

20 October 2023

Freedom of Information Act request, Environmental Research Group reports for the GLA and TfL, IMPFOI-23-480, Imperial College response

Thank you for your Freedom of Information Act request received on 7 September 2023. The request, initially dated 29 August 2023, which was clarified and refined following an exchange of correspondence, asked the following questions in relation to three reports produced by the Imperial College Environmental Research Group (ERG):

1. Arrangement with TfL / Mayor's Office

- a) How much was Imperial College Environmental Research Group (ERG) paid to prepare the Reports (and what other commercial terms were there)?
- b) What were the Terms of Reference (including the precise instructions for the Reports)
- c) Were any changes made based on GLA input after providing them with any interim or final draft of the Report?
- d) Please provide a copy of the contract and all other key correspondence regarding the commission of the Report
- e) Please provide any and all feedback received from the GLA / TfL / Mayor's Office on any pre-publication drafts of the Report
- f) Has Imperial College ERG received any further paid work (or promises thereof) from TfL / GLA / Mayor's Office since agreeing to undertake this Report

2. Report Methodology Content

- a) To what extent was the deaths calculation based on air pollution from road vehicles rather than any other source of air pollution?
 - i. Was this split between motorcycles, cars, vans and lorries?
- b) Was an appropriate counterfactual used in the calculation (such as the number of increased deaths due to forced London Underground usage with significantly higher air pollution)? If so, please specify.
- c) Was the carbon footprint of vehicle manufacture, distribution, scrappage and disposal taken into account in any of the calculations (and if so, what figures were used)? If so, what figures were used.
- d) Was the fact that all previous UK and London scrappage schemes have resulted in a net increase of cars in circulation taken into account?
- e) What will be the impact of the Expansion on air quality (with reference to relevant metrics) over the next 5 years
- f) Does this outweigh the environmental footprint of the scheme?

The three reports being:

[London Health Burden of Current Air Pollution and Future Health Benefits of Mayoral Air Quality Policies](#) commissioned by TfL and GLA, referred to henceforth as the 'Mayoral Air Quality Policies report'.

[Health Impact Assessment of Current and Past Air Pollution on Asthma in London](#)

commissioned by the GLA, referred to henceforth as the 'Asthma report'.

[Impacts of air pollution across the life course – evidence highlight note](#) commissioned by the GLA, referred to henceforth as 'life course' report.

1. Applicable access to information regime

We have considered what the appropriate access to information regime would be for this request given that the reports themselves contain environmental information. We have concluded that the element of the request that concerns the specific content of the reports and comments thereon, question 1(e) which asks for feedback received on the draft reports, is environmental information within the meaning of regulation 2 (1) of the Environmental Information Regulations (EIR) (2004), while the remainder is not in our view environmental information and is thus subject to the Freedom of Information Act (2000).

2. Arrangement with TfL / Mayor's Office, questions 1 (a), (b) and (d) amount paid, terms of reference and contract documents

Imperial College was paid £45,958 for the Mayoral Air Quality Policies report, £29,241.23 for the Asthma report and £9,990 for the life course report.

The contract documents and terms of reference are attached.

We are refusing the aspect of your request that asks for "all other key correspondence" in reliance on section 12 of the Freedom of Information Act. Section 12 of the Freedom of Information Act provides that organisations need not respond to Freedom of Information Act requests if it would take more than 18 hours to extract and compile the information requested. The process of identifying and compiling all the correspondence for the three projects (one of which was agreed before the ERG joined Imperial College from Kings College London) would be time-consuming. We would then have to review the correspondence for relevance and identify which of the correspondence could be regarded as "key". We estimate that complying with this aspect of your request would, having taken into account the time already spent on preparing the response to this request, exceed 18 hours. The pertinent information about the arrangements with the commissioners are the contracts themselves and terms of reference, which have been provided.

3. Arrangement with TfL / Mayor's Office, question 1 (c) were any changes made based on GLA input after providing them with any interim or final draft of the Report?

As is standard practice, the draft reports were shared with the commissioners prior to publication. This enables confirmation that the agreed objectives had been met and presents an opportunity for clarification and discussion of the presentation of the output. The agreement of the final text is a collaborative process, but the academic team have the final say in ensuring any amendments remain scientifically accurate and represent what was covered in the research study concerned. While amendments were made, none of these represented substantive changes to the reports' findings or conclusions.

4. Arrangement with TfL / Mayor's Office, question 1(e) feedback received on pre-publication drafts of the reports

As explained above, the content of the reports and any feedback on the contents are regarded as environmental information and thus subject to the Environmental Information Regulations. We are refusing to provide copies of the pre-publication feedback in reliance on regulation 12(4)(d) which relates to unfinished documents and regulation 12(5)(f) which applies where disclosure would adversely affect the interests of the person or organisation that supplied the information.

When applying these exemptions, we must consider whether the public interest in maintaining the exception outweighs the public interest in disclosing the information. The public interest in this context means the public good, not what is of interest to members of or groups of the public.

While we recognise that there is a general public interest in the disclosure of environmental information, we are not able to identify any public interest arguments that would favour disclosure of the specific information sought at this part of your request. Disclosure of the feedback on draft versions would add nothing to the public understanding of the environmental issues discussed in the reports.

There is a strong public interest in scientists and commissioning partners having a 'safe space' in which to exchange information in an open and honest manner. This is necessary for science to be translated to policy and for policy-makers and scientists to discuss and clarify understanding. An obligation to disclose discussions on draft documents would inhibit the parties from engaging in a full and frank discussion. In light of the fact that the final published reports are freely available in the public domain and that disclosure of pre-publication versions and feedback received thereon would add nothing to the public understanding of the environmental information discussed in the reports, the College's view is that the public interest in this instance favours withholding the information requested.

5. Arrangement with TfL / Mayor's Office, question 1(f), has Imperial College ERG received further work from the GLA/TfL?

Yes.

6. Report Methodology Content, questions 2 (a) to (f)

Please refer to each of the published reports and the references quoted within them for information about the methodology, scope and factors taken into consideration. None of the reports considered the impact of the 2023 ULEZ expansion to all London boroughs.

Yours,

Freedom of Information Team
Imperial College London

Attachment 1	Mayoral Air Quality Policies report contract and ToR	Pages 4 – 11
Attachment 2	Asthma report contract and ToR	Pages 12 – 29
Attachment 3	Life course report contract and ToR	Pages 30 – 38

SCHEDULE 7B

(Form of Agreement – Short Form)



Schedule 7B

FORM OF AGREEMENT – SHORT FORM

THIS AGREEMENT is made the 31st day of March 2020.

