



COMMISSION FOR A
SUSTAINABLE LONDON 2012

Thematic Review

Extinguishing Emissions?

A review of the approach taken to carbon measurement and management across the London 2012 programme

December 2009



Summary

Preparation for and staging of the Games inherently means that there is a net increase in the UK's contribution to global carbon emissions. Since 2006, we have urged Key Stakeholders¹ to treat carbon management as a strategic issue; to define, measure, reduce and mitigate the negative impacts in an open and transparent way. We commend the groundbreaking work led by LOCOG to define the carbon footprint and make the following recommendations.

Measuring the carbon footprint

1. Full details of the carbon footprint calculations and underlying assumptions should be published by autumn 2009, ahead of the Copenhagen summit.
2. Emissions should be counted when they happen, and not amortised over the life of legacy facilities, deferring responsibility for mitigation to future generations.
3. The calculations and underlying assumptions should be adequate for the purpose of developing a strategy. Emphasis should now move on to avoiding emissions and mitigating the residual footprint.
4. The reference footprint should be recalculated and published on a regular basis. Assumptions should be explicitly stated to ensure openness and transparency.
5. The ODA should calculate embodied emissions based on “as built” data for at least one, and preferably more, significant permanent venues to enable future projects to understand the correlation between “reference” and “as built” emissions. Failure to do this would significantly delay wider understanding of this important issue.

Taking responsibility

6. Each individual Key Stakeholder should be responsible for reducing or avoiding emissions within their area of responsibility. The Commission for a Sustainable London 2012 has a responsibility to assure this activity.
7. Responsibility for the whole residual footprint should rest with the Olympic Board, who should allocate responsibility for mitigation to the organisation best placed to achieve it. This will not necessarily be the organisation that caused the emissions. The organisations to whom responsibility is allocated could be in wider government; they will not necessarily always be Key Stakeholders.
8. The marginal carbon cost of decisions should be factored into operational decision-making, taking into account life-cycle carbon impacts where possible and in a transparent and open manner.

¹ For the purposes of this paper, the Key Stakeholders are the Olympic Delivery Authority (ODA), the London Organising Committee for the Olympic Games and Paralympic Games (LOCOG), the Greater London Authority (GLA), the Government Olympic Executive (GOE) and the London Development Agency (LDA).

Mitigation of the residual footprint

The residual footprint should be mitigated using a variety of techniques:

9. Gold standard offsets, or other equally robust method, for flights for competitors and officials, in accordance with the bid commitments². If flights are not to be offset, mitigation of these emissions must be achieved using alternative means.
10. Creation of a fund to support carbon reducing projects that also support social/economic objectives locally and around the world. This fund could be supported by commercial partners if appropriate and possibly from a voluntary carbon contribution linked to games and transport tickets. Collection and distribution must be transparent.
11. Mass participation programmes, such as the EDF Energy campaign, where, as far as practical, the results should be quantifiable and additional.
12. Using the legacy of knowledge to reduce carbon in future projects. For example, application of BS8901 for future events, and development of a new standard for managing embodied emissions in construction projects. If this initiative were to be started promptly by Government, it would be possible to launch a new standard to coincide with the Games.
13. LOCOG should encourage the IOC to include carbon footprint measurement and management for future bids and make this part of the decision criteria for host city awards.
14. DCMS should consider carbon footprint measurement and management as part of the bid criteria for other major events.

² <http://www.london2012.com/documents/candidate-files/theme-5-environment.pdf>

Introduction

1. Aim of the paper

- 1.1 This paper is organised in two parts. The first aims to summarise the progress being made by London 2012 against their stated energy and carbon targets and provides recommendations for improvements. The second part provides a commentary on the work to develop the London 2012 carbon footprint and contains a range of recommendations.
- 1.2 For the purposes of this paper, the Key Stakeholders are the Olympic Delivery Authority (ODA), the London Organising Committee for the Olympic Games and Paralympic Games (LOCOG), the Greater London Authority (GLA), the Government Olympic Executive (GOE) and the London Development Agency (LDA).

