore prepared for such eventualities with spare capacity vehicles and a full time mechanic to ensure that operationally they can manage vehicle reliability if required. Furthermore, Gnewt will ensure agreements with both manufacturers to ensure they have service level obligations to assist in warranty and breakdown claims whilst on lease. Due to the high profile of the project this represents a major step for these early stage manufacturers and so they will offer support wherever required.
Vehicle procurement lead time	Delivery times may reduce project operational time (optimum live testing)	Medium	Gnewt will liaise with the manufacturers on a strict weekly basis to ensure that lead times are being met. Should any slippage occur, they will mitigate this by lengthening the Diesel fleet and utilising existing EV fleet for the duration to compensate and therefore continue to capture a longer base-line data set.
Electric vehicle range may be insufficient for delivery rounds	Requirement to increase fleet size to compensate	Low	Gnewt will either increase the electricity supply to the buildings or increase the fleet size to compensate. The former is the longer term strategy and the latter mitigates the immediate issue.
UK registration process may cause vehicle deployment and live testing delays	Registration may reduce project operational time (optimum live testing)	Low	Vehicle types that have not been registered on UK road previously have historically taken longer to receive approval. GLA will work alongside Gnewt and the Driver & Vehicle Standards Agency to ensure that the registration process is kept on track.

Risk	Impact	Likelihood	Mitigation
Manoeuvrability of larger in dense urban roads untested	May cause lower vehicle productivity and cause increase in fleet size	Low	Gnewt is experienced in operating larger vehicles in London and even the largest van is not unusually larger to that of many mainstream diesel equivalents. However they are materially different to the core fleet currently in operation. The base line data period will give us the opportunity to evaluate any potential issues on this topic prior to the arrival of the low-emission equivalents.
Depot access for larger vehicles	May reduce vehicle efficiency and therefore productivity.	Medium	Gnewt's current main depots in Central London offer some larger vehicle access but a more robust option will be required during the project term. Gnewt is already negotiating terms on larger premises as part of the depot re-structures and these premises will be operational prior to the project start date.
Charging infrastructure capacity – untested for larger vehicles. May impact on the number of vehicles that can be charged which can affect vehicle utilisation and impact on sub-station capacity	May reduce vehicle utilisation and therefore productivity.	Low	Local grid management for large EV fleets has been something Gnewt has managed very closely over a number of years and therefore they have a wealth of experience in this area. However charging a number of larger vans is materially different to the existing fleet. As a matter of precaution Gnewt has already spoken to a major utility provider, two EV charging infrastructure companies as well as their own electrician to ensure they are as equipped with knowledge as possible to ensure that there is little disruption in this area.
Operating cost may be greater than anticipated	Project goes over-budget	Low	Gnewt has made provisions in contingency budgets to ensure that they are able to maintain the operational and commercial viability of the project during its term length. As Gnewt has operated a 100% electric fleet for over 7 years, we are comfortable in our budgetary estimations.

Risk	Impact	Likelihood	Mitigation
Inability to secure shorter lease terms with lenders – commercial leases usually 3-5 years. Shorter term leases proportionally more expensive.	May materially affect ability to conduct project within the required timeframe	Low	If Gnewt was unable to secure shorter lease terms it would look to negotiate terms that span beyond the scope of the project however initial conversations with relevant lending providers suggest that the shorter lease terms will be allowed for Gnewt in this case.
Failure to secure additional volume for new and existing clients	Larger vehicles may require new business from the large goods carriers to achieve maximum productivity	Medium	All vehicles Gnewt has proposed can be utilised on existing rounds with existing clients. However as indicated by expressions of interest from IKEA, TNT and DX there is additional work that can be offered given the appropriate vehicle profile.
Under-utilisation of vehicles	Compromised viability will effect long term utilisation	Low	It is imperative that the vehicles are fully utilised both for the success of the project and the commercial viability for Gnewt. Gnewt vehicle department will work closely with operations to ensure maximum utilisation at all times with regular meetings to that effect, minuted and disseminated.
Difficult to quantify increase in electricity usage	Would cause poorer results and less accurate dissemination of findings	Low	As electricity is both a utility for the company and 'fuel' for the vehicles. It is therefore imperative that the 'fuel' element is extrapolated accurately to obtain valuable results which will be achieved by careful monitoring of on-vehicle telematics.