CONTRACT NUMBER: TfL 91312 / Task 80 – Modelling the Mortality Impacts of Mayoral Air Quality Policies

OUTLINE AGREEMENT: 4600004941

SUB CATEGORY/LOT: LOT E1 – Science, Research, Monitoring and Analysis

BETWEEN:

- (1) **Transport for London** whose registered office is at 55 Broadway, London, SW1H 0BD (“**the Employer**” which expression shall include its successors in title and assigns); and
- (2) **King’s College London** a company registered in England and Wales (Company Registration Number RC297 whose registered office is at **Environmental Research Group, King's College London, 150 Stamford Street, London, SE1 9NH** (“**the Consultant**”).

WHEREAS:

This Agreement is made pursuant to a framework agreement between the Parties relating to the provision of TfL 91312 - Health & Safety and Environmental Services dated 13 July 2015 (“**the Framework Agreement**”). The Employer wishes to have provided Consultancy Services as contained in Table 3. The Employer has accepted a proposal (Table 4) by the Consultant for the Services in accordance with the Short Form Conditions of Contract.

NOW IT IS AGREED THAT:

Terms and expressions defined in (or definitions referred to in) the short form conditions of contract have the same meanings herein. The Consultant Provides the Services in accordance with the Short Form Conditions of Contract, Tables and Schedules. The Employer pays the Consultant the amount due in accordance with the short form conditions of contract. The documents forming the contract are:

This Form of Agreement duly executed by the Parties;
Short Form Conditions of Contract;
Table 3, Table 4 and Table 5;
The Schedules

Where there is any discrepancy or conflict within or between the documents forming the contract the order of priority shall be as follows:

First : This Form of Agreement;
Second : Table 5;
Third : Table 3;
Fourth : The Schedules;

Fifth : Short Form Conditions of Contract;
Sixth : Table 4.

1. Notwithstanding the manner of execution of this Agreement it is agreed that:
 - 1.1 the limitation period within which any claim may be brought by the Employer for breach of this Agreement by the Consultant is 6 years from the date of breach; and
 - 1.2 the Consultant agrees not to raise in defence of any such claim a shorter limitation period whether pursuant to the Limitation Act 1980 (as the same may be amended or re-enacted from time to time) or otherwise.

This Agreement has been signed for and on behalf of the Employer and the Consultant the day and year written above.

Signed by

for and on behalf of

The Consultant

Signature

Print name and position

Environmental Research Group,
King's College London

Date:

26th March 2020

Signed by

for and on behalf of

The Employer

Signature

Print name and position

Date: 31 March 2020

Table 3, Employer's Requirement:

Tackling air quality to improve health and reduce health inequalities is a Mayoral priority. To design and implement air quality policies it is important to understand the health impacts of current levels of pollution in London and how policies will benefit health and reduce health inequalities in the future.

TfL and the GLA have previously jointly procured a number of pieces of research to answer this question, including:

1. Understanding the Health Impacts of Air Pollution in London (2015)

And

2. Modelling the long-term health impacts of changing exposure to NO₂ and PM_{2.5} in London (due for publication February 2020).

The pieces of research outlined above answered the questions

1. What is the mortality (deaths) burden of current (2010) levels of air pollution (Kings, 2015 report)

And

2. What is the morbidity (disease) burden and predicted impact of Mayoral air quality policies on morbidity between 2016 and 2050 (Health Lumen, 2020, awaiting publication)

A current knowledge gap is:

3. What is the mortality (deaths) burden of current (2019) levels of air pollution and what is the predicted impact of Mayoral air quality policies on mortality over the lifetime (100 years) of the current population.

This specification is for a piece of research to answer research question (3) above.

Objectives

- To calculate the current mortality burden in the London population attributable exposure to 2019 levels of anthropogenic NO₂ and PM_{2.5}
- To model the change in mortality (deaths avoided) across the population lifetime (100 years) as a result of Mayoral air quality policies in the following 3 scenarios:

1. A baseline scenario in which the 2016 levels of anthropogenic NO₂ and PM_{2.5} are maintained for the duration of the population's lifetime (100 years)
 2. A scenario in which Mayoral policies to address air quality are introduced, including the central London Ultra Low Emission Zone (ULEZ) the London-wide Low Emission Zone for heavy vehicles, the expansion of the ULEZ and additional policies as set out in the London Environment Strategy (LES), and the benefits of the policies are maintained for the duration of the population's lifetime (100 years)
 3. A scenario in which WHO limit levels for PM_{2.5} (10 micrograms) are met in 2030 and remain at that level for the remainder of the population lifetime (100 years)
- To provide outputs at ward and borough level
 - To produce a report that sets out and interprets the findings from the modelling, including a brief introduction and explanation of the purpose of the work and a discussion of how the findings from this project compare with findings in other published research.

SCOPE

General Requirement

The requirement is for analysis and modelling as set out in section (2.2) above, with the results interpreted and presented in a report to which dynamic Excel data output tables are appended.

The provider will be responsible for providing population and health input data.

The commissioner will be responsible for providing London air quality data for each of the three scenarios outlined in section (2.3).

The provider will be responsible for ensuring health impacts are modelled in line with the most recently available methods for which there is scientific consensus, ie those recommended by the Committee on the Medical Effects of Air Pollutants (COMEAP).

Table 4, Consultant's Proposal:

(the Consultant's proposal from Mini-competition)

Table 5, Contract Particulars:

<p>The total cost of the services is fixed at £45,958.00 and shall not exceed this amount.</p> <p>The rates shall remain fixed for the lifetime of the Contract.</p> <p>TfL will not reimburse any additional costs for time, input, resource or other without prior written consent from TfL's Employing manager.</p>
<p>Contract Number: TfL 91312 / Task 80 – Modelling the Mortality Impacts of Mayoral Air Quality Policies</p>
<p>The Contract Commencement Date is: 11/03/2020</p> <p>The Service Commencement Date is: 12/03/2020</p> <p>The Contract Term is: The Contract shall terminate 30th April 2020 with an option to extend for 3 months. (This is subject to internal approval).</p>
<p>In accordance with Clause 7.1 of the Short Form Conditions of Contract, the Employer's Contract Manager is:</p> <p style="text-align: right;">City</p> <p>Planning Transport for London</p> <p>5 Endeavour Square, Westfield Avenue, Stratford, London, E20 1NJ Tel.</p>
<p>In accordance with Clause 7.1 of the Short Form Conditions of Contract, the Employer's Procurement Manager is:</p> <p>14 Pier Walk, Floor 3 Y6, London, SE10 0ES Tel:</p> <p style="text-align: center;"><u>@tfl.gov.uk</u></p>
<p>In accordance with Clause 8.5 of the short form Conditions of Contract, the Consultant's Key Persons are:</p> <p>Email address: Contact Number: _____</p>
<p>Notice period in accordance with Clause 25.4 of the Short Form Conditions of Contract (termination without cause): 14 days</p>
<p>Special Conditions of Contract: The Consultant's total liability to the Employer for all matters arising under or in connection</p>

with this contract, other than the excluded matters shall be limited to £1,000,000.