2 Roles and responsibilities

- 2.1 The London 2012 Sustainability Plan³, published in November 2007, sets out how London placed sustainability at the heart of its bid for the 2012 Games and confirms that this remains central to the vision for 2012. This plan builds on the Sustainability Policy⁴ formally agreed by the Olympic Board in June 2006. It further expands on the commitments set out in 'Towards a One Planet Olympics'⁵ developed by the London 2012 bid company, WWF and BioRegional during the bid.
- 2.2 The London 2012 commitments relating to energy and carbon are captured in a range of documents. These are summarised in Appendix 1.
- 2.3 The ODA is responsible for one of the largest and most complex construction programmes in the country. It has tight financial and time constraints and complex internal interdependencies with a range of contractors delivering different aspects of the development. It is responsible for the Masterplan for the Olympic Park and the design and construction of the Park for the Games and for the immediate post-Games legacy. It is also responsible for developing and implementing the Olympic Transport Plan and for construction of certain venues outside the Park.
- 2.4 The ODA is committed through a S106 planning condition to achieve a 50% reduction in carbon emissions, (against 2006 Building Regulation standards), for the built aspects of the development in its legacy form by 2013. This is being achieved through:
 - Improvements in energy efficiency ("mean")
 - Efficient distribution with a tri-generation energy centre supplying heat, cooling and electricity ("lean")
 - On-site renewable energy ("green")

3 <http://www.london2012.com/documents/locog-publications/london-2012-sustainability-plan.pdf>

4 <http://www.london2012.com/documents/locog-publications/london-2012-sustainability-policy.pdf>

5 <http://www.london2012.com/documents/bid-publications/towards-a-one-planet-olympics.pdf>

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- 2.5 The ODA reports progress against this target annually to the Planning Decisions Team (PDT). The latest 'Interim Olympic Park Legacy Energy Statement' was submitted to PDT on 23 July 2008. The next is due in early 2010.
- 2.6 LOCOG is a private company responsible for the staging of the Games, for the provision of temporary venues and sites, for the temporary overlay at existing and new venues and for the live sites. It is recognised as the official organising committee by the International Olympic Committee and the International Paralympic Committee. There are three phases to LOCOG's programme: (i) pre-Beijing planning and sponsorship; (ii) Beijing to test events; and (iii) test events to Games-time. The IOC Coordination Commission which visits the host city twice a year has consistently reported that London 2012 is on track to deliver the Games. The planning and phasing of LOCOG operations is very different to the ODA, whose key delivery date must coincide with the test event programme and the roll-out of the temporary Games-time overlay.
- 2.7 LOCOG has led work to develop the carbon footprint for preparation and staging of the Games
- 2.8 LOCOG had committed to sourcing 20% of Games-time electricity from new local renewable sources and has appointed an Engineering Services Partner, Atkins, who will assist in delivering against this target. LOCOG has also committed to a low / zero carbon Olympic Torch and Cauldron and is working with Sustainability Partner EDF Energy to achieve this. It has also committed to setting fleet wide emission standards for the fleet of vehicles for athletes, the workforce and officials.
- 2.9 The Olympic Park Legacy Company (OPLC) has been established to take forward development of the Olympic Park after the Games and is responsible for carbon in legacy. The LDA has developed the Legacy Masterplan Framework (LMF) – the spatial development strategy for the Olympic Park after the Games. An as yet unpublished protocol which sets out the sustainability objectives for the legacy plans has been developed as part of the LMF activities. Draft waste and energy strategies have been developed. The LDA is taking responsibility for a recommendation from the Commission⁶ to ensure that the Olympic Park is able to deliver zero / low carbon heat and electricity, utilising a wider waste strategy for the Lower Lea Valley to supply fuel derived from organic waste. The LDA has commissioned consultants to estimate the carbon footprint for the early 2009 legacy proposals. We understand that this work will be taken forward by OPLC.

6 Recommendation 6, Commission for a Sustainable London 2012, 2008 Annual Review, http://www.cs london.org/documents/CSL_2008_Annual_Review.pdf

SECTION 1

3. Performance against energy related commitments

Most energy and carbon commitments are on track to be achieved; for a number it is too early to say. Progress is summarised in the table below.

	Owner	Indicator / outcome	Target	Progress (at September 2009)	Status
Preparation	ODA	Reductions against 2006 Part L Building Regulations for permanent venue structures	15% for venues	<ul style="list-style-type: none"> ■ All new permanent venues are predicted to meet or exceed the target ■ The Olympic Village is predicted to achieve Code for Sustainable Homes Level 4 (i.e. 44% saving) 	On track
	ODA	Carbon reduction: A reduction in carbon emissions (against 2006 Building Regulation standards) for the permanent built aspects of the development by 2013	50%	<ul style="list-style-type: none"> ■ The ODA is currently projecting to achieve a significant proportion of this carbon reduction for the Olympic Park through: <ul style="list-style-type: none"> • Energy efficiency savings (above) • A centralised energy centre designed, built, financed and operated by COFELY (part of GDF SUEZ Energy Services) on a 40 year concession, containing: <ul style="list-style-type: none"> - Gas-fired combined cooling, heating and power (CCHP) plant - Biomass boilers providing heating and cooling - Ammonia chillers • 2MWe wind turbine (subject to contract and Secretary of State consent) ■ It is assessing options to achieve 50% carbon savings through: <ul style="list-style-type: none"> • An energy efficient LED external lighting strategy is in development • A detailed study is underway to assess the opportunities for Park-wide small scale renewables • Further options at the Energy Centre 	On track
	ODA	Renewable energy by 2013	20%	<ul style="list-style-type: none"> ■ Current ODA plans will achieve a significant proportion of this 	

