

CIL09

LONDON LEGACY
DEVELOPMENT
CORPORATION

CARBON OFFSET

LOCAL PLAN SUPPLEMENTARY PLANNING DOCUMENT

AUGUST 2016

CONTENTS

Introduction	2
Policy Background	3
Proposed Carbon Offset Price	6
How will this money be collected?	7
How will this money be allocated and spent?	7
How will this process be monitored	8
Annex 1: Evidence for and approach to the carbon offset cap	9
Annex 2: Local carbon offset fund - application form and guidance for projects	12

ADOPTION OF THIS SPD

This supplementary planning document (SPD) was adopted by the London Legacy Development Corporation on 31st of August 2016. The adoption statement can be found on the Legacy Corporation's website <http://queenelizabetholympicpark.co.uk/planning-authority/planning-policy/supplementary-planning-documents>.

This SPD does not create new policy but rather provides guidance on the relevant policies within the Legacy Corporation's Local Plan which was adopted in July 2015 <http://queenelizabetholympicpark.co.uk/our-story/transforming-east-london/local-plan>.

Enquiries about this SPD can be made in the following ways:

In writing to:

**Planning Policy and Decisions,
London Legacy Development Corporation,
10th Floor, 1 Stratford Place, London.
E20 1EJ**

Email: planningpolicy@londonlegacy.co.uk

Telephone: 020 3288 1800

1. INTRODUCTION

- 1.1 The London Legacy Development Corporation is a Mayoral Development Corporation (MDC) established on 1st April 2012 and becoming the Local Planning Authority for its area on 1st October 2012. It has full planning powers including the determination of all applications for planning permission and plan preparation responsibilities and the ability to prepare and introduce a local Community Infrastructure Levy. In order to satisfy the requirements of its plan making powers, the Legacy Corporation has prepared a Local Plan, which was adopted by the Legacy Corporation Board on 21st July 2015. A Community Infrastructure Levy has also been prepared, been through its Examination and was adopted by the Board on 29th January 2015. The CIL charge resulting from this came into force on 6th April 2015.
- 1.2 The established purpose of the Legacy Corporation is “To promote and deliver physical, social, economic and environmental regeneration of the Olympic Park and its surrounding areas, in particular by maximising the Legacy of the 2012 Olympic and Paralympic Games, by securing high-quality, sustainable development and investment, ensuring the long-term success of the facilities and assets within its direct control and supporting and promoting the aim of convergence.”

The purpose of this Supplementary Planning Document
- 1.3 This supplementary planning document (SPD) has been prepared in order to provide further guidance to particular aspects of policy within the Local Plan, namely those that relate to the commitment to introduce a Carbon-offset scheme that will apply to new major development schemes within the Legacy Corporation area.
- 1.4 Local Plan Policy S2, Energy in New Development requires that residential development reduces its regulated carbon emissions in accordance with the threshold dates set out within the policy. Where the carbon target cannot be met through on-site measures, the policy requires that any scheme off-set any remaining predicted carbon emissions through the payment of an off-set price per tonne of carbon dioxide. The policy identifies the need to establish the off-set price per tonne of carbon dioxide, the mechanisms for collecting that money and identifying and allocating it to projects that will verifiably result in carbon-offsetting.
- 1.5 National Government policy for meeting European and national carbon reduction targets associated with new buildings remains under review. Both London Plan and local policy continue to set out a consistent approach to carbon reduction and this SPD provides guidance on the implementation of those policies.

2. POLICY BACKGROUND TO OFF-SET SOLUTIONS WITHIN THE LEGACY CORPORATION AREA

NATIONAL POLICY

- 2.1 The context for national policy on Carbon Reduction is contained within the 2008 Climate Change Act which established a legally binding climate change target. This aims to reduce the UK's greenhouse gas emissions by at least 80% (from a 1990 baseline) by 2050. <https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050>.
- 2.2 The detail of Government Strategy as a whole is set out within the 2011 Carbon Plan. <https://www.gov.uk/government/publications/the-carbon-plan-reducing-greenhouse-gas-emissions-2>.
- Allowable Solutions**
- 2.3 One element of the Strategy for carbon emissions reduction that had been identified by Government is the proposed introduction of a national Allowable Solutions Scheme which would allow developers to effectively off-set any remaining carbon emissions from meeting the building regulations requirements for new homes by either off-setting the carbon through measures they carry out themselves on or off-site, or by paying into a fund that would be used to deliver an off-set of the quantum required. The key principles of the approach proposed were:
- Provide house builders with choice and a flexible approach
 - Carbon emissions calculated on basis of regulated energy sources
 - Allowable solutions must result in cost effective carbon savings
 - Allowable solutions must be additional
 - Administrative overheads should be kept to a minimum
 - A price cap (per tonne of carbon mitigated) which would be regularly reviewed
- 2.4 Implementation of the proposed scheme and the related changes to Part L of the Building Regulations have now been put on hold subject to a review of how the wider carbon reduction obligations can be met. Therefore no specific timetable is currently in place for implementation of a national allowable solutions scheme or an alternative, although the United Kingdom remains bound to the requirements of the European Energy Performance of Buildings Directive 2010/31/EU requirement to achieve 'nearly zero energy' buildings by 2020 (article 9).

LONDON PLAN POLICY

The London Plan Policy 5.2 'Minimising Carbon Dioxide Emissions (part E)

- 2.5 "The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere."
- 2.6 Within the Legacy Corporation area, the Legacy Corporation is the Local Planning Authority and "cash in lieu" contributions will be collected and allocated by the Legacy Corporation through the use of S106 Planning Obligations.

Policy 5.4 Retrofitting (part B)

- 2.7 “Within LDFs boroughs should develop policies and proposals regarding the sustainable retrofitting of existing buildings. In particular they should identify opportunities for reducing carbon dioxide emissions from the existing building stock by identifying potential synergies between new developments and existing buildings.”
- 2.8 In April 2014, the Mayor of London published his Sustainable Design and Construction SPG. This includes guidance on the use of energy assessments required for mayor development schemes in London Plan Policy 5.2 and also provided guidance on the Carbon Dioxide Off-setting required by the policy.
- 2.9 “London Plan policy 5.2 sets out that where the target percentage improvements beyond Part L of the Building Regulations, also set in this policy, cannot be met on-site, any short fall should be provided off-site or through a cash in lieu contribution to the relevant borough. This is to be ring fenced to secure delivery of carbon dioxide savings elsewhere. The Government has consulted on its approach to Allowable Solutions in relation to ‘zero carbon homes’. However, there is still uncertainty over the requirements to meet the ‘zero carbon’ definition and in the interim boroughs are encouraged to set up their own funds in accordance with the guidance below which would apply to both residential and non-residential development.” (Mayor’s Sustainable Design & Construction SPG, April 2014, paragraph 2.5.6).

LOCAL PLAN POLICY

- 2.10 **Legacy Corporation Local Plan**
This sets out the local planning authority’s approach to reducing carbon dioxide emissions in its area through the planning system. In particular it identifies the preparation of an SPD to set out “the rate per tonne of carbon dioxide and the scheme for applying the funds raised” in respect of off-setting any required off-site mitigation in reaching the zero carbon targets within the policy.

