

GREATER LONDON AUTHORITY

REQUEST FOR DIRECTOR DECISION – DD2184

Title: London Building Stock Model

Executive Summary:

The Mayor is committed to tackling fuel poverty and improving the energy efficiency of London's homes. In his draft Fuel Poverty Action Plan, he therefore committed to make available a new open-source, pan-London Energy Performance Certificate (EPC) data model in 2018 (the "London Building Stock Model"). This paper seeks approval for expenditure of up to £120,000 on this new address-level modelling tool that will help the GLA and boroughs identify and target London's households (including those in fuel poverty) and businesses with energy efficiency improvements. The modelling tool will also inform the GLA's guidance and support to boroughs on how they can legally and responsibly use data to identify households in fuel poverty, which in turn will help their enforcement of the Minimum Energy Efficiency Standard (MEES) which come into force from April 2018. Finally, it will enable boroughs and other agencies to identify the worst performing non-domestic buildings, enabling better targeting of business energy efficiency programmes, in particular those designed to support SMEs by helping them to reduce energy bills.

The modelling tool will provide a central database for all energy and carbon data collected through the Mayor's Energy for Londoners programme and associated policies.

Decision:

That the Executive Director, Development, Enterprise & Environment, approves expenditure of up to £120,000 on services required to create a new pan-London Energy Performance Certificate (EPC) data model.

AUTHORISING DIRECTOR

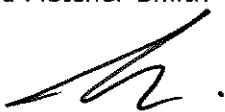
I have reviewed the request and am satisfied it is correct and consistent with the Mayor's plans and priorities.

It has my approval.

Name: Fiona Fletcher-Smith

Position: Executive Director-Development, Enterprise & Environment

Signature:



Date:

20.12.17

PART I - NON-CONFIDENTIAL FACTS AND ADVICE

Decision required – supporting report

1. Introduction and background

- 1.1 The Mayor has an ambition to re-establish London's position as a leader in tackling climate change and has set a target for London to become a zero-carbon city by 2050. Making London zero carbon will require economy-wide decarbonisation. This will involve changes to the way in which Londoners travel, work and live, including how energy is sourced and generated. Energy efficiency will have to increase dramatically, including by ensuring homes and workplaces are highly insulated. The fossil fuels used for heating and powering buildings, transport, and industry will have to be replaced by renewable energy sources. London's grids will need to become smarter at balancing energy demand with available supply, and low carbon travel will be the default option.
- 1.2 Making London zero carbon will ensure long-term economic growth and new business opportunities, alongside wider environmental benefits, such as improved air quality and a healthier society. The Mayor's Energy for Londoners programme aims to transform London's energy system by reducing energy demand and improving the security of supply by ensuring more local energy is produced. This will help keep energy bills fairer, thus protecting the most vulnerable, and reducing carbon emissions.
- 1.3 Over the last few years, GLA officers have lobbied government on making Energy Performance Certificate (EPC) data (which estimate the energy use and associated annual carbon emissions of a building) available and free of charge. In 2016 the raw data was made available and the GLA now holds all available EPC records for buildings in London. The data set is incomplete, however: EPCs are only available for around a third of all domestic buildings. Display Energy Certificates, which show the actual energy performance of building, should also be available for large public-sector buildings. There are also a number of national and GLA programmes that install energy efficiency measures in buildings, however there is currently no single repository for collating information on what has been installed. We therefore need to combine several existing data sets into a single, easy to use database.
- 1.4 It remains a challenge to combine and over-lay energy performance data with socio-economic information to accurately identify fuel poor households. As highlighted in the Mayor's draft Fuel Poverty Action Plan (FPAP), we want to remove this barrier, developing for the first time a London built-environment model (the "London Building Stock Model") which displays information at an individual building level. This high-level of granularity will transform the approach to the targeting of energy efficiency and fuel poverty programmes under Energy for Londoners (EFL), giving a street by street view of London's buildings.

2 Objectives and expected outcomes

- 2.1 The primary objectives of the London Building Stock Model are:
 - a. to help achieve objective 6.1 in the Mayor's draft London Environment Strategy *to reduce the emissions of London's homes and workplaces while protecting the most vulnerable by tackling fuel poverty* by enabling the easy identification of fuel poor households and low efficiency non-domestic buildings. This tool will enable both the GLA and external bodies e.g. boroughs and charities to better target policies and measures to help for example, fuel poor homes and businesses in London
 - b. allow for an identification of the number and location of buildings that do not comply with the Minimum Energy Efficiency Standards coming into force in 2018 and how many would be affected by the possible future tightening of national standards. This will be useful to inform national policy decisions and provide valuable information to potential investors and other interested third parties.