	Owner	Indicator / outcome	Target	Progress (at September 2009)	Status
Preparation				renewables target and the ODA has options to increase this to over 20% through the measures outlined above.	On track
	ODA	Low embodied energy materials	n/a	<ul style="list-style-type: none"> ■ The ODA requires projects to meet a target for use of recycled materials (recycled materials – 20% by value; recycled aggregate – 25% by weight). ■ The ODA has established a site-wide aggregate contract which commits to transporting 99% of materials by rail / water and a site-wide concrete contract that commits to meeting or exceeding the London 2012 target for the transport of construction materials. Both contracts also commit to using recycled aggregates. These factors both assist in lowering embodied energy. 	ODA – On track, though see logistics finding below
	London 2012 (ODA & LOCOG)	Transport of construction materials to and waste from the site by rail or water	50%	<ul style="list-style-type: none"> ■ The ODA is achieving greater than 50% of construction materials (by weight) transported to the site by rail. With the opening of Three Mills Lock, the waste management contractor is able to take waste from the site by water ■ To date, much of the materials transported by rail have been bulky aggregates. To continue to achieve the target cumulatively during the fit out stages will require complex logistical planning and coordination ■ LOCOG has not explicitly set a target for transport of goods though is committed to a London 2012 target for transport of construction materials in the 2007 London 2012 Sustainability Plan 	ODA - On track LOCOG - Too early to say

	Owner	Indicator / outcome	Target	Progress (at September 2009)	Status
	ODA	Monitoring & measurement	n/a	■ The ODA does not require contractors to report on carbon emissions (embodied or otherwise)	ODA – n/a
	ODA	Construction worker travel	n/a	■ Local recruitment, shuttle buses, on-site bus service are in place. Workers are required to cycle or travel by public transport	On track
Staging	LOCOG	Minimising embodied impacts	n/a	■ LOCOG's Sustainable Sourcing Code ⁷ requires suppliers and licensees to maximise resource and energy efficiency and has produced Guidelines on Carbon Emissions of Products and Services ⁸	On track
	LOCOG	Games-time electricity requirements met by new local renewable energy sources	20%	■ LOCOG has appointed Atkins as a Tier 3 Partner to provide Engineering Services. This includes developing solutions to achieve this challenging target	Too early to say
	LOCOG	Low carbon flame for the cauldron	n/a	■ LOCOG has appointed EDF as a Tier 1 Partner, also a sustainability partner, who has committed to explore opportunities for a low carbon flame	Too early to say
	ODA	Active Spectator Programme	n/a	■ An Active Spectator Programme is in development with a steering group containing representatives from major cycling and walking bodies	On track
	ODA	Green Transport Planning for spectators	Public Transport Games	■ Travel plans aimed at minimising carbon are being developed for each venue (Olympic Park and off-site)	On track
	LOCOG	Fleetwide emissions standard (Category M1 Passenger Vehicles, i.e.	120g/km	<ul style="list-style-type: none"> ■ Dependent on negotiations with an automotive partner ■ The IOC have indicated that plans to find an automotive partner as a TOP sponsor "are on hold because of the financial slump in the car industry" 	Too early to say

7 <http://www.london2012.com/documents/locog-publications/sustainable-sourcing-code-nov-08.pdf>

Owner	Indicator / outcome	Target	Progress (at September 2009)	Status	
	fewer than 8 occupants)		<ul style="list-style-type: none"> ■ No target has been set for buses 		
LOCOG / Government	Inspiring behaviour change	n/a	<ul style="list-style-type: none"> ■ EDF launched Team Green Britain and Green Britain Day aimed at encouraging behaviour change ■ Defra has commenced work to develop a behaviour change programme linked to the London 2012 Games 	Too early to say	
Programme-wide	London 2012	Develop and publish Carbon Footprint and Carbon Management Strategy	n/a	<ul style="list-style-type: none"> ■ A Reference Footprint has been developed and the impact of committed activities that avoid carbon has been quantified. The impact of a range of potential further measures which avoid emitting carbon during construction and staging the Games has been estimated and Key Stakeholders are considering options to address the residual footprint ■ It has not yet been agreed how the residual footprint will be addressed 	Behind schedule
	London 2012	Measurement of actual carbon footprint	n/a	<ul style="list-style-type: none"> ■ The extent to which actual emissions will be monitored and reported is unclear and contractors are not contractually obliged to do so 	Behind schedule

