

GREATER LONDON AUTHORITY

REQUEST FOR ASSISTANT DIRECTOR DECISION – ADD2229

Title: The case for heat pumps in London's new developments: additional work to ADD2197

Executive Summary:

Research commissioned and published by the GLA as part of the evidence base for the draft London Plan has highlighted that the continued decarbonisation of the national electricity grid may increasingly favour the use of heat pumps to meet the London Plan onsite carbon reduction targets.

The Assistant Director of Environment approved (under cover of ADD2197) expenditure of up to £20,000 on consultants to support the GLA's work in determining whether the supply chain and business case exists in London to support the transition to heat pumps. Consultants Etude were awarded the contract and through their studies we have since identified additional work that is necessary to fully determine the business case for the transition to heat pumps in new developments in London. This additional work includes an assessment of the space and noise implications of heat pumps, a review of costs borne to residents and detailed case studies that could be used as part of evidence for the Examination in Public of the London Plan.

The additional work will cost up to £15,000. We propose to continue to use the consultants Etude to undertake this additional work as it represents work that cannot be separated from the recent service they have provided.

Decision:

That the Assistant Director of Environment approves:

- expenditure of a further £15,000 on external consultant support to undertake further research into the case for heat pumps in new development in London (taking total expenditure to £35,000, including work already undertaken); and
- an exemption from the GLA's Contracts and Funding Code so as to appoint consultants Etude, in respect of the above expenditure, without a competitive tender.

AUTHORISING ASSISTANT DIRECTOR/HEAD OF UNIT:

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: Patrick Feehily

Position: Assistant Director of Environment

Signature:



Date:

13/06/2018

PART I - NON-CONFIDENTIAL FACTS AND ADVICE

Decision required – supporting report

1. Introduction and background

- 1.1 In recent years, national Building Regulations (last published in 2013) have become increasingly outdated in relation to estimating the carbon emissions associated with buildings, in particular the carbon content of grid supplied electricity. The UK electricity grid has become significantly lower carbon in the four years since Building Regulations were last published. This is a result of increased gas and reduced coal generation due to their relative fuel prices and rapid increase in renewable energy supply.
- 1.2 Following a consultation in 2016, the Government announced changes to the Standard Assessment Procedure (SAP). SAP is the tool used to measure the energy use and carbon emissions of new homes against the target set in the Building Regulations. A key part of this change will be updates to the emission factors associated with energy use to reflect the continuing decarbonisation of the electricity grid. These changes are likely to have an influence on decisions in selecting energy systems and technologies to meet carbon targets.
- 1.3 In summer 2017 the GLA commissioned Buro Happold to produce a report, “The future role of the London Plan in the delivery of area-wide district heating” to examine the impact of using updated emission factors on the energy systems and technologies that developers would propose in the energy strategies produced as part of planning applications. The report concluded that:
 - As the national electricity grid decarbonises, the carbon benefit of gas Combined Heat Power (CHP) (the most commonly proposed technology in energy strategies currently) diminishes as gas becomes more carbon intensive relative to grid electricity
 - Using 2019 carbon emission factors, gas engine CHP is expected to provide less carbon savings over its lifetime and, as such, will not sufficiently help London meet its carbon targets.
 - Heat pump technologies, which are not currently commonly proposed, show increasingly greater carbon savings with future grid emissions factors and will meet our carbon targets.
- 1.4 In November 2017, the Government responded to the consultation stating that new greenhouse gas emission factors will be included in the next Building Regulations update; however the timeline for this is currently uncertain. In light of this uncertainty, we want to explore whether London can adopt updated emission factors before government to avoid locking in carbon intensive development long-term and support delivery of the Mayor’s aim for London to be zero carbon by 2050. A key part of this is whether London is ready for the shift to new low carbon technologies, in particular heat pumps.
- 1.5 In February 2018 the Assistant Director of Environment approved (under cover of ADD2197) expenditure of up to £20,000 for the procurement and appointment of consultants to support the GLA’s work in determining whether the supply chain and business case exists in London to allow for the transition to heat pumps. Consultants Etude were awarded the contract and through their studies we have since identified additional work that is necessary to fully determine the business case for transition to heat pumps in new developments in London.
- 1.6 The initial study undertaken identified a range of technologies and systems that could supply new buildings on a range of scales with heat using heat pumps. The total cost for this additional work (covered in more detail in section 2) is estimated at up to £15,000 and will need to be completed by in July 2018 to ensure inclusion as evidence for the draft London Plan. The total cost of the previous work and additional work would therefore be up to £35,000.

- 1.7 Officers propose that Etude are contracted to undertake the additional work as it represents work that cannot be separated from the recent service they have provided. It is not deemed an effective use of time or resources to procure different contractors and the technical knowledge and expertise required is not available in house. Officers acknowledge that section 9 of the GLA's Contracts and Funding Code requires, that where the expected value of a contract for services is between £10,000 and £150,000 the services required should be procured competitively or called off from an accessible framework. Section 10 provides however, that an exemption from this requirement may be approved where the proposed contractor has had previous involvement in a project or is to continue existing work which cannot be separated from the new project/work. Approval of an exemption from the requirements of section 9 of the GLA's Contracts and Funding Code is therefore, sought.