Policy S.2: Energy in new development

Developments will be expected to minimise carbon dioxide emissions to the fullest extent possible by application of the Energy Hierarchy as set out below:

1. Reducing energy requirements
2. Supplying the energy that is required more efficiently
3. Meeting remaining energy requirements through renewable energy sources where viable.

Major development proposals should as a minimum meet the regulated carbon dioxide emissions standards outlined within the London Plan. For residential buildings:

- 2015–2016: 40 per cent improvement on the 2010 Building Regulations Target Emission Rate
- 2016–2031 zero carbon (including allowable solutions or equivalent contribution to the Carbon Off-setting Fund).

Non-domestic proposals should achieve a 35 per cent improvement up to 2016, meet building regulation requirements from 2016, and be zero carbon from 2019 onwards.

Where these targets cannot be met on site, and until any nationally recognised Allowable Solutions system is in place, a financial contribution to the Legacy Corporation Carbon Off-setting Fund will be required. A supplementary planning document will be prepared, setting out the rate per tonne of carbon dioxide and the scheme for applying the funds raised.

Major applications will be required to provide an Energy Statement that sets out how the development has addressed the Energy Hierarchy and meets or exceeds the targets above and the source and method of proposed energy supply. Energy statements should be prepared in accordance with Part D of London Plan Policy 5.2 and provide an estimation of unregulated emissions for development in use, alongside calculated emissions associated with building regulations.

- 2.11 It should be noted that In the GLA “Energy Planning Guidance” (March 2016), the Mayor has indicated that he will continue to apply a 35% improvement over Part L 2013 to non-domestic proposals. A 35% target has been demonstrated to be generally viable and feasible (Minor Alterations to the London Plan evidence base) and therefore is in line with overarching London Plan Policy 5.2A which aims to minimise carbon dioxide emissions from development. In addition monitoring indicates that the current 35 per cent reduction is achievable. An offset contribution may be therefore be requested where the non-domestic development does not meet the 35% on-site improvement.

THE LEGACY COMMUNITIES SCHEME APPROACH TO CARBON OFFSETTING

- 2.12 The Legacy Communities Scheme (LCS) is the Legacy Corporation’s development scheme for the development of the ‘development platforms’ left after the post 2012 Games Transformation of the Queen Elizabeth Olympic Park and associated Games time land. Originally granted Planning Permission in September 2012, the scheme includes approximately 7000 new homes and a significant amount of non-residential floorspace, including a range of community infrastructure, including health facilities and three schools. As part of the schemes strategy for reducing carbon dioxide emissions, which includes achieving the zero carbon targets within the London Plan (2011), it is proposed to off-set any carbon emissions not achieved on-site through the use of a carbon off-set fund.. This has been specifically captured within a planning obligation, set out within the S106 Agreement associated with the scheme
- 2.13 For both the LCS and the Local Plan Off-set solutions approach, there is a specific need to identify how the off-set sum will be calculated and collected and how it will then be allocated to specific schemes which can be validated in terms of the amount of carbon saving achieved.

THE STRATEGIC APPROACH

- 2.14 The Local Plan policy is clear that the carbon off-setting scheme set out in this SPD will be applied where development schemes are not able to meet the policy requirements through on-site carbon reduction measures alone. Should a Government review of the approach to meeting carbon targets introduce a national approach or scheme that allows the carbon gap to be met, then at that point, the national approach will either modify or replace this local carbon off-setting scheme.
- 2.15 Currently Government is reviewing options for meeting its European and national carbon reduction targets in relation to emissions from new buildings.
- 2.16 Whether there is a local or national scheme in place at the time, it will be necessary for there to be a local process in place for the collection of monies from any financial contribution resulting from a carbon off-set payment and also a scheme in place for the identification of projects to which that money can be applied to achieve genuinely additional carbon savings and the way in which the carbon savings achieved can be validated to provide assurance that the sums have been properly applied.
- 2.17 Where monies are collected through a local Off-set solutions scheme, these will be secured through the planning system through the use of S106 Agreements. The carbon price set out in the next part of this SPD will be a ‘cap’ and actual levels of off-set charge will be assessed and negotiated through the planning decisions process with a price or amount appropriate to that particular scheme being applied.

3. PROPOSED CARBON PRICE

To what development will the off-set charge apply?

- 3.1 The off-setting scheme will only apply, by definition of Local Plan Policy S.2, to development schemes that fall within the definition of ‘major’ development. That is “Development of 10 dwellings or more, on a site of over 0.5 ha or includes more than 1,000 sqm of floorspace”.

Calculating the amount payable

- 3.2 Both Local Plan and London Plan policy requires the submission of an energy assessment for development schemes with that assessment submitted with the application, rather than retrospectively. The assessment requires the definition of how the scheme will minimise carbon emissions. Specifically, it should establish the amount of carbon that remains when applying the policy target reduction in carbon emissions beyond that required by Part L of the Building Regulations. The percentage target applied will need to be the most up to date reduction target specified in either the Local Plan or London Plan at the time. Having established this carbon gap, the energy assessment will need to set out the specific commitments included within the scheme for on-site carbon reduction and the amount of carbon these measures are calculated to have save. These will need then to be deducted from the over calculated carbon gap to give the amount in tonnes of carbon that will need to be off-set through payment to the carbon off-setting scheme.
- 3.3 The energy assessment and carbon gap assessment methodology set out in the document “Energy Planning, Greater London Authority Guidance on preparing energy assessments (March 2016)” and the related Mayor of London’s Sustainable Design and Construction SPG (April 2014) should be used for the above calculations.
- 3.4 It is proposed that where buildings do not meet carbon reduction targets and there is a carbon gap, it is reasonable, in keeping with London Plan Supplementary Planning Guidance (Sustainable Design and Construction SPG, 2.5.13) to seek abatement of carbon emissions over a 30 year period.
- 3.5 The amount payable into the Carbon Off-setting scheme will then be simply a multiple of number of tonnes of carbon to be off-set and the price per tonne of carbon agreed by a period of 30 years:
- ‘Carbon gap’ (Tonnes of Co2) x Price of Carbon (£) x 30 (years) = offset payment,
 - The amount per tonne of carbon sought from any scheme will be capped at £60.
- 3.6 The proposed price cap reflects the latest national assessment of the non-traded price of carbon and is therefore deemed a reasonable figure to ensure that:
- Carbon offset monies collected are sufficient to work towards a carbon fund: carbon saved ratio of 1:1.
 - Carbon offset does not dis-incentivise on-site carbon reduction measures.
- 3.7 Where an applicant considers that the maximum amount paid per tonne should be less than this, evidence should be presented to show that an otherwise acceptable development scheme would be made unviable by applying this upper figure. A substantially lower figure is likely to be considered unsuitable to provide a meaningful off-set of carbon from the scheme and to sustain offset measures that will be able to achieve a 1:1 carbon offset ratio.