2.2 The model will also improve our understanding of London's buildings and combine existing data sets into a single, user friendly model by:

- a. developing a geographic information system (GIS) platform to host a spatial database for all domestic and non-domestic buildings in London. This platform will need to be flexible so that newly available data on new and existing buildings can be incorporated for example when new EPC or DEC (Display Energy Certificates) data becomes available or following the annual reporting of the impact of energy efficiency programmes
- b. mapping the key characteristics of each building in London. These characteristics should include but are not limited to:
 - building type
 - building fabric
 - building tenure and occupancy
 - energy supply
 - energy demand and fuel consumption
 - conservation indicators
 - socio-economic indicators
 - building energy rating and emissions estimate
- c. record energy efficiency measures already implemented by national energy efficiency programmes (e.g. through the Carbon Emissions Reduction Target and Energy Company Obligation) alongside GLA energy programmes
- d. where EPC information is missing, estimate energy and carbon performance using known building characteristics
- e. develop a user-friendly interface allowing data analysis and reporting to be undertaken quickly and easily.

2.3 While the core purpose of the London Building Stock Model is to provide a flexible analytical tool on London's buildings to help the targeting of the Mayor's programmes, it is anticipated, however, that the model may in the future need to incorporate the impact of London's zero carbon pathways on the building stock out to 2050. The modelling architecture should therefore be flexible enough to allow for a temporal dimension to be added at a later date (although this does not form part of its initial scope).

2.4 The expected outcomes of the stock model are as follows:

- a. complete mapping of London's building stock showing buildings overall estimated or actual building energy and carbon performance, and possible energy efficiency measures yet to be installed
- b. identification of the worst performing buildings and the homes most likely to be in fuel poverty.

3. Proposed next steps

3.1 We plan to procure and appoint a contractor to design and develop the London Building Stock Model, through a competitive tender. We will welcome consortium bids due to detailed nature of this work – to our knowledge there is no single organisation that holds all of the data required for constructing this modelling tool.

3.2 The Invitation to Tender will be issued in December 2017 and bids will be expected in early January 2017. We expect to award the contract around mid-January.

3.3 Once complete, the model will be GLA's authoritative tool for understanding the energy performance of London's buildings and how EfL programmes can target action. The GLA will make available to London boroughs a 'LITE' version of the model which will support, for example, how they can legally and

responsibly use data to identify households in fuel poverty, which in turn will help their enforcement of the Minimum Energy Efficiency Standard (MEES) which come into force from April 2018.

4 Equality comments

- 4.1 The GLA will take appropriate steps to ensure that there are no potential negative impacts expected on those with protected characteristics. Those with protected characteristics will gain from the positive benefits of this scheme in equal measure should their homes be selected for trial, and there will be equality of access to participate in the delivery and benefit from the project, without discrimination.
- 4.2 It is expected that the modelling tool will have a positive impact on lower income and fuel poor households, that is, it will help the GLA, borough and others more accurately target support and improve awareness of the energy performance of homes and help target activity to reduce energy consumption.

5 Other considerations

5.1 The key risks and issues for delivery of these projects are set out in the table below:

| Risk | Likelihood (out of 5) | Impact (out of 5) | Rating | Mitigation |
|--|--------------------------|----------------------|--------|--|
| Poor project scoping reduces value of work to the GLA, specifically the ability to use the model to target mayoral programmes. | 1 | 2 | 2 | GLA to produce detailed brief and scope to align with draft Environment Strategy objectives and commitments. All EFL teams to be consulted on project scope. |
| Project lacks longevity. Lack of long term support and refresh of data causes project to become outdated quickly. | 1 | 4 | 4 | GLA to allocate in-house analysis support to ensure external analysis is embedded in existing and future GLA model development. Project scope includes ability to update model at a later date and the provision of model user guides. |
| Lack of access to raw data requires high levels of interpolation, reducing accuracy of model | 1 | 3 | 3 | Timing of stock model has been delayed intentionally until the release of Energy Performance Certificate data. All GLA datasets will be made available for project use. |

| | | | | |
|--|---|---|---|--|
| Confidentiality of data restricts publication of model as a public interactive tool. | 2 | 1 | 2 | Project scope includes requirement for multiple access levels. Public version of model will protect any confidential data. |
|--|---|---|---|--|

6 Financial comments

- 6.1 Executive Director's approval is being sought to spend up to £120,000 on services required to create a new pan-London Energy Performance Certificate (EPC) data model. The contract for this work is to span two financial years (expected contract end date is December 2018), therefore the expected spend in 2017-18 is £40,000 and the remaining £80,000 in 2018-19. It should be noted that the budget for 2018-19 is subject to budget setting process.
- 6.2 The budget to fund the cost of this contract is the Environment Energy Efficiency Budget (Evidence and Analysis).