Invoice/Payment Period: (see Clauses 5.1 and 5.4 of Short Form Conditions of Contract):

Clause 5.1 - The invoice period shall be 4-weekly in arrears.

Clause 5.4 - Payment will be made within 30 days of receipt of invoices.

Consultant must send invoices via email, in pdf format, to:

Invoices@tfl.gov.uk

All invoices must have TfL Contract Reference Number, SAP Purchase Order number, Consultant's name and address, a separate calculation of VAT and a brief description of the Services provided.

Invoices shall be addressed to:

Transport for London
Accounts Payable
14 Pier Walk, North Greenwich, London, SE1 0ES

Appendix 1:

Bidder	King's College London
Grand Total	£45,958.00

Consultant Name					
Project Role	Project Manager (method development, Input data)	Model preparation and coding	Input data preparation and method update	Data processing and reporting	
PSF Grade	Principal consultant	Senior consultant	Consultant	Consultant	
PSF Maximum Day Rate	£738.00	£672.00	£544.00	£544.00	
Proposed Discounted Day Rate	£738.00	£672.00	£544.00	£544.00	
Deliverable Description (Please insert as many deliverables as necessary)	Days	Days	Days	Days	Total
Current 2019 mortality burden (task 1)	5	5	6	5	21
Mortality impact for baseline and scenarios (task 2 and 3)	12	13	12	7	44
Technical draft and final report with dynamic excel data appended (and meetings)	2	2	2	2	8
Total Days	19	20	20	14	73
Discounted Fee Total (£)	£14,022.00	£13,440.00	£10,880.00	£7,616.00	£45,958.00



SCHEDULE 7B

FORM OF AGREEMENT

Call-Off Contract Number: PSF2 94202 -TPIM Task 24 - GLA Asthma Study

Lot B1 - Data Modelling and Monitoring

Outline Agreement: 4600007875

THIS AGREEMENT is made the day of **March 2021**

BETWEEN:

(1) **The GREATER LONDON AUTHORITY (GLA)**, whose registered office is at office is at City Hall, The Queen's Walk, London SE1 2AA ("the *Employer*" which expression shall include its successors in title and assigns); and

(2) **IMPERIAL COLLEGE PROJECTS LIMITED**, a company registered in England and Wales (Company Registration Number 09487272) whose registered office is at The Faculty Building, Level 1 Imperial College London, Exhibition Road, London, SW7 2AZ (the "Consultant").

(3)

WHEREAS:

This Agreement is made pursuant to a framework agreement between the Parties relating to the provision of **TfL PSF2 94202 - Transport Planning & Impact Monitoring Services (including Health & Safety and Environmental Services) dated 25th August 2020** ("the Framework Agreement"). The Employer wishes to have provided Consultancy Services as contained in Table 3 **Attachment 1**. The Employer has accepted a proposal (Table 4) by the Consultant for the Services in accordance with the Short Form conditions of contract (as defined in the Framework).

NOW IT IS AGREED THAT:

Terms and expressions defined in (or definitions referred to in) the short form conditions of contract have the same meanings herein. The Consultant Provides the Services in accordance with the Short Form Conditions of Contract, Tables and Schedules. The Employer pays the Consultant the amount due in accordance with the short form conditions of contract. The documents forming the contract are:

This Form of Agreement duly executed by the Parties;
Short Form Conditions of Contract;

Table 3, Table 4 and Table 5;
The Schedules.



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Sixth	:	Table 4.

1. Notwithstanding the manner of execution of this Agreement it is agreed that:
 - 1.1 the limitation period within which any claim may be brought by the Employer for breach of this Agreement by the Consultant is 6 years from the date of breach; and
 - 1.2 the Consultant agrees not to raise in defence of any such claim a shorter limitation period whether pursuant to the Limitation Act 1980 (as the same may be amended or re-enacted from time to time) or otherwise.



This Agreement has been signed for and on behalf of the Employer and the Consultant the day and year written above.

Signed by

for and on behalf of

The Employer

The GREATER LONDON AUTHORITY (GLA

Signature

Print name and position

Date:

Signed by

for and on behalf of

The Consultant

IMPERIAL COLLEGE PROJECTS LIMITED

Signature

Print name and position

Date:

Contracts Manager

19-Mar-2021



Table 3, Employer's Requirement:



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Greater London Authority

Asthma Study update

1. Introduction

- 1.1. The Greater London Authority (“GLA”) is a unique form of strategic citywide government for London. It was created by the Greater London Authority Act 1999 and came into being in Summer 2000. It is made up of a directly elected Mayor – the Mayor of London, and a separately elected Assembly – the London Assembly.
- 1.2. The Mayor is the executive of London’s government. He works closely with and sets budgets for:-
 - a. The GLA
 - b. Transport for London (TfL)
 - c. The Metropolitan Police Authority (MPA)
 - d. The London Fire & Emergency Planning Authority (LFEPA).
- 1.3. The Mayor also works closely with London’s borough councils, who are responsible for providing many local services, to ensure that local and Londonwide policies work together for maximum effect.
- 1.4. The Assembly scrutinises the Mayor’s activities, questioning the Mayor about his decisions. The Assembly is able to investigate other issues of importance to Londoners and make proposals to the Mayor. The London Assembly is made up of twenty-five members, currently comprising twelve Labour, eight Conservative, two Green Party, two Brexit Alliance and one Liberal Democrat.
- 1.5. As a regional authority the GLA has many of the usual Local Government powers and constraints, and also has to comply with its own, under the 1999 Act.

2. Scope

- 2.1. The aim of this study is to investigate the relationship between asthma admissions and air pollution in London based on latest air quality modelling data.
- 2.2. The purpose of this report is to update the previous “Health impact assessment of air pollution on asthma in London” in light of the updated London Atmospheric Emissions Inventory (LAEI).

Background to the requirement

- 2.3. In 2019 the GLA published the “Health impact assessment of air pollution on asthma in London.”
- 2.4. The report provided a modelled estimate of the impact of air pollution in London on asthma admissions. The report used the London Atmospheric Emissions Inventory 2016 (LAEI 2016) for air pollution concentrations.