4. HOW WILL THIS MONEY BE COLLECTED?

- 4.1 The mechanism for agreement of and collection of the carbon off-set amount calculated will be defined in through the use of S106 Planning Obligation For each scheme an arrangement will be put in place which is appropriate to that schemes circumstances with those arrangements being secured within the terms of a S106 Legal Agreement. Where the scheme is a multi-phase scheme it will normally be expected that the carbon gap assessment and definition of the carbon off-setting sum will take place for each phase separately but based on an initial outline application stage energy assessment. This provides an element of flexibility, however, the following principles will be applied:
- Scheme design phase calculation of carbon gap through the Energy Assessment process and application of the price per tonne of carbon to the identified carbon gap.
 - Payment of identified amount calculated, at commencement of the scheme (or for a multi-phase scheme payment of the amount related to that phase at the commencement of each phase.

5. HOW WILL THIS MONEY BE ALLOCATED AND SPENT?

Defining appropriate Carbon Reduction Projects

- 5.1 In order for a carbon off-setting project to be eligible for funding from the carbon off-set monies received by the Legacy Corporation, a formal application process will be required that ensure that those projects are suitable and likely to achieve the off-setting that is claimed. Appendix 2 contains the draft form and defines the information required in order to demonstrate suitability. Suitable projects will assessed as described below prior to specific allocation of funding. It is generally expected that projects within or close to the Legacy Corporation area will receive preference for funding, while bids for projects elsewhere within the four boroughs will also be considered (Hackney, Newham, Tower Hamlets and Waltham Forest). Bids for funding can be made for any project capable of meeting the criteria and information requirements set out in the application form at Appendix 2. Decisions on award of funding will also be made in light of the best value that can be achieved for the money available at the time a bid is considered. Meeting the assessment criteria is not in itself a guarantee that funding will be awarded.

Allocation by the Project Proposals Group

- 5.2 The Project Proposals Group has been established to make decisions on the allocation of funds collected through the Legacy Corporation's Community Infrastructure Levy and through planning obligations within S106 Agreements for particular development with planning permission. The responsibility for this decision making has been delegated to this senior officer group by the Legacy Corporation Board. It is only able to make allocations to projects that have been added to the relevant project list. The relevant project list is agreed by the Board each year following an annual review and consultation.
- 5.3 In allocating funding to carbon offset projects, the PPG will assess the following:

Offset Scheme project cost effectiveness	A calculation of the total lifetime carbon saved: total offset money required (project implementation and administration).
Scale of savings	Total amount of carbon saved over project lifetime
Additionality	The degree to which projects can demonstrate that other funding opportunities have been sought and that offset funding will enable a project to deliver additional carbon savings.
Additional community benefit	The degree to which projects will deliver additional community benefit
Innovation and strategic importance	An assessment of the degree to which projects are of strategic importance in demonstrating best practice, or new approaches to cost-effective carbon saving
Deliverability	An assessment of the deliverability of the project, based on funding and approvals secured, project timescales and identified project risks

6. HOW WILL THE PROCESS BE MONITORED?

- 6.1 An annual Planning Authority Monitoring Report is published each year by the Legacy Corporation. This will include a report on the number of schemes granted planning permission that includes a carbon off-setting planning obligation within a S106 Legal Agreement. It will also identify the amount of carbon off-set funds collected within that period, the balance remaining from that which has been allocated and the amount allocated to specific projects. The specific project to which funds have been allocated will also be identified. The effectiveness of the carbon offset scheme set out within this SPD will be monitored over time and its provisions reviewed if considered necessary.



ANNEX 1: EVIDENCE FOR AND APPROACH TO THE CARBON PRICE CAP

THE CARBON OFFSET PRICE

- 1.1 The concept of carbon offset was introduced by the Zero Carbon Hub in order to provide the development industry with a means to comply with the Government's definition of zero carbon in a cost effective manner. Carbon offset is a pragmatic recognition of the diminishing carbon returns per pound of investment in new homes versus the gains to be made by investing an equivalent sum in other carbon reducing measures. In arriving at a carbon offset price, it is therefore necessary to consider:
- The cost of offsetting carbon through 'carbon offset projects'. This cost will vary according to the type of carbon offset project under consideration, the cost of labour and materials in the area that the project is being undertaken and particularly for domestic retrofit projects, the condition of the properties undergoing retrofit activity.
 - The impact of the carbon price on development viability. A price that is set too high could impact negatively on development viability and stymie housing delivery.
- 1.2 Both of the above factors listed above have a very broad range of variables attached to them, and so arriving at a consensus on the appropriate price to charge for carbon abatement on a national scale has been difficult. However, the Greater London Authority has taken its own view, and the London Plan Sustainable Design and Construction SPG provides the following two options for local planning authorities seeking to adopt a carbon offset price:
- The cost of reducing off-setting carbon dioxide emissions across the borough
 - A price based on a nationally recognised carbon dioxide pricing mechanism

ESTABLISHING A LOCAL CARBON OFFSET PRICE

- 2.1 In order to set a local price based on local cost parameters and likely carbon offset projects, it would be necessary to have a good idea of the projects that will be funded via the LLDC Carbon Offset fund and have a sufficiently robust evidence base upon which to base that cost.
- 2.2 The main advantage to this approach is that it reduces the risk of adopting a carbon price which does not reflect the likely cost of carbon abatement for projects that the local planning authority would wish to fund within, or close to its boundaries.
- 2.3 This option has been discounted by the LLDC for the following reasons:
- It is likely that the LLDC would wish to fund projects that do not fall directly within its own MDC boundary and that will fall across four separate boroughs.
 - The LLDC does not have a comprehensive overview of the data required to set a robust price for carbon that could apply across its boundary or all four boroughs.

ADOPTING A NATIONALLY RECOGNISED PRICE FOR CARBON DIOXIDE

- 3.1 The London Plan Sustainable Design and Construction SPG (2014) currently identifies the following as nationally recognised prices for carbon dioxide:
- The Zero Carbon Hub price, currently set at £60 per tonne (to be abated over 30 years)
 - The non-trading price of carbon (currently also set at £60 per tonne of carbon over 30 years)

CARBON PRICE SENSITIVITIES AND IMPACTS

- 4.1 Whilst London Plan guidance on establishing a price cap is therefore clear, the Government has relatively recently consulted on a range of approaches to adopting a carbon price, and price amounts. It is worth reviewing these prices to understand the sensitivities and likely impacts that may arise from adopting different carbon offset prices.
- 4.2 Prior to the publication of the National Productivity Review (July 2015), the Government had previously stated that it would like to establish a carbon price cap for the purposes of carbon offset. The Department of Communities and Local Government consultation document Next steps to zero carbon homes – Allowable Solutions (2013) considered three potential price caps. Those caps and the responses received from the UK building industry are set out in table 1 below.
- 4.3 It can be seen from table 1 that the most popular option was for a carbon offset price set at £90t/CO₂/pa. Whilst this was extremely popular amongst local planning authority respondents, developer respondents were less keen on this approach.