7 Legal comments

7.1 The foregoing sections of this report indicate that:

- 7.1.1 the decisions requested of the director concern the exercise of the GLA's general powers, falling within the statutory powers of the GLA to do such things as may be considered to further, and or be facilitative of or conducive or incidental to the furthering of, the improvement of the environment and social development in Greater London; and
- 7.1.2 in formulating the proposals in respect of which a decision is sought officers have complied with the GLA's related statutory duties to:
- (a) pay due regard to the principle that there should be equality of opportunity for all people;
 - (b) 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
 - (c) consult with appropriate bodies.
- 7.1.3 The GLA must, in the exercise of its functions, have due regard to the need to:
- (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010 ("the Act");
 - (b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;
 - (c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.
- 7.1.4 Having due regard to the need to advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to:

- (a) remove or minimise disadvantages suffered by persons who share a relevant protected characteristic that are connected to that characteristic;
 - (b) take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it; and
 - (c) encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.
- 7.1.5 The steps involved in meeting the needs of disabled persons that are different from the needs of persons who are not disabled include, in particular, steps to take account of disabled persons' disabilities.
- 7.1.6 Having due regard to the need to foster good relations between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to: tackle prejudice; and promote understanding.
- 7.1.7 Compliance with the above duties may involve treating some persons more favourably than others, but that is not to be taken as permitting conduct that would otherwise be prohibited by or under the Act.
- 7.1.8 The relevant protected characteristics are: age; disability; gender reassignment; pregnancy and maternity; race; religion or belief; sex; sexual orientation.
- 7.1.9 A reference to conduct that is prohibited by or under the Act includes a reference to a breach of: an equality clause or rule; or a non-discrimination rule.
- 7.1.10 To this end the director should have particular regard to section 4 (above) of this report.
- 7.2 Officers must ensure that the services required are procured by Transport for London Commercial who will determine the detail of the procurement strategy to be adopted in accordance with the GLA's Contracts and Funding Code. Officers must ensure that appropriate contract documentation is put in place and executed by the successful bidder(s) and the GLA before the commencement of the services.

8 Planned delivery approach and next steps

| Activity | Timeline |
|---|----------------------|
| Agree works scope and timetable | w/c 11 December 2017 |
| Draft Invitation to Tender | w/c 11 December 2017 |
| Issue Invitation to Tender | w/c 18 December 2017 |
| Award contract to contractor | January 2018 |
| Model methodology, design and development | Jan – May 2018 |
| GLA approve structure | May 2018 |
| Populate model | May – July 2018 |
| GLA approve model | August 2018 |
| Model complete | September 2018 |
| Model published (and project close) | October 2018 |

Appendices and supporting papers: None

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? YES**

If YES, for what reason: This director's decision form contains information the disclosure of which prior to the conclusion of the proposed procurement may distort genuine competition for the services required. Publication at this point would therefore, prejudice the commercial interests and ability of the GLA to secure value for money which is not in the public interest.

Until what date: 31 January 2018

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:

Agnieszka Griffin has drafted this report in accordance with GLA procedures and confirms that:

✓

Assistant Director/Head of Service:

Patrick Feehily has reviewed the documentation and is satisfied for it to be referred to the Sponsoring Director for approval.

✓

Financial and Legal advice:

The Finance and Legal teams have commented on this proposal, and this decision reflects their comments.

✓

Corporate Investment Board:

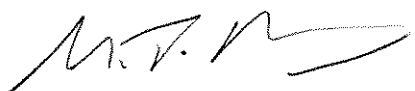
The Corporate Investment Board reviewed this proposal on 18 December 2017.

EXECUTIVE DIRECTOR, RESOURCES:

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

Signature

Date


Tom Middleton on behalf of Martin Clarke

20.12.17