- 2.5. The LAEI will soon be updated to a base year of 2019. The LAEI 2019 includes improvements to air quality in London due to policies like the ULEZ.
- 2.6. The purpose of this study is to compare modelled outcomes in 2019 and 2016 to understand the likely impact on health of improvements made to air quality in London over this time.
- 2.7. In December 2020 the inquest into the death of Ella Roberta Adoo Kissi-Debrah found that “Air pollution was a significant contributory factor to both the induction and exacerbations of her asthma”. This was the first time that air pollution has been formally recorded as contributory cause of death in the UK.
- 2.8. Although Ella’s asthma was particularly severe the inquest has served to highlight the severity of the health risks posed by asthma and the importance of the relationship between air pollution and asthma. In this context it is important to review and understand what effect improvements to ambient air quality in recent years are likely to have had on exposure and associated health impacts.

3. Project Requirements

- 3.1. Improving London’s poor air quality is a key part of the London Environment Strategy and the Mayor’s Transport Strategy.
- 3.2. Detailed understanding of the relationship between exposure to poor air quality and impacts on health is vital to ensuring that policy interventions designed to reduce air pollution are correctly targeted to maximise the health benefits.
- 3.3. It is particularly important as improvements are made to London’s air quality to revisit and update previous assessments like the 2019 asthma study to understand the impacts of change achieved by the Mayor’s policies.
- 3.4. The GLA will provide access to the updated LAEI, but the health and other data will need to be provided by the consultants.
- 3.5. The asthma admissions data should cover 3 years up to 2019.
- 3.6. The project will require selection of an appropriate set of concentration-response functions for different pollutants/age groups and asthma admissions. This may require updated meta-analyses depending on whether or not new studies are available and whether or not the volume of new studies is feasible to analyse within the time available.

4. Deliverables

- 4.1. Updated impact assessment of air pollution on asthma in London.
 - Task 4.1.a: Undertake a scoping exercise and recommend whether to update the Concentration Response Functions.

Task 4.1.b: [If required] develop updated CRFs

Task 4.1.c: Produce a report setting out the modelled impacts of air pollution on asthma admissions in London in 2019

Task 4.1.d: Produce a report setting out the key changes between the results of this study and the previous study undertaken in 2019.
undertaken in 2019.



Table 4, Consultants Proposal:



AsthmaStudy_Prop
osal_Final_15032021

Imperial College
London
Projects

Environmental
Research Group

A young girl with dark skin and braided hair is shown in profile, using a white inhaler. She is wearing a light blue t-shirt. The background is a blurred green, suggesting an outdoor setting. The image is the main visual element of the cover.

IMPACT OF AIR POLLUTION ON ASTHMA IN LONDON

Proposal for [REDACTED] - Greater London Authority by:

[REDACTED]
Environmental Research Group, Imperial College London

Background

In 2015, the Greater London Authority (GLA) commissioned the Environmental Research Group (previously at King's College London (King's)) to produce a health and economic impact assessment associated with air pollution levels in London (Walton et al., 2015).

Following this report, the GLA asked the team to investigate the size of the link between asthma and air pollution in London. Reference was made to a health impact assessment study in New York (New York City Health, 2013) as an indication of the type of report that the GLA would find useful. It is accepted that air pollution is linked to exacerbation of asthma¹ (COMEAP, 1995; WHO, 2013; US EPA 2009, 2013, 2016) with a bit more debate on causation (COMEAP, 2010).

This investigation for the GLA was published in 2019 (Walton et al 2019) and used the London Atmospheric Emissions Inventory 2016 (LAEI 2016) for air pollution concentrations.

The LAEI will soon be updated to a base year of 2019. The GLA would now like to use the LAEI 2019 which includes improvements to air quality in London due to policies like the Ultra Low Emission Zone (ULEZ).

Method

The Imperial College London team propose to produce a Health Impact Assessment (HIA) of air pollution on asthma admissions in London including (1) Overview of available concentration-response functions (2) Scoping for rapid update of concentration-response functions (3) Sourcing of asthma data (4) Derivation of baseline rates (5) Use of air pollution concentrations for NO₂ and PM_{2.5} (6) Health impact calculations and (7) Mapping of impacts, if possible².

Concentration-response functions (CRF)

A variety of endpoints could be used to provide an indication of the effect of air pollution on asthma in London. The most straightforward is the effect of air pollution on hospital admissions for asthma in children, as there are many time-series studies available and hospital admissions data are available as routine statistics. Generally, for HIA we use specific recommendations from COMEAP or WHO where possible. If not, concentration-response functions could be used from pooled analyses of several studies, or from key large multi-city studies. We tend not to use single studies or only as sensitivity analyses. There are no recommended concentration-response functions for air pollution and asthma hospital admissions from COMEAP or WHO (although COMEAP plans to look at this issue).

Nonetheless, there are concentration-response functions for **asthma admissions in children**, in the literature e.g. meta-analyses of studies up to 2011 (Atkinson et al 2014; Mills et al 2015, 2016; Walton et al 2014) and we updated these in our 2019 report (Walton, 2019). We will do a rapid update to check for more recent meta-analyses or major multi-city studies. Time may be insufficient for a full updated review, but we will check for the number of new original studies and update the meta-analysis if the size of the task is appropriate for the time available. We estimate that up to 100 studies in the initial search (which is likely to sift down to 5-10 new studies) is around the upper limit. We will schedule a project meeting to discuss this with the GLA once the initial search is done. We will then propose appropriate concentration-response functions³.

There are rather few studies of **asthma admissions in adults** such that meta-analytical summary estimates are not often obviously available⁴. Walton et al (2019) meta-analysed results for asthma admissions in adults.

¹ The clearest evidence is for sulphur dioxide and bronchoconstriction in human volunteer studies – an effect found at much lower concentrations in asthmatics compared with the general population (Johns et al, 2010) but sulphur dioxide concentrations are low.

² This depends on the underlying baseline data. For example, checking the spatial distribution can reveal potential reporting inaccuracies, or small numbers in some location may mean results are based on suppressed data, which can cause uncertainty.

³ If lower confidence intervals are only just negative and the majority of the range across confidence intervals is positive, we would still use the relationship with appropriate commentary.

⁴ Walton et al 2014 meta-analysed studies of ozone and asthma admissions in adults, this was not done for PM_{2.5} or NO₂.

As for asthma admissions in children, it will be checked whether any new studies have been published. There are likely to be fewer new studies for asthma admissions in adults than in children.

Diagnosis of **asthma exacerbations in the elderly** is complicated by overlap with chronic obstructive pulmonary disease (COPD) which develops at older ages. Asthma is therefore not considered separately in studies in the elderly but combined with COPD. Different studies take different approaches with some studies simply excluding asthma in the elderly entirely. We will use the concentration-response functions from our previous work (Walton et al 2019) unless it needs to be updated. Again, the number of new studies is likely to be less than for asthma admissions in children.