Table 1 – Carbon prices consulted on in 2013

Price cap	% of question respondents supportive	Reasons given for support	Risks and issues
2013: Low price cap of £36/tCO ₂ per annum (based on the current traded carbon price floor)	24%	Least impact on delivery and higher than the cost of carbon in the European Emissions Trading Scheme.	This price bears no relation to the cost of non-traded carbon and there is therefore significant risk that the LLDC could not find carbon projects that could be funded at this price
2013: Central price cap of £60/tCO ₂ per annum (based on the non-traded carbon price series used in government policy appraisal)	28%	High enough to encourage adoption of on-site carbon saving technology, low enough not to adversely impact housing build out rates	This price is based on the non-traded costs of carbon and therefore the likelihood that projects can be funded from within this amount is good.
2013: High price cap of £90/tCO ₂ per annum (based on the marginal on-site abatement cost assuming that PV is the most cost effective method of achieving carbon reduction on-site, exclusive of attendant Feed in Tariffs)	48%	Better reflection of the likely cost of carbon saving projects and therefore least risk of not being able to afford to offset carbon for the price charged. This option was not supported by developers.	This price has been consulted on by Government as the price most likely to encourage investment in PV on-site.

COST IMPACT ON HOUSING DELIVERY

- 5.1 Based on Zero Carbon Hub analysis of the likely level of carbon compliance to be achieved by different dwelling types in 2011, it is possible to extrapolate out maximum allowable solution costs per dwelling type as set out in table 2 below.

Table 2 – Maximum allowable solution costs per dwelling, by dwelling type

Maximum Allowable Solution costs per dwelling type	Detached	End terrace / semi	Mid terrace	Flat
Residual Emissions (over 30 years)	35.4	25.2	25.2	22.9
2011: £46/tCO2**	£1,628	£1,159	£1,159	£1,053
2013: Low: £36/tCO2	£1,274	£907	£907	£825
2013: Central: £60/tCO2	£2,123	£1,511	£1,511	£1,376
2013: High: £90/tCO2	£3,184	£2,267	£2,267	£2,064

*after DCLG consultation Next steps to zero carbon homes – Allowable Solutions (2013) p37

** included as a comparator – see section 8.5

- 5.2 The table above indicates that although the cost per dwelling arising from each of the price caps is likely to be small in comparison to the likely London-based sales price of the dwelling, these costs are most likely to impact on schemes for which there is little financial headroom in build cost; typically this will impact on small scale developments where margins are tighter.

ADOPTING A CARBON PRICE CAP

- 5.3 In order to mitigate against the introduction of a carbon offset charge having a negative impact on small developers, the LLDC, in its Local Plan, has indicated that only ‘major development’ will be impacted by its carbon offset policy, so schemes with fewer than 10 homes, a site area of less than 0.5ha or less than 1,000sqm of floorspace will not be affected.
- 5.4 In addition to this, the LLDC has opted to implement £60 per tonne as a carbon price cap, with the agreed amount to be paid subject to scheme viability.

Annex 2: LLDC Carbon offset fund

Application form and guidance for projects

Release date: August 2016

Section	Title	Page
1.	General Project Information	5
2.	Carbon Saving Summary	6
3.	Additional Community Benefit	8
4.	Innovation and Strategic Importance	9
5.	Deliverability	9
6. a	Carbon Offsetting via efficiency measures: request for Information	12
6. b	Carbon Offsetting via renewable energy: request for information	14
6. c	Carbon Offsetting via embodied energy: request for information	16
6. d	Carbon Offsetting via behaviour change: request for information	17
Appendix 1	Renewable energy information requirements	18
Appendix 2	Example calculation for Anaerobic Digestion	21
Appendix 3	Embodied carbon calculation	22

Introduction

The Legacy Corporation has established a carbon offset fund to promote low carbon development in support of Local Plan Policy S.2. Schemes that cannot achieve Local Plan carbon targets can offset the missing carbon by paying into this offset fund. The Legacy Corporation will then allocate these funds to carbon saving schemes that meet its carbon fund investment criteria.

There are four different classes of measures that can be considered for support:

- Energy efficiency
- Renewable energy
- Embodied energy, and
- Behaviour change.

This document consists of three parts:

- **Part 1** – Scheme information that we require to assess your application
- **Part 2** - The information you must provide to us so that we can understand that your assessment of the carbon dioxide your project will save is robust
- **Part 3** – Example calculations (Appendices 1 to 3)

In order to be considered for offset funding support, projects must:

- Complete Part 1 of this application form and provide the requested supporting evidence
- Provide the information required in the applicable sections of Part 2 of this application form

Submitting your proposal

Proposals should be submitted to the Legacy Corporations Planning Policy and Decisions Team using the form included within this document. Forms and guidance are downloadable from the Legacy Corporations website.

Electronically submitted applications are encouraged and should be submitted via the following email address with CARBON OFFSET PROJECT APPLICATION within the message title: planningpolicy@londonlegacy.co.uk.

If you are considering making an application for funding, it is recommended that you first contact the Planning Policy & Decisions Team to establish when it is likely that applications for funding will next be considered. It is likely that bidding rounds will only be held at times when sufficient money is available within the Carbon Offset Fund.

To discuss applications before or after submission, please contact the Planning Policy Team on **0203 288 1800**. Written correspondence should be sent to:

**Carbon Offset Project Applications
Planning Policy & Decisions Team
London Legacy Development
Corporation
Level 10
1 Stratford Place, Montfichet Road
London
E20 1EJ**

Once an application has been received you will receive a letter of acknowledgement and an indication of the expected programme for the consideration of the application. If necessary during this process, you may be contacted and asked to provide additional information or clarification.

Please note that there is no guarantee that an application for funding for a carbon saving project will be successful even where this meets the application criteria as success will also rely on availability of money within the Carbon Offset Fund.

Queries and further information

If you need help in completing this form, or require further information, please submit your query using the contact information provided.

Evaluating your proposal.

Please be advised that the information you provide in filling out this application form will be used to assess your proposal against the criteria set out in the following table:

Evaluation criteria	Description	Relevant document section
Offset Scheme project cost effectiveness	A calculation of the total lifetime carbon saved: total offset money required (project implementation and administration).	Section 1
Scale of savings	Total amount of carbon saved over project lifetime.	Section 1 with appropriate supporting technical information requested in section 6
Additionality	The degree to which projects can demonstrate that other funding opportunities have been sought and that offset funding will enable a project to deliver additional carbon savings.	Section 2
Additional community benefit	The degree to which projects will deliver additional community benefit.	Section 3
Innovation and strategic importance	An assessment of the degree to which projects are of strategic importance in demonstrating best practice, or new approaches to cost-effective carbon saving.	Section 4
Deliverability	An assessment of the deliverability of the project, based on funding and approvals secured, project timescales and identified project risks.	Section 5
Location	The scheme is at first preference within the Legacy Corporation area or if not within one of the four boroughs of Hackney, Newham, Tower Hamlets or Waltham Forest, with proximity to the LLDC area being taken into account.	Section 1

1. General project information

Please complete all highlighted fields below

Applicant organisation name		
Application date		
Primary contact name		
Secondary contact name		
Address		
Email address		
Phone number		
Proposal name		
Proposal location		
Type and number of buildings included (or other as appropriate)		
Approaches included (please highlight all that apply, and provide the information requested in the identified section of this application)	Energy efficiency (Yes/No)	See section 6a for supporting technical information you must supply to support your application
	Renewable energy (Yes/No)	See section 6b for supporting technical information you must supply to support your application
	Embodied energy (Yes/No)	See section 6c for supporting technical information you must supply to support your application
	Behaviour change (Yes/No)	See section 6d for supporting technical information you must supply to support your application

2. Carbon saving summary

Please complete all highlighted sections below.