4. Findings

- 4.1 Energy centre in legacy: The CCHP in the energy centre will use gas as a fuel supply. The engines that will be installed are designed to be suitable for use with other fuel sources in future, for example, biogas. The energy centre makes a significant contribution to the carbon emissions target and the contract negotiated early in the project has enabled private sector investment in a comprehensive utilities network that will serve the Olympic Park with low carbon energy for at least 40 years in legacy. However, by 2016 government policy suggests that all new homes should be zero carbon. Under the terms of the contract, all future development in the Olympic Park must connect to the energy centre for heating. The current design will not meet the 2016 requirement for new homes. In our 2008 Annual Review, published in May 2009, we made a recommendation (no. 6) that “the LDA should ensure that the Olympic Park infrastructure is able to deliver zero carbon energy by 2016 at the latest, but preferably by 2012, utilising a wider waste strategy for the Lower Lea Valley to supply fuel derived from organic waste combined with the renewable energy solutions provided by the ODA”⁹. The exclusive supply of heat for heating and hot water by COFELY from the Energy Centre to Olympic Park developments precludes use of any other technologies to provide heat, e.g. solar thermal, heat pumps, micro-CHP and rules out innovation, except at a site-wide scale. The contract will need to be actively managed by the Olympic Park Legacy Company to ensure that COFELY delivers carbon savings in legacy. We understand that initial discussions have been held. The air quality implications of any shift towards greater use of biomass or use of organic waste will need to be considered. If COFELY does not source a renewable supply, their 40 year exclusive contract makes it impossible for developers to build zero carbon housing without substantial investment in alternative projects (e.g. solar PV) to mitigate the impact. According to its website, COFELY is committed to designing and deploying solutions to increase environmental and energy efficiency, reduce greenhouse gas emissions and to encourage the development of local renewable energy.
- 4.2 Logistics: Investment in constructing rail heads to serve the Olympic Park and upgrading Three Mills Lock enables a much higher proportion of materials to be transported to, and waste from, the site by sustainable means compared to other construction projects. This leads to a large saving in carbon emissions and a reduction in traffic congestion than might otherwise have been, with resultant benefits in terms of air quality, dust and reduced noise and nuisance. The good performance of the ODA has been while bulky materials have been transported to the site. As construction moves into the fit out stage and the programme moves from preparation to staging, complex logistical planning will be required to ensure that the 50% (by weight) target is maintained as a greater variety of goods are brought to the site. There are exemplary case studies from elsewhere that suggest that further transport-related savings can be achieved through materials logistics planning. For example, Hammarby Sjöstad in Sweden achieved a 90% saving in CO₂ emissions through use of a logistics centre¹⁰. The ODA has established logistics centres which operate

⁹ http://www.cslondon.org/documents/CSL_2008_Annual_Review.pdf

¹⁰ http://www.wrap.org.uk/downloads/MLP_workshop_presentation.fd46b039.6675.pdf

to co-ordinate road deliveries to the site. LOCOG does not have any public targets for transportation of goods to the Olympic venues but plans are in development; these should be developed into clear public objectives.