In our previous report (Walton et al 2019), we gave an overview of summary evidence on endpoints other than hospital admissions (**A&E attendances, asthma symptoms, asthma prevalence**) in an Annex. We will check the Annex and amend if there is any major shift in the evidence, but a full review is outside the scope of this work.

Baseline rates for asthma admissions

Hospital episode statistics (HES)⁵ only provides asthma admissions for England as a whole (all asthma admissions by age) and only provides information on emergency asthma admissions for all ages. What we require for the calculations is, ideally, **emergency hospital admissions for asthma (ICD10 code J45 or the A&E code equivalent), by broad age group (0-14 and 15-64) by ward in London**. We will collaborate with the Small Area Health Statistics Unit (SAHSU) at Imperial College London as we did for the last project. SAHSU holds extensive routinely collected health databases⁶ including HES which would allow the flexibility to aggregate to various geographical levels (e.g. wards, London Boroughs), providing the un-identifiability of patient data is ensured⁷. Similar points would apply for calculations in the **elderly (65+) for combined COPD and asthma admissions**. We will deal with possible small numbers at Ward level by summing data over a 3-year period.

Air Quality data

Imperial's team will use the most up-to-date air quality data available in London at the time, the coming air quality data in 2019 (from LAEI2019). If CRFs are confirmed to be available for ozone and the metric defined, we will discuss ozone modelling with the GLA as this is not currently modelled formally as part of the LAEI.

Health Impact Calculations

Calculations for hospital admissions⁸, as a result of current concentrations as above, would follow the methods in Walton et al 2019. In addition, calculations would be done for smaller geographical areas to facilitate mapping of health outcomes. The exact choice of scale (probably ward or local authority) will be determined as part of the project. Advice on addition or not across pollutants will be provided. Valuation of the impacts in monetary terms could be provided as an optional addition.

Comparison with previous work

To aid interpretation of the updated results we will include commentary on the influence of the updated inputs on the outputs of the calculations. In addition to changes in air pollutant concentrations, the baseline rates of asthma admissions and population data will be updated and, possibly, the concentration-response functions as well. While these will all affect the updated results, the relative influence of the different inputs can be discussed with reference to the inputs to the calculations in the 2019 report.

Mapping

⁵ <https://digital.nhs.uk/data-and-information/publications/statistical/hospital-admitted-patient-care-activity/2018-19>

⁶ <https://www.sahsu.org/>

⁷ Note SAHSU has robust mechanisms in place to ensure the un-identifiability of patient data is ensured and would follow the standard SAHSU approval process and security standards.

⁸ It is clear that there are more hospital admissions on high air pollution days, but it is unknown whether these would not have occurred without the high air pollution day or whether they just occurred at an earlier time.

We will map the results by ward where possible. There is some uncertainty to this, given that, in the baseline data, some wards may have small numbers that need to be suppressed to avoid risk of individual identification. This is discussed in Walton et al (2019). We will assess the situation with the updated data and give the level of uncertainty accordingly. This may affect the degree to which the maps are emphasized in the report, after discussion at a project meeting.

Output

A complete methodology and results report including mapping of health outcomes of air pollution on asthma for each pollutant by ward in London.

Timescales

The team from Imperial could start this study as soon as the client commissions the work. SAHSU at Imperial will extract asthma data early in the project. The Imperial team will deliver by the end of August.

References

Atkinson, R. W., S. Kang, H. R. Anderson, I. C. Mills and H. A. Walton (2014). "Epidemiological time series studies of PM_{2.5} and daily mortality and hospital admissions: a systematic review and meta-analysis." *Thorax* 69(7): 660-665.

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Mills, I. C., R. W. Atkinson, S. Kang, H. Walton and H. R. Anderson (2015). "Quantitative systematic review of the associations between short-term exposure to nitrogen dioxide and mortality and hospital admissions." *BMJ Open* 5(5): e006946.

New York City Health, 2013. *Air Pollution and the Health of New Yorkers: The Impact of Fine Particles and Ozone*. <https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf>. (Accessed 15 October 2018).

US Environmental Protection Agency Integrated Science Assessments for Nitrogen Dioxide (Health Criteria) (2016); Ozone and Related Photochemical Oxidants (2013) and Particulate Matter (2009) Available via <https://www.epa.gov/isa>

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Walton H, Dajnak D, Beevers SD, Williams ML, Watkiss P, Hunt A, *Understanding the Health Impacts of Air Pollution in London*, King's College London 2015. Available at: https://www.london.gov.uk/sites/default/files/hia_in_london_kingsreport_14072015_final.pdf. (Accessed 1 October 2018).

Walton, H., Dajnak, D., Evangelopoulos, D., Fecht, D. (2019) *Health Impact Assessment Of Air Pollution On Asthma In London*, King's College London 2019. Available at: <http://erg.ic.ac.uk/research/home/projects/air-pollution-and-asthma-admissions-in-London.html>. (Accessed 1 March 2021).

WHO (2013) 'Health Risks of Air Pollution in Europe HRAPIE project. Recommendations for concentration-response functions for cost-benefit analysis of particulate matter, ozone and nitrogen dioxide.' <http://www.euro.who.int/en/health-topics/environment-and-health/air-quality/publications/2013/health-risks-of-air-pollution-in-europe-hrapie-project-recommendations-for-concentration-response-functions-for-cost-benefit-analysis-of-particulate-matter-ozone-and-nitrogen-dioxide>. (Accessed 15 October 2018).

Imperial College
London

Projects

Environmental
Research Group

Contact us:

[Redacted]
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Email: [Redacted]@imperial.ac.uk

Imperial Projects is a wholly owned company of Imperial College London

Pricing Schedule
TPIM Task 24 - GLA Asthma Study

Company Name: Imperial College Projects Limited (IPROJ)
 Company Address: Environmental Research Group, School of Public Health
 Imperial College London
 Sir Michael Uren Biomedical Engineering Hub
 White City Campus
 90 Wood Lane
 London, W12 0BZ
 Company Registered Address: Imperial College Projects Limited
 Faculty Building
 Exhibition Road
 London SW7 2AZ
 Company Registration Number: 08487272
 Bid Manager Name:
 Tel.
 Email address:

Consultant Name						
Project Role	AQ modelling	Principal Investigator/ health impacts	Health impacts	Baseline data	Administration manager	
Category/Lot						
PSF Grade	Senior Consultant	Principal Consultant	Junior Consultant	Senior Consultant	Junior consultant	
Maximum Day Rate	£572.00	£739.00	£409.00	£572.00	£409.00	
Proposed Discounted Day Rate (Apply to the Call Off)	£655.20	£719.55	£397.80	£655.20	£397.80	
Deliverables	Deliverable Description	Days	Days	Days	Days	Days
1	Processing of 2019 modelled data to Ware concentrations	3				3
2	Obtaining and routing baseline rates for asthma admissions	2		3	1	6
3	Scoping to update meta-analysis and updating if minor task		3.5	5		8.5
4	Health impact calculations	5.5	5			10.5
5	Completion of report	6	7	5	1	19
6	Administration				2	2
						0
	Total Days	16.5	16.5	13	2	2
	Total Maximum Fee (£)	£11,088.00	£11,439.00	£5,304.00	£1,344.00	£816.00
	Total Fixed Discounted Fee (£)	£10,810.80	£11,153.03	£5,171.40	£1,310.40	£795.60
						£ 29,241.23

All pricing is based on 8 hours per day and should be inclusive of travel and subsistence charges, no other costs will be paid by TFL.