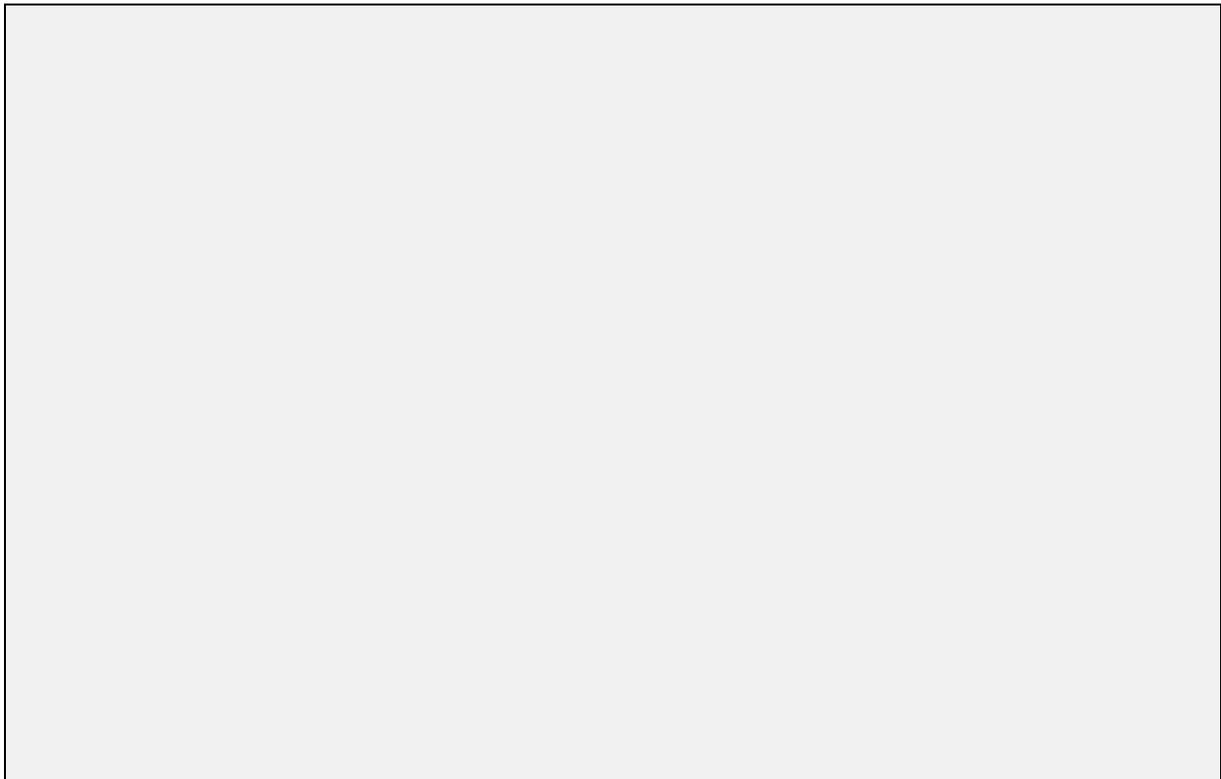
Item	Applicant Response	Guidance
Offset funding requested for project administration		Project administration covers all costs required to administer your project for which you are seeking offset funding.
Offset funding requested for project implementation		Project implementation costs are to cover the costs associated with the implementation of carbon reducing measures.
Other funding leveraged into this scheme to cover project administration		Please list out separately: 1. the funding agencies you have approached 2. the amount of funding you have agreement in principle to spend on this project 3. the amount of funding you have secured from each agency (with proof of such) 4. the items of your project that each funding agency is sponsoring
Other funding leveraged into your proposal to cover project implementation		Please list out separately: 1. the funding agencies you have approached 2. the amount of funding you have agreement in principle to spend on this project 3. the amount of funding you have secured from each agency (with proof of such)

		4. the items of your project that each funding agency is sponsoring
Carbon saving attributed to LLDC carbon offset fund		<p>Please summarise the total lifetime carbon dioxide savings (total carbon savings over the lifetime of your project) achieved by your project that will be attributed to the LLDC carbon offset fund investment. Please exclude all carbon savings associated with elements to your projects that have been ‘claimed’ by other investors – examples could include:</p> <ul style="list-style-type: none"> • Other carbon offset funds • Energy company retrofit schemes <p>Unless the proposed project’s carbon saving is calculated using an established assessment methodology (BREEAM, SAP, etc) please use the latest Defra calculation methodology. See https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2016</p>
Carbon saving attributed to other project investors		Please summarise the total lifetime carbon dioxide savings (total carbon savings over the lifetime of your project) achieved by your project that will be attributed to other project investors
Total project carbon savings		Please summarise the total lifetime carbon savings attributable to your project.

3. Additional community benefit

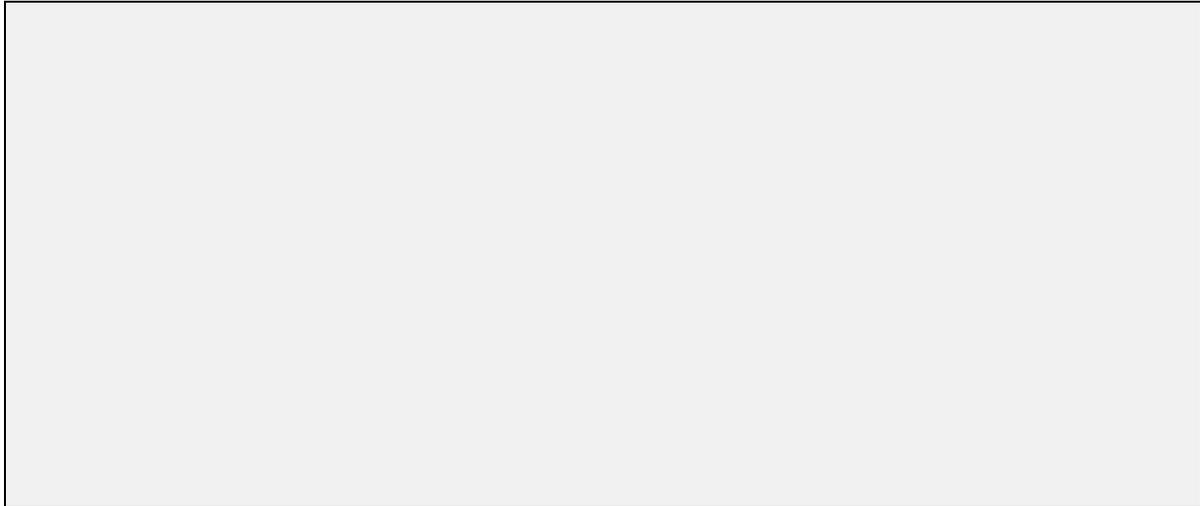
Please describe any additional community benefits that your project will deliver. You may want to consider describing:

1. The number of additional jobs/ apprenticeships/ training opportunities that your scheme will deliver and you approach to delivering these;
2. The degree to which differing communities will be engaged with and benefit from your project, through ownership, consultation or governance;
3. Additional environmental benefits associated with your project i.e. air quality improvements, waste reductions, encouraging biodiversity etc. – please quantify these where you can;
4. Additional health benefits associated with your project – where these are described, please make reference to the appropriate evidence base associated with this.