b) links to Mayoral strategies and priorities

The Mayor has made improving London's air quality one of his top priorities as it is one of the most significant health challenges facing Londoners. He has also committed to reducing congestion including working with freight companies to reduce the number of large lorries on the city's roads, particularly at the busiest times.

The relevant existing Mayoral strategies against which this project aims to deliver are:

- Mayor's Environment strategy which aims to reduce London's CO₂ emissions and air pollutants (NO_x, PM₁₀ and PM_{2.5});
- Mayor's Transport strategy which aims to
 - reduce London's CO₂ emissions by 60% by 2025;
 - Speed up the introduction of low carbon road vehicles, including electric vehicles to improve air quality.

c) impact assessments and consultations.

Consultations

- Impact assessments and evaluation of the project will be carried out to determine the effectiveness of the project in meeting the required outcomes.
- The project team will continue to consult and engage with key stakeholders including Transport for London Freight Team and GLA Transport team.

7. Financial comments

7.1 There will be no GLA net cash contribution to this project. The GLA will receive £292,093 grant funding from Innovate UK for the low emissions freight and logistics trial project.

7.2 The funding comprises £134,000 to fund a GLA grade 10 post for two years and £158,093 for project management.

Legal comments

8.1 Section 4.1 of the Code requires the GLA to seek a call-off from a suitable framework, where possible, or if not, undertake a formal tender process which will be managed by TfL in respect of the services. However, paragraphs 2.6 above indicate that the GLA's third party contractor for the project, ARUP, was not competitively procured. In this regard, the Mayor may approve an exemption from this requirement under section 5 of the Code upon certain specified grounds. One of those grounds to approve an exemption is where there has been previous involvement in a specific current project or continuation of existing work which cannot be separated from the new project. Officers have indicated at paragraph 2.7 of this report that this ground applies and that the proposed contracts affords value for money. On this basis, the Mayor may approve the proposed exemptions if satisfied with the content of this report.

8.2 Innovate UK's funding contract restricts the GLA and Gnewt from receiving funds for the project in excess of Innovate UK's funding limits under (TSB2/2014) and the General Block Exemption Regulation (Commission Regulation (EU) No 651/2014) ("State Aid Regulations"). Innovate UK will have the right to demand repayment of the grant funding (or any part thereof) from the GLA and Gnewt if the State Aid Regulations are breached; provided that any repayment for the GLA does not exceed the actual grant amount it receives.

8.3 The foregoing sections of this report indicate that:

8.3.1 the decisions requested of the mayor (in accordance with the GLA's Contracts and Funding Code) concern the exercise of the GLA's general powers, falling within the GLA's statutory powers to do such things considered to further or which are facilitative of, conducive or incidental to the promotion of economic development and wealth creation, social development or the promotion of the improvement of the environment in Greater London; and in formulating the proposals in respect of which a decision is sought officers have complied with the GLA's related statutory duties to:

- pay due regard to the principle that there should be equality of opportunity for all people;
- consider how the proposals will promote the improvement of health of persons, health inequalities between persons and to contribute towards the achievement of sustainable development in the United Kingdom; and
- consult with appropriate bodies.

- 8.4 Officers must ensure that appropriate agreements are put in place between and executed by the GLA, Innovate UK, Gnewt and ARUP in connection with the grant funding, collaboration and third party data collation and data analysis support for the project.