Please Note a negative response to questions 1b) & 2 will result in your tender being rejected)	Pass / Fail
1. A.1) Are any of the individuals providing their services via a personal service company (i.e. typically a limited company with 1 or 2 directors and where some of the individuals providing the services hold more than 5% share in the company) or via a partnership (typically where the individual providing the services is a partner, and is entitled (alone or with one or more relatives) to 50% or more of the profits? NO	Pass / Fail
A.2) Do you have less than 20 employees? NO	1. B) Yes = Pass No = Fail
B) If you have answered YES to both 1 A.1 and 1 A.2), please confirm that should you be awarded the contract to deliver this requirement you agree to undertake an employment status assessment and to accept the GLA's decision to alter the engagement route if the arrangement falls within IR35 Intermediaries Legislation. N/A	
2. Please confirm that should you engage personal service companies or partnerships to deliver the Services you are expressing an interest in, you will inform GLA that this is the case and co-operate with GLA in relation to any questions raised to identify whether the Intermediaries Legislation applies; and if GLA confirms that it does, you will make all relevant deductions in accordance with Chapter 10 Part 2 ITEPA 2003. YES	



Table 5, Contract Particulars:

<p>Contract Number: PSF2 94202 -TPIM Task 24 - GLA Asthma Study</p>
<p>The total fixed value of the Contract including any possible extension shall not exceed £ 29,241.23.</p>
<p>The Contract Commencement Date is: 22nd March 2021 The Service Commencement Date is: 22nd March 2021 The Term is: 6 months The Employer has an option, exercisable at its sole discretion, to extend the duration of the Contract for a further 3 months. Any extension will be at the Employer's sole discretion and subject to the appointed Consultant's satisfactory performance.</p>
<p>In accordance with Clause 7.1 of the Short Form Conditions of Contract, the Employer's Contract Manager is: Name: Address: City Hall, 1 The Queen's Walk, London SE1 2AA E-mail: [REDACTED]@london.gov.uk</p>
<p>In accordance with Clause 7.1 of the Short Form Conditions of Contract, the Employer's Procurement Manager is: Name: [REDACTED] Transport for London Address: 14 Pier Walk, London, SE10 0ES E-mail: [REDACTED]@tfl.gov.uk</p>
<p>In accordance with Clause 8.5 of the short form Conditions of Contract, the Consultant's Key Persons are: Name: [REDACTED] Address: Sir Michael Uren Biomedical Engineering Hub, White City Campus, 80 Wood Lane, London, W12 0BZ Tel. [REDACTED] Email address [REDACTED]@imperial.ac.uk</p>
<p>Notice period in accordance with Clause 25.4 of the Short Form Conditions of Contract (termination without cause): 7 Calendar days</p>
<p>Special Conditions of Contract: Appendix 1 GDPR Regulation apply The framework agreement and Call Off Contract Terms and Conditions apply. Insurance and Liability:</p> <ul style="list-style-type: none"> • Employer's (Compulsory) Liability Insurance = £5,000,000 (per claim) • Public Liability Insurance = £5,000,000 (per claim) • Professional Indemnity Insurance = £2,000,000 (aggregate per annum)



• The Consultant's total liability to the Employer for all matters arising under or in connection with this contract, other than the excluded matters shall be limited to £1,000,000

The Consultant shall keep the data used for six months after the end of the project in case there are problems or questions after the end of the project. The data must remain secure in line with their normal practices.

Payment Period: (see Clauses 5.1 and 5.4 of Short Form Conditions of Contract)

Clause 5.1

[insert alternative period as required]

Where no alternative is listed, the payment period shall be 4-weekly

The payment shall be made to the Consultant following the satisfactory completion of the services delivery.

Payment shall be made to the Consultant upon completion of each milestone agreed, in writing, at the inception meeting. Prior to submitting invoices, the Consultant must ensure that each milestone has been agreed as satisfactory completed and signed by the Employer Call Off Contract Manager. Submitted invoices must clearly state the breakdown of all charges for the completed milestone.

Clause 5.4

[insert alternative (shorter*) period]

Where no alternative is listed, payment must be made within 30 days of receipt of invoices.

* the period cannot exceed 30 days

Address where invoices shall be sent:

Greater London Authority

Accounts Payable

14 Pier Walk

North Greenwich

London

SE1 0ES

Electronic format for delivery of invoices by the Consultant:

invoices@tfl.gov.uk

All invoices must have Contract Reference Number, SAP Purchase Order number, Consultant's name and address, a separate calculation of VAT and a brief description of the Services provided.

Other:

The Consultant warrants that no pre-existing materials shall be incorporated in the Products and the Products shall be provided in a standalone format fully useable and exploitable by the Employer without the Employer's use of or access to any pre-existing materials

**Impacts of air pollution across the life course –
evidence highlight note**

Proposal prepared for:

Transport for London / Greater London Authority

Environmental Research Group, Imperial College London

Impacts of air pollution across the life course – evidence highlight note

Contacts

- GLA
[@london.gov.uk](mailto:gl@london.gov.uk)
- Imperial College London (ERG)
[@imperial.ac.uk](mailto:ic@imperial.ac.uk)
[@imperial.ac.uk](mailto:ic@imperial.ac.uk)
[@imperial.ac.uk](mailto:ic@imperial.ac.uk)

Background

There is increasing evidence of the impacts of air pollution through the life course. Individual studies are providing evidence of harm from before we are born into our old age.

The project will deliver a short, written report synthesising the established and emerging evidence.

Proposed description of work

Work will be undertaken by _____ . It will involve:

Topic: impacts of air pollution through your life, synthesising what is known about impacts across the life course to provide an accessible overall view.

Concept / output: a short written piece along the lines of a Parliament POST note, so around 6 pages expected.