4. Innovation and strategic importance

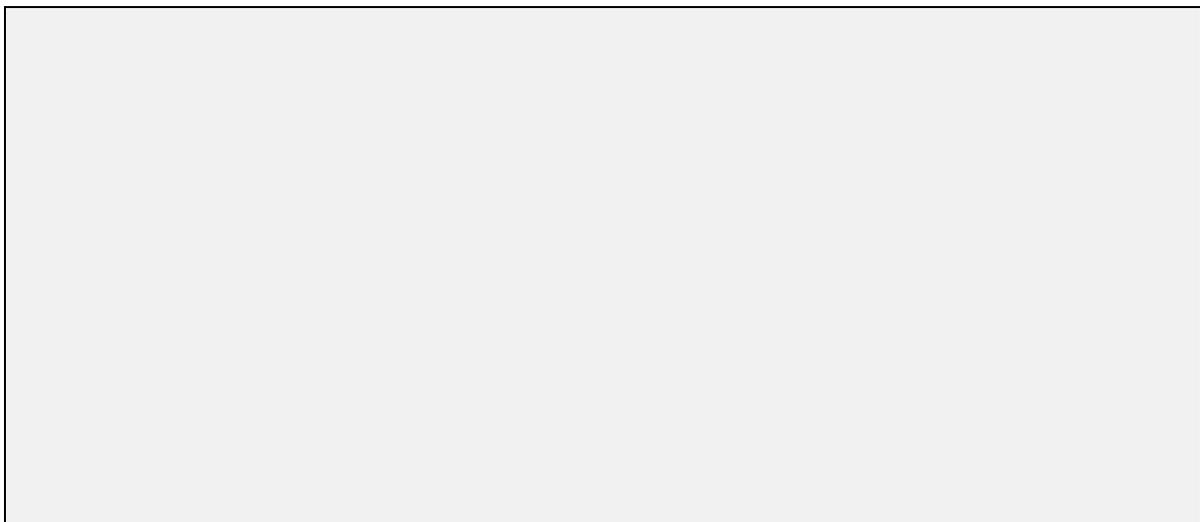
Please describe any elements of your project that you believe to be innovative, or of strategic importance in demonstrating new approaches, or best practice approaches, to the delivery of cost-effective carbon dioxide savings. Please explain why you believe these elements to be innovative or of strategic importance.



5. Deliverability

It is important that we understand how you intend to deliver the proposed project and who will be responsible for implementing it. Please complete the following to provide that information.

- i. Who will be responsible for delivery of the project (e.g. your own organisation or a separate organisation on your behalf)?**



- ii. Do you have approval from your organisation to undertake the project and if so please provide evidence of this (for example a formal decision letter or meeting minutes demonstrating that approval has been given)? If you do not yet have such an approval please set out your timetable for gaining that approval and identify who would be responsible for providing that approval.**

- iii. Do you have a delivery vehicle in place for the implementation of this project? (Who will manage the project delivery? who are they responsible to? How will project budget and finances be managed? How will be project be managed on a day to day basis? If relevant, who will be responsible for the management and maintenance of the project once it has been delivered?)**

- iv. If you do not have a delivery vehicle in place, how do you propose to secure a delivery vehicle, and when will you have this in place?

--

- v. Please set out the timescales for the delivery of your project below from receipt of funding to realisation of carbon savings

Project milestone	Date to be achieved

- vi. Please describe the risks to the delivery of your project and your proposed mitigation

Risk	Likelihood of realisation	Impact if realised	Proposed mitigation

6a) Carbon Offsetting via efficiency measures: Request for information

Proposals for offsetting carbon savings via energy efficiency need to provide the following information to enable assessment.
1. Please describe the specific aspects of energy use / other carbon savings that are being targeted. INSERT TEXT
2. What is the proposed solution? Please state anticipated performance of current and final system, e.g. U value, efficiency of equipment etc. INSERT TEXT
3. How many homes / other buildings are involved and of what sizes? INSERT TEXT
4. What is the expected total cost of the interventions planned? INSERT TEXT
5. What is the expected annual carbon saving from the measures planned? INSERT TEXT
6. What is the expected annual operating cost saving? INSERT TEXT
7. Which calculation method has been used? SAP / RDSAP / CERT / iSBEM / other INSERT TEXT Note: it is expected that one of the named schemes is used, if not the reason needs to be explained. Please provide the relevant calculation output (e.g. SAP sheet) to explain how the estimate of carbon savings was carried out.

It is expected that nearly all proposals for retrofit of homes will attach analysis using either RDSAP (and in-use factors required for ECO or Green Deal) or CERT calculation approaches. Projects involving efficiency improvements for non-residential buildings are expected to present calculations using iSBEM. In exceptional circumstances the above standardised methodologies may not be appropriate. In these instances, the reasons for using an alternative method should be provided and a bespoke

calculation should be submitted providing a breakdown of the measures proposed and an analysis of the carbon savings from first principles. The calculation should allow for installed capacity, hours of use and the anticipated method of control.

The measures that may be considered include

- Cavity Wall Insulation
- Loft Insulation
- Heating Controls
- Boiler replacement
- Fuel Switching (fuel type, not supplier) e.g. oil to gas
- Window Glazing
- Draught-proofing
- External Wall Insulation
- Energy Efficient Lighting
- Efficient non-domestic equipment (fans, pumps etc).

6 b) Carbon Offsetting via renewable energy: request for information

Proposals for offsetting carbon savings via renewable energy systems need to provide the following information to enable assessment. The standard procedures cover the following technologies: PV, Wind, hydro, Solar Thermal, Heat Pumps, Biomass boilers, CHP. For other less common technologies a specific approach will be needed. An example for anaerobic digestion is provided in Appendix 2: Example calculation for Anaerobic Digestion.