2. Objectives and expected outcomes

- 2.1 The objective of this additional work is to provide further technical analysis to help establish whether a transition to heat pumps in London is technically and economically viable. This will involve:

- High level review of space requirements for different types of heat pump systems compared with a district heating with CHP approach: apartment level, building level, energy centre level
- Qualitative review of noise implications for different types of heat pump systems compared with a district heating with CHP approach
- A more detailed comparison of costs to residents, using published data to estimate the cost of key components for baseline systems at three scales: individual (individual gas boiler and direct electric), communal (block gas boiler) and district (gas boilers and CHP)
- Case study on capital costs for a typical medium density apartment block
- A high-level review of three case studies involving heat pumps
- A thought-piece on zero carbon new buildings in 2030 outside district heating priority areas: heat pumps vs direct electric heating

- 2.2 The expected outcome is a report that will be used to inform our decision on whether to use updated emission factors in the planning process (through a revised Energy Guidance document), which will provide further evidence for draft London Plan policies. This will influence the decisions developers take to meet our carbon targets, better reflecting real-world emissions and supporting our carbon targets.

3. Equality comments

- 3.1 The public sector equality duty requires the identification and evaluation of the likely potential impacts, both Under Section 149 of the Equality Act 2010 (the "Equality Act") as public authorities, the Mayor and the GLA must have due regard to the need to eliminate unlawful discrimination, harassment and victimisation, and to advance equality of opportunity and foster good relations between people who share a protected characteristic and those who do not. Protected characteristics under the Equality Act comprise age, disability, gender re-assignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation, and marriage or civil partnership status.
- 3.2 This additional work furthers actions and policies set out in the London Environment Strategy and the London Plan which have both been consulted on publicly and sought input from all groups and communities. All responses to those consultations are being analysed properly to help ensure the final document reflects their diverse views and needs.

- 3.3 The evaluation process to appoint Etude as approved by ADD2197 was conducted to ensure that submissions were evaluated fairly to select the offer that provides the relevant experience and offers value for money.
- 3.3 The findings from the proposed additional work by Etude will further support the evidence base of policies in the draft London Plan, which aim to improve the carbon performance of all new developments for all Londoners. In particular the detailed review of costs for residents will provide crucial evidence on any potential costs impacts for Londoners. The purpose of this cost analysis is to ensure any consequent policy decisions do not increase consumer energy bills and that the fuel poor are protected.

4. Other considerations

a) Key risks and issues

Risk/issue	Mitigating actions
1. Insufficient budget to complete additional work.	<ul style="list-style-type: none"> Budget of up to £15,000 has been accurately estimated following discussion with Etude and provision of a detailed quote.
2. Insufficient time to complete the additional work so that it can be used to support the evidence base for London Plan policies.	<ul style="list-style-type: none"> Etude have established that July is achievable for project completion. Regular catch ups and monitoring between Etude and the GLA's Project Manager.
3. Evidence base does not support the business case for heat pumps and could therefore potentially undermine draft London Plan policies.	<ul style="list-style-type: none"> Evidence from the work undertaken by Etude to date supports the business case and so this additional research is not expected to contradict findings to date. Additional ways to support low carbon heating, including heat pumps, will be investigated by the Environment Team.

- b) This works links the Mayor's Environment Strategy, new draft London Plan energy policies and the ambition for London to be zero carbon by 2050.

5. Financial comments

- 5.1 Assistant Director's approval is sought for expenditure up to £15,000 for the single source appointment of consultants Etude to undertake further research into the case for heat pumps in new development in London. This is in addition to the expenditure approved under ADD2197 for £20,000 therefore taking the total spend for this consultancy to £35,000.
- 5.2 This consultancy cost will be funded from Environment team's 2018-19 Supply Chain (part of the Zero Carbon Policy) programme budget and is expected to be delivered by July 2018.

6. Legal comments

- 6.1 The foregoing sections of this report indicate that the activity in respect of which approval is sought may be considered to be facilitative of and conducive to the exercise of the GLA's general powers to undertake such activity as may be considered to promote the improvement of the environment in Greater London and have complied with the Authority'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.
- 6.2 In taking the decisions requested, the assistant director must have due regard to the Public Sector Equality Duty; namely the need to eliminate discrimination, harassment, victimisation and any other conduct prohibited by the Equality Act 2010, and to advance equality of opportunity and foster good relations between persons who share a relevant protected characteristic (race, disability, gender, age, sexual orientation, religion or belief, pregnancy and maternity and gender reassignment) and persons who do not share it (section 149 of the Equality Act 2010). To this end, the assistant director should have particular regard to section 3 (above) of this report.
- 6.3 Section 9 of the GLA Contracts and Funding Code (the 'Code') requires the GLA to call off the services required from an accessible framework or conduct a competitive procurement exercise for the same. The assistant director may however, approve an exemption from this requirement under section 10 of the Code upon certain specified grounds. One of those grounds is that an exemption may be approved where the proposed contractor has had previous involvement in a specific current project or the work is continuation of existing work that cannot be separated from the new project/work. Officers have indicated at section 1 of this report that this ground applies. The assistant director may therefore, approve the exemption proposed if satisfied with the supporting content of this report.
- 6.4 Should approval of the proposals set out as decisions be granted officers must ensure that appropriate contract documentation is put in place and executed by the GLA and Etudes before the commencement of the additional services

7. Planned delivery approach and next steps

Activity	Timeline
Award contract	Early June 2018
Analysis complete with findings	Wc 25 th June 2018
Final deliverables (report)	Wc 9 th July 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? 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:**

Matt Thomas has drafted this report in accordance with GLA procedures and confirms that the Finance and –if relevant- Legal teams have commented on this proposal as required, and this decision reflects their comments.

Corporate Investment Board:

The Corporate Investment Board reviewed this proposal on 11 June. 2018.

HEAD OF FINANCE AND GOVERNANCE:

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

Signature:



Date:

11-06-18