Areas the piece will cover:

- . Pregnancy / pre-term outcomes, where the latest evidence now shows particulate air pollution in unborn babies
- . outcomes at birth, including birth weight, size for gestational age etc.
- . early development and impacts in children, including GLA-commissioned health impacts for air pollution and asthma
 - o some data would be included here from studies measuring concentrations using backpacks. Those studies show the concentrations that children are exposed to on main roads when walking to school or when being driven to school vs the lower concentrations for children that travel on quieter roads. This will help with wider narrative in the piece on the importance of taking action to potentially reduce future health impacts, referencing existing measures.
- . adolescence, including last week's story on air pollution and blood pressure in teenagers
- . outcomes in adults and the elderly, such as the latest evidence on dementia, lung cancer in non-smokers
- . historical adverse health effects captured in UK cohort studies.
- . The piece will include citation of evidence from London-based studies and those carried out in comparable cities.

Costs

Total cost for the work £9,990.00 +VAT

The work will be delivered by 31 March 2023.

If you would like to go ahead with this work, please sign and return the Firm Price Agreement.

Terms and conditions

Full terms and conditions are detailed in the Firm Price Agreement.

Feedback and suggestions on the proposed activities prior to acceptance of this quote is welcome.

We look forward to working with you on this exciting and important work.

Imperial College London

Projects

Imperial College Projects
Limited (IPROJ)
2nd Floor, 58 Prince's Gate
South Kensington
London SW7 2PG, UK

Company Registration
Number: 9487272

IPROJ ref: MT-317

Customer Name and Address ('The Customer')

**Greater London Authority
The Queens Walk
London
SE1 2AA**

14 February 2023

FIRM PRICE AGREEMENT

Further to recent discussions with _____, IPROJ, a wholly owned subsidiary of Imperial College London hereby offers to provide the expert services of the Environmental Research Group (ERG), Imperial College London to undertake work, as part of the London Air Quality Network programme ('the Work') indicated in the Schedule below ('the Schedule'), and/or in any document(s) specified in the Schedule for the Customer.

IPROJ shall provide services through its ERG experts, as detailed in the Services Schedule A, from 01 January 2023 to 31 March 2023 for the following price:

	Total
Rapid review of health and air pollution evidence	£9,990.00

The price quoted is in Sterling excluding VAT with payment Schedule in Schedule B.

The Customer may accept this offer by returning a signed and dated copy of this document (including invoicing address, purchase order number and VAT number where applicable) to _____ at the above address or email at _____@imperial.ac.uk. The Customer's acceptance of this offer shall be subject to the Conditions overleaf.

CONDITIONS

LAW & JURISDICTION	1	This Agreement shall be governed by the Laws of England and Wales and the Parties submit to the exclusive jurisdiction of the English Courts.
PAYMENT	2	The Customer shall pay in Sterling the charges made by IPROJ in respect of the Work within thirty (30) days of the submission of any invoice by IPROJ.
INFORMATION	3	Unless specified to the contrary in Schedule A, all relevant information resulting from the Work shall be described in a written report which shall be sent to the Customer or on-line data file. Subject to Clauses 6 and 9 hereof, the Customer shall have the right to use such information for publication of a report or may publish it on their website.
	4	Pre-existing Information or information generated outside the Work (Background IPR) available at the disposal of ERG which is necessary for the Customer to implement the results of the Work will be made available which shall be subject to separate prior agreement of written terms.
SPECIFIC BEST PRACTICE DATA & INFORMATION	5	Notwithstanding any other limitation or exclusion expressed elsewhere in this Agreement specific data, information, calibration reports and similar evidence arising from monitoring of quality control and equipment maintenance checks may be shared by IPROJ with other London Air Quality Network members as best practice.
RIGHTS	6	Subject to any pre-existing rights of the Customer, IPROJ and the rights of any third party, the parties agree that: i) Subject to Clause 3, all Intellectual Property Rights arising from the Work (Arising IPR) will vest in IPROJ as sole beneficial owner, unless specified to the contrary as a separate option under Deliverables in Schedule A; ii) IPROJ will be fully entitled to use in any way it deems fit any skills, techniques, concepts or know-how acquired, developed or used in the course of performing the Work and any improvements to IPROJ's products and/or services made or developed during the course of the Work.
WARRANTY	7	IPROJ makes no warranty or representation that the use of any information arising from the Work will not infringe the rights of third parties but, if IPROJ staff whilst engaged on the Work become aware of any apparent infringement, IPROJ will inform the Customer. IPROJ provides the Work on a strictly as-is basis and excludes all implied warranties to the fullest extent permitted by law.
LIABILITY	8 (a)	IPROJ shall be liable for any loss or damage suffered by the Customer only insofar as such loss or damage is directly attributable to negligent acts or omissions of ERG's employees or agents in the performance of the Work. IPROJ insurance is the same as that of Imperial College London which can be produced on request.
	8 (b)	IPROJ accepts no responsibility for the use made of any information, materials or equipment arising from the Work either by the Customer or by any third party who has obtained any of the said information, materials or equipment directly or indirectly from the Customer,
	8 (c)	IPROJ's total liability to the Customer under this Clause shall be limited to the total payment payable under this Agreement. IPROJ's liability will not extend to any indirect incidental or consequential damages or losses including (without limitation) loss of profits, loss of business, loss of anticipated savings or any special, indirect, consequential or pure economic loss, costs, damages, charges or expenses arising under or in connection with this Agreement.
PUBLICITY	9	Either party shall have the right to make reference to the Work in press releases, promotional materials or research papers with prior consent of the other. Such consent shall not be unreasonably withheld. Neither party shall publicly use, or authorise the public use of, the other party's name, logo or other identifying mark, or the names of the other party's personnel, in any press release, advertisement or similar document, or for any similar purpose, without the other party's prior written consent. This Clause shall also apply to the Customer's use of the names and logos of Imperial College London (the "College"), the College's internal departments and the College's personnel.
CONFIDENTIALITY	10 (a)	Subject to the provisions of Clauses 4, 5 and 6 hereof, each party shall take all reasonable measures to keep confidential for the period of seven (7) years next following the date of acceptance of this offer, all information which is received from the other party under this Agreement and which is specified by the disclosing party to be confidential at the time of disclosure, or which may come to one party's knowledge or is disclosed to it as a result of visiting the premises of the other party.
	10 (b)	This obligation shall not apply to information which either at the time of disclosure, or after disclosure, is published or generally available to the public other than through a breach hereof, of information already in the receiving party's possession at the time of receipt and which was not acquired directly or indirectly from the disclosing party, or information acquired by the receiving party in good faith from a third party or information which has been developed by or for the receiving party at any time independently of the information disclosed to it by the disclosing party.