1. What form of renewable energy system is proposed?

INSERT TEXT

2. What scale of system is proposed (kW and e.g. m²)

INSERT TEXT

3. Where is/are the system/s to be located?

INSERT TEXT

4. What is the expected total cost of the interventions planned?

INSERT TEXT

5. What is the expected annual carbon saving from the measures planned?

INSERT TEXT

6. Which calculation method has been used to estimate carbon savings?

SAP / RDSAP / SBEM / MCS / CHPQA / other

Note: it is expected that one of the named schemes is used, if not the reason needs to be explained. Unless the proposed project's carbon saving is calculated using an established assessment methodology (BREEAM, SAP, etc) please use the latest Defra calculation methodology. See <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2016>

INSERT TEXT

Please provide the calculation used to estimate the carbon savings expected, following the method selected.

INSERT TEXT

Further details of the type of data that are expected to be needed for these calculations are provided in Appendix 1: Renewable energy information requirements.

6 c) Carbon Offsetting via embodied energy: Request for information

To demonstrate savings from embodied energy, it is always necessary to calculate the embodied energy of what is being proposed, and compare this to the standard alternative. This may be either a whole building, or a specific part of a building or another system. For a simple system it may be possible to use just this form, but normally a longer report will be needed to contain the information needed.

Proposals for offsetting carbon savings via embodied carbon need to provide the following information to enable assessment.

**1. What is the baseline solution that the proposal is being compared to?
Supporting information to provide details of the quantities of the different materials needed. This solution cannot be chosen to be deliberately bad, but must be a 'standard solution'.**

INSERT TEXT

**2. What is the proposed solution that is expected to deliver the carbon savings?
Please provide supporting information for details of the quantities of the different materials needed.**

INSERT TEXT

3. Please provide an estimate of carbon savings expected, and the degree of uncertainty in the calculation. This should be provided in the form of a summary showing the quantities and embodied carbon rates for each material. Unless in specific (and fully explained) circumstances, the following link should be used to calculate embodied carbon:

<http://www.circularecology.com/embodied-energy-and-carbon-footprint-database.html#.V5jXf1JzOM8>

INSERT TEXT

4. Please summarise the source of the embodied carbon rates used, and explain how the waste, transport of materials, their recycled content and construction site energy has been included in the assessment.

INSERT TEXT

A simplified example calculation is given in Appendix 2.

6 d) Carbon Offsetting via behaviour change: request for information

Proposals for offsetting carbon savings via behaviour change need to provide the following information to enable assessment. Either complete here or provide responses to these in a separate document.

1. What specific aspects of energy use / other carbon savings are being targeted through the behaviour change programme?

INSERT TEXT

2. In relation to each end use of energy targeted, what behaviour(s) are you seeking to change?

INSERT TEXT

3. What are the methods you propose to deploy to encourage this change?

INSERT TEXT

4. How many homes / users are involved? How many occupants are you seeking to influence?

INSERT TEXT

5. Please provide an estimate of the carbon savings expected, broken down by the different energy end uses you are targeting.

INSERT TEXT

6. For how long will the activities aimed at changing behaviour be continued for?

INSERT TEXT

7. What plans do you have for quantifying how effective your project has been in delivering the savings you are anticipating?

INSERT TEXT

Appendix 1: Renewable energy information requirements

Solar PV

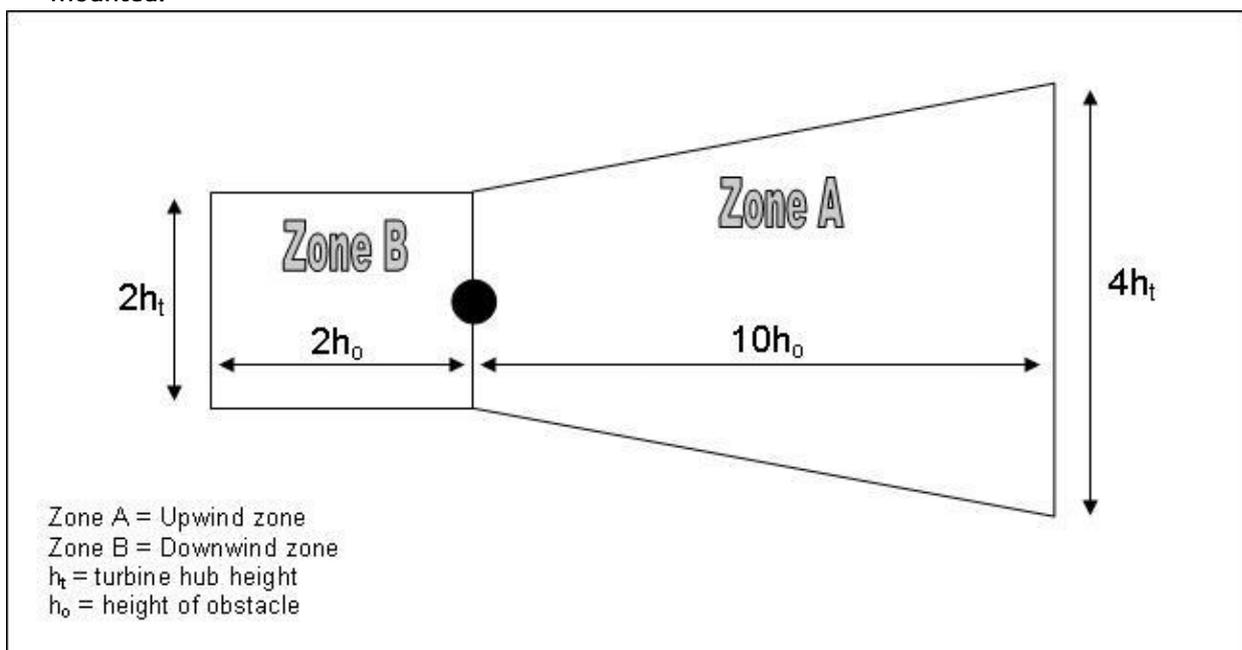
Information to be provided by the project proposer:

- Installed capacity of the installation (in kWp or m² and efficiency)
- Orientation (N, NE, NW, S, SE, SW, E, W)
- Pitch (degree from horizontal)
- Description of levels of over-shading
- Scaled plan of the proposed installation including obstacles or surrounding features

Wind

Information to be provided by the project proposer:

- Installed capacity of the installation (kW)
- The turbine Annual Energy Performance Curve from the manufacturer
- Number of turbines
- Rotor diameter of each turbine
- Hub height of each turbine
- Scaled plan and elevation of the proposed installation including obstacles or surrounding features
- Provide the postcode and grid reference of the site location, e.g. for postcode SW1A 2AW the Land Registry reference would be TQ301802. Guidance on how to find the LR grid reference can be found here:
<http://tools.decc.gov.uk/en/content/cms/windspeed/windspeed.aspx>
- Provide a description of the terrain 1km upwind and 500m downwind of the installation (flat grassland, gently undulating countryside, farmland with high boundary hedges, woodland or low rise urban / suburban areas, dense urban areas).
- Provide a description of any significant obstructions surrounding the installation. A significant obstruction is considered to be any solid item (e.g. building, wall etc) or semi permeable item (e.g. trees or bushes) that is greater than 0.5m at its widest part and reaches to a height greater than 0.25 of the hub height of the turbine. **Note:** This includes any building on which the turbine is mounted.