9. Planned delivery approach and next steps

Title	Due Date
Conditional Funding offer received from Innovate UK	Jan. 2017
Signed Collaboration agreement in place	Apr. 2017
Vehicle specification completed	April 2017
leasing terms for vehicles agreed and in place	Apr. 2017
Grant funding agreement signed	Apr. 2017
Electric vehicles order placed	Apr. 2017
Baseline data & monitoring data report for diesel vehicles completed	May. 2017
Gnewt Administrator in post	May. 2017
Baseline data uploaded to London data store	May. 2017
GLA Project Manager and Gnewt Administrator in post	May. 2017
Project Implementation Plan	May. 2017
Weekly meetings with manufacturers	May. 2017 Jun. 2017
Smart Charging infrastructure and software installation completed	Jun. 2017
District Network Operator agreement secured (if required)	Jun. 2017
Vehicle build completed and delivered to Gnewt's depot	Oct. 2017
Vehicle livery completed	Oct. 2017
Vehicle testing completed	Nov. 2017
Staff training on new vehicles	Nov. 2017
Data loggers and vehicle telematics installed on vehicle	Nov. 2017
Mayoral press release to launch scheme	Nov. 2017
Social media scheme launch - twitter, facebook, blogs & instagram	Nov. 2017
Issues log & updated risk register	Jun. 2017 Sept. 2017 Dec. 2017 Mar. 2018 Jun. 2018 Sept. 2018 Dec. 2018 Mar. 2019
Steering group meeting	Aug 2017 Dec 2017 Apr 2018 Aug 2018 Dec 2018

Title	Due Date
	Apr 2019
Progress reports to Innovate UK and Mayor's Office	Oct. 2017 Apr. 2018 Oct. 2018
Vehicle demonstration days for Mayor and Innovate UK	Mar. 2018
Smart Cities Barcelona event to network and disseminate findings to date	Nov. 2018 Nov. 2019
Draft Final Report	Feb. 2019
Draft final data monitoring report	Feb. 2019
Final data monitoring and final report	Apr. 2019
Draft final data monitoring report	Apr. 2019
Lessons learnt and key barriers report	Apr. 2019
Lo City event to disseminate findings	May. 2019
Final project conference and networking event to disseminate findings	May. 2019

10. **Appendices and supporting papers:**

- Innovate UK Grant Offer Letter
- Draft Collaboration Agreement
- Acceptance of conditional Offer Form for signature

Public access to information

Information in this form (Part 1) is subject to the Freedom of Information Act 2000 (FOI Act) and will be made available on the GLA website within one working day of approval.

If immediate publication risks compromising the implementation of the decision (for example, to complete a procurement process), it can be deferred until a specific date. Deferral periods should be kept to the shortest length strictly necessary. **Note:** This form (Part 1) will either be published within one working day after approval or on the defer date.

Part 1 Deferral:

Is the publication of Part 1 of this approval to be deferred? NO

If YES, for what reason:

Until what date: (a date is required if deferring)

Part 2 Confidentiality: Only the facts or advice considered to be exempt from disclosure under the FOI Act should be in the separate Part 2 form, together with the legal rationale for non-publication.

Is there a part 2 form –NO

ORIGINATING OFFICER DECLARATION:

Drafting officer to confirm the following (✓)

Drafting officer:

Kizzian Owen has drafted this report in accordance with GLA procedures and confirms the following:

✓

Sponsoring Director:

Fiona Fletcher-Smith has reviewed the request and is satisfied it is correct and consistent with the Mayor's plans and priorities.

✓

Mayoral Adviser:

Shirley Rodrigues has been consulted about the proposal and agrees the recommendations.

✓

Advice:

The Finance and Legal teams have commented on this proposal.

✓

Corporate Investment Board

This decision was agreed by the Corporate Investment Board on 3 April 2017.

EXECUTIVE DIRECTOR, RESOURCES:

I confirm that financial and legal implications have been appropriately considered in the preparation of this report.

Signature

M. D. Alce

Date

3.4.17

CHIEF OF STAFF:

I am satisfied that this is an appropriate request to be submitted to the Mayor

Signature

*Approved by David Bellamy
by email*

Date

4.4.17