CUSTOMER SAMPLES, INFORMATION, PREMISES	11	As soon as practicable after acceptance of this offer, the Customer shall arrange, free of charge and risk to ERG, the access for ERG and any subcontractor to the facilities and equipment, the delivery to ERG of any samples, equipment, materials and/or information required by ERG to carry out the Work. On completion of the Work, the said samples, equipment and/or materials shall be treated as detailed in the Schedule or, if no provision is made in the Schedule, the said samples, equipment and/or materials shall be retained by ERG for a period of two (2) months next following the completion of the Work, during which time the Customer shall make arrangements for their collection. Should the Customer not make such arrangements, ERG shall be entitled to dispose of the said samples, equipment and/or materials. The Customer warrants that it has the right to provide access to the facilities and equipment required for the purpose of the Work. The Customer shall ensure that all materials and items of equipment which are to be supplied by the Customer for the purpose of the Work shall be provided in good working order and in accordance with safety standards required under current legislation. The facilities, and equipment shall remain at the Customer's risk.
CUSTOMER'S ORDER	12	Unless specifically agreed otherwise in writing by the Customer and IPROJ, the terms contained in any purchase order or any other form of contract document issued by the Customer to IPROJ shall not apply in any way whatsoever to the performance of the Work except for the purposes of specifying the Customer's contract reference number(s) and the Customer's relevant invoicing address(es).
DISCLOSURE	13	The Customer may disclose information contained in ERG's report only in accordance with the instructions contained therein.
ENTIRE AGREEMENT/ CUSTOMER ACCEPTANCE	14	This Agreement shall come in force when it is signed by both Parties. This Agreement including its schedules constitutes the entire agreement between the Parties and supersedes all previous understandings, commitments or agreements relating to the Work. Additions or changes to the Agreement will only be binding upon the Parties where they are agreed in writing by authorised representatives on behalf of each Party. For the avoidance of doubt the terms of this Agreement shall take precedence over the terms of any Purchase Order/s or invoice terms for this Agreement.
ASSIGNMENT	15	ERG will be fully entitled to assign or novate this Agreement to any other Division or School within Imperial College London.
SUBCONTRACT	16	IPROJ may sub-contract this Agreement or any part of it to a subcontractor, in order to enable IPROJ to provide the Work to the Customer.
FORCE MAJEURE	17	Neither Party shall be in breach of this Agreement if it is prevented from or delayed in performing the Work by any cause or circumstance beyond the relevant Party's reasonable control ("Force Majeure"). A Party wishing to rely on an event of Force Majeure shall promptly and in any event within seven (7) calendar days of becoming aware of the same give written notice to the other Party of the nature of the event of Force Majeure. Following notification to the other Party the Parties will negotiate and may mutually agree in writing to pursue one of the following courses of action: a) the Parties will cease requiring performance of their contractual obligations for a mutually agreed time period or for the duration of the relevant circumstances whereupon this Agreement may be re-instated on the same or different terms. Should different terms be agreed on re-instatement of this Agreement the superseding terms will be set out in writing; or b) the duration will be extended by a mutually agreed time period sufficient to take account of the relevant circumstances and to allow for the resulting delay, and the defaulting Party will be granted an extension in which to remedy the default ("the Extension Period"). The Extension Period and any other amending terms agreed between the Parties will be set out in writing. Should provision of the Work still not be possible following the Extension Period, at the option of the non-defaulting Party, this Agreement may be automatically terminated without the non-defaulting Party incurring liability except for those in respect of payment of Fees and charges against the Price plus, expenses and unavoidable commitments entered into on behalf of the Work by ERG and accrued rights, remedies and obligations, as set out in clause 18 (Termination).
PERSONAL DATA	18	The Parties shall at all times comply with all applicable laws, regulations, codes and sanctions including, but not limited to, the Data Protection Act 1998, the Bribery Act 2010, and the General Data Protection Regulation 2016/679 ("GDPR"), including such UK legislation as has been or is hereinafter enacted to reflect the provisions of GDPR in the event of the United Kingdom's withdrawal from the European Union. The Parties agree that if either Party takes on the role of "Controller" or "Processor" as defined in GDPR for the purposes of delivering the Services hereunder a further written agreement will be required, and that in such event they shall take all reasonably necessary steps to formalise and execute such further agreement.
TERMINATION	19	Either Party may terminate this Agreement on one (1) week's written notice to the other Party prior to the commencement of the Work. Where the Customer terminates this Agreement with less than one (1) week's notice the Customer will be liable to pay 50% of the Price for this late cancellation. Where the Customer terminates this Agreement early i.e. after the commencement date but before the completion date, through no fault of ERG, the Customer will pay IPROJ for all Work completed and expenses incurred up to the date of Termination and any unavoidable commitments entered into by ERG on behalf of the Work, whether due to be settled by IPROJ before or after the date of Termination. Either Party may terminate this Agreement forthwith by written notice given to the other Party if (i) the Key Personnel in ERG becomes unable or unavailable to provide the Work due to reasons beyond its control; (ii) the other Party is either (i) a company, and the company passes a resolution or the court makes an order that it should be wound up or that an administrator be appointed, or makes a composition or an arrangement with its creditors, or if a receiver or manager or administrator on behalf of a creditor is appointed, or if circumstances arise which entitle the court or a creditor to appoint a receiver, manager or administrator or which entitles the court to make a winding up order; or, (ii) is an individual or a

partnership which at any time becomes bankrupt, or has a receiving order made against him or her or makes any composition or arrangement with or for the benefit of his or her creditors, or purports to do so.

Termination shall not affect the accrued rights, remedies, obligations and liabilities of the parties as at Termination, including the right to claim damages in respect of any breach of the Agreement which existed at or before the date of Termination, and clauses which expressly or by implication have effect after Termination shall continue in full force and effect notwithstanding Termination.

SCHEDULE A: SERVICES

Description of Work (Services):

Rapid review of health and air pollution evidence

Deliverables/Outputs:

Report

Milestones:

Delivery on 31 March 2023.

Imperial Key Personnel:

Name	Email
	@imperial.ac.uk
	@imperial.ac.uk
	@imperial.ac.uk

Project Dates: 01 January 2023 to 31 March 2023

SCHEDULE B: PRICE AND PAYMENT TERMS

Price: £9,990.00 plus VAT

Payment Schedule:

Please make payment in full on completion of Services

Signatures on the following page

AUTHORISATION

Signed on behalf of IPROJ

Position

Project Manager

Name (print) _____

Date 14 February 2023

Tel/Fax _____

Signed

Position

Greater London Authority

Name (print) _____

Date 16 / 03 / 2023

Tel/Fax _____