Hydro

Information to be provided by the applicant

- In line with MIS3006 installers shall provide an estimate of average energy performance based on the system design and specification, the flow duration curve and head duration curve of the watercourse.
- The maximum hydro turbine flow rate should be related to the long-term annual mean flow available at the site, and the relationship should be demonstrated. A calculation, or series of calculations, should be clearly presented to explain how the maximum hydro turbine flow rate was determined from the flow data. The source of the flow data shall be stated and justified in the calculations for the site. This should include a clear statement of the percentage of an 'average flow' year that the hydro turbine would be operating at its maximum flow rate, the percentage it would be operating at a part flow rate, and the percentage of the year the hydro turbine would be shut down due to insufficient flow.
- Installers must list all known Environment Agency (EA) or Canal and Rivers Trust constrictions of system usage on the specific watercourse and include restrictions in the overall performance estimation. Information on navigation or conservancy impacts should also be included where relevant along with evidence of landowner consent.
- Installed capacity of the turbine(s)
- Capacity Factor for the system
- Head of the system
- Scaled plan of the proposed installation

Solar thermal

Information to be provided by the applicant

- Total collector aperture area (m²)
- Floor area and type of dwelling or building being served
- Panel model information (Flat plate? Evacuated tube?)
- Orientation (N, NE, NW, S, SE, SW, E, W)
- Pitch (degree from horizontal)
- Description of levels of overshadowing
- Scaled plan of the proposed installation including obstacles or surrounding features
- If available, domestic hot water demand of the building, either based on metered data or calculated with building modelling
- If available, collector zero loss efficiency (to be sourced from BS EN 12975-2, *Thermal solar systems and components – Solar collectors – Part 2: Test methods*)
- If available, collector heat loss coefficient (to be sourced from BS EN 12975-2, *Thermal solar systems and components – Solar collectors – Part 2: Test methods*)
- If available information on the solar store: combined solar store (yes/no), total hot water store volume, dedicated solar volume

Heat pumps

Information to be provided by the applicant

- Scaled plan of the proposed installation including obstacles or surrounding features
- Floor area and type of dwelling or building being served
- Space heating, cooling and water heating system type being replaced/supplemented (e.g. standard gas boiler, electric heater)
- If installation is carried out following MCS guidance MIS3005 and Heat Emitter Guide, the full calculation to derive the system performance should be submitted.

Otherwise the following should also be provided:

- Domestic hot water, space heating and cooling demand of the building, either based on metered data (from bills) or calculated with building modelling. The source of the data should be clearly explained.
- Heat pump type (air to air, air to water, ground to water etc.).
- Proportion of space heating and/or domestic hot water demand to be met by the heat pump
- Model, specifications and number of heat pumps installed.

Description of the system configuration including: is it meeting both space heating and hot water demand listing the following: heat emitters (e.g. radiators, underfloor heating, fan coil units etc.); operating temperatures; hot water or cooling top up system (if applicable) and volume of any hot water storage available in the building.

Biomass heating

Information to be provided by the applicant

- Scaled plan of the proposed installation including obstacles or surrounding features
- Floor area and type of dwellings or building being served
- Space heating and water heating system type being replaced/supplemented (e.g. standard gas boiler, electric heater)
- Domestic hot water demand of the building, either based on metered data or calculated with building modelling. The source of the data should be clearly explained.
- Space heating demand of the building, either based on metered data or calculated with building modelling. The source of the data should be clearly explained.
- Proportion of space heating and/or domestic hot water demand to be met by the biomass system
- Model, installed capacity and specifications (including efficiencies) of the biomass boiler installed.
- Type of biomass fuel used.

CHP

Information to be provided by the applicant

- Scaled plan of the proposed installation including obstacles or surrounding features
- Floor area and type of dwellings or building being served
- Space heating and water heating system type being replaced/supplemented (e.g. standard gas boiler, electric heater)
- Domestic hot water demand of the building, either based on metered data or calculated with building modelling. The source of the data should be clearly explained.
- Space heating demand of the building, either based on metered data or calculated with building modelling. The source of the data should be clearly explained.
- Proportion of space heating and/or domestic hot water demand to be met by the CHP system
- Proposed use for the electricity generated by the CHP system
- Model, installed capacity and specifications (including thermal and electrical efficiencies) of the CHP installed.
- Capacity of any thermal storage to be provided in the system.
- Fuel used by the CHP system

Appendix 2: Example calculation for Anaerobic Digestion

The established schemes for renewable energy do not currently include anaerobic digestion (AD) within the calculation approaches. The RHI scheme provides an incentive for bio-gas, but on the basis of measurements of delivered kWh of heat, which avoids the complexity of trying to calculate gas generation from waste. The particular problem is that a key parameter of waste in terms of biogas production is the fraction of Volatile Solids (VS) within the waste. This is defined as the proportion of the mass of a material that can be burnt off at 555°C, but in simpler terms is the part that can be treated with AD. For food waste it is heavily dependent on the water content of the material, as the water brings no benefit to the process in terms of gas generation.

The inputs required are therefore as follows:

- Waste material to be processed per year (kg) - mass
- Expected % of Volatile Solids [default will be 25%] - VS
- Expected system efficiency [default will be 50%, limit around 75%] - eff

The product of these three factors and a constant of 5.1 kWh/kg gives an estimate of the kWh of calorific value of the gas produced.

$$\text{Calorific value of gas generated} = 5.1 \times \text{mass} \times \text{VS} \times \text{eff} \quad \text{kWh}$$

For most systems the outcome will be around half to one kWh of gas per kg of food waste collected.

The gas produced from an AD plant is a mixture of methane and carbon dioxide and will need to be used in a boiler or system adapted to burn it, or processed further to use in a normal boiler or CHP engine.

For an AD proposal, additional information will also be needed to demonstrate that the design has been developed sufficiently. These are as follows:

1. What is the source of the fuel (waste material)?
2. Who is collecting the fuel and from what geographic area?
3. How is the fuel added to the system (continuous / batch)?
4. What is the maximum capacity of the system per year?
5. Will gas be stored before use? If so in what type and size of container?
6. What will the generated gas be used for? Are there clients contracted to take heat / power?
7. What equipment will be used to use the heat, and is it capable of working on the biogas produced?
8. Who will be maintaining the system during operation?

Appendix 3: Embodied carbon calculation

An example of a fictitious calculation is given below:

Baseline design			
<i>Material</i>	<i>Quantity</i>	<i>Embodied carbon rate</i>	<i>Embodied carbon</i>
	kg	kgCO _{2e} /kg	kgCO _{2e}
Material a	2	1	2
Material b	2	10	20
Material c	3	0.1	0.3
			0
			0
			0
Total	6		22.3
Proposed design			
<i>Material</i>	<i>Quantity</i>	<i>Embodied carbon rate</i>	<i>Embodied carbon</i>
	kg	kgCO _{2e} /kg	kgCO _{2e}
Replacement for material a	1	1	1
Replacement for material b	4	1	4
Replacement for material c	5	0.2	1
			0
			0
			0
Total	10		6
Expected saving			16.3

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