- 4.3 HFCs: HFC-free district cooling is provided by the energy centre to the Handball Arena and Media Centre. Other venues have to install local cooling systems where required. The Commission highlighted HFCs with high global warming potential (GWP) as an issue in the 2007 Governance Review and again in the 2008 Annual Review. In June 2009, the Olympic Board approved a policy statement which creates a presumption against use of HFCs with high GWP and a requirement to seek alternatives where possible¹¹. This is significantly better than any previous Games and sets a new standard for buildings in the UK and elsewhere.
- 4.4 Embodied energy in materials: The London 2012 Sustainability Plan contains a commitment to require contractors and suppliers to demonstrate that the amount of energy embodied in materials has been minimised. The ODA does not explicitly require contractors to do this, relying instead on achievement of targets for recycled content and transport of material by rail / water. A lesson learned from the carbon footprinting work outlined in the following section is the need to set CO₂e (carbon dioxide equivalent, taking account of CO₂ and other greenhouse gases) budgets or parameters upfront for the design teams to work within, to ensure that carbon is factored into all decision-making and monitored from the outset.
- 4.5 Temporary materials: Half of LOCOG's direct carbon footprint relates to temporary fit out and overlay of venues. LOCOG has set up a Temporary Materials Forum of experts to advise on appropriate choice of materials to minimise embodied impacts. The ODA is represented at this forum. The outputs from the forum will eventually be disseminated publicly as a toolkit, contributing to a legacy of learning from the Games.
- 4.6 Orient Way: Railway sidings had to be reconstructed to the north of the Olympic Park. This was completed using sustainable methods with 99% of the demolition and site clearance waste from the Orient Way project being recycled, and over 90% being reused on the project itself. The project achieved an 'excellent' CEEQUAL rating, with the highest score ever for a rail project. The approach adopted was measured and found to achieve 23%¹² carbon savings compared to a 'business as usual' approach. The lessons learned from this exemplary project, and the extent to which they are replicable, should be disseminated widely within the construction and civil engineering sectors.

¹¹ <http://www.london2012.com/documents/imported/use-of-hfc-policy.pdf>

¹² August 2008, ODA Transport update, Issue 2: Transport to 2012 and beyond
<http://www.london2012.com/documents/oda-transport/pace/pace-2-accessible.pdf>

SECTION 2

5. Carbon footprint

- 5.1 London's bid to host the 2012 Olympic and Paralympic Games contained the promise to host the most sustainable Games ever. A sustainable Games is synonymous with a low carbon Games. In the period following winning the bid, the Commission called for the carbon footprint to be estimated although there was no bid commitment to do so. The Commission welcomes the work done by the Key Stakeholders to take responsibility for estimating the carbon footprint and to develop proposals to mitigate the impacts. This work has been groundbreaking and detailed. It is also important to note that the selection of a single site in the most deprived area of London lends itself to consolidated utility provision in legacy and it is often said that 75% of expenditure is on facilities which will be used in legacy, delivering significant carbon savings in legacy compared to a conventional utilities solution. However, all development comes with a carbon cost and the Olympic Board need to decide how best to take responsibility for the carbon impact.
- 5.2 LOCOG, on behalf of the Key Stakeholders, appointed consultants to estimate the carbon footprint for preparation and staging of the London 2012 Olympic and Paralympic Games. The Reference Footprint is a baseline estimate of what the Games footprint would have been before commitments to avoid emitting carbon are considered. It is split into three categories based on ownership and influence over the emissions:
- Owned emissions, i.e. directly funded by London 2012 Key Stakeholders
 - Shared emissions, i.e. London 2012's share (by financial value) of emissions relating to jointly funded projects
 - Associated emissions, i.e. emissions associated with the Games and influenced but not funded by London 2012 Key Stakeholders, e.g. spectator travel
- 5.3 This is the first time that a full carbon footprint has been developed for a Summer Games in detail with boundaries that include embodied energy rather than just energy consumed during the period of the Games.
- 5.4 The reference footprint calculated for the period from bid win to closing ceremony is 3.4 million tonnes of CO₂e (carbon dioxide equivalent, taking account of CO₂ and other greenhouse gases). This is based on bid information and before adjustments to take account of the impact of cost-saving measures (e.g. reduction in temporary venues) and other steps taken to reduce CO₂e emissions. To put this into context, 3.4 million tonnes of CO₂e represents approximately 0.5% of annual UK emissions. The reference footprint has been calculated following GHG / carbon accounting principles and internationally recognised standards, although these are primarily designed to estimate historic rather than future emissions. The GHG protocol has been developed for organisations with ongoing operations and doesn't entirely fit a one-off project delivered by a number of different entities, and so a number of assumptions have had to be made, some of which may be open to interpretation. The calculations have been independently audited. The footprint assumes that all emissions are accounted for in the year in which impacts occur

(i.e. there is no amortisation over the lifetime). Ownership of elements of the footprint by Key Stakeholders is determined by financial spend.

- 5.5 The actual carbon footprint of the Games should not be as high as the Reference Footprint. There are a number of decisions that have been taken which mean that carbon emissions will be avoided. Some of these relate to programme scope changes and relocation or rescaling of venues, essentially cost-driven changes to venues and the Park since the bid. Others relate to specific measures taken to reduce actual carbon emissions, such as the low carbon concrete specification and site-wide contract, transportation of construction materials by rail and road, use of recycled / reclaimed construction materials.
- 5.6 There are also projected carbon savings associated with overlay and fit-out, a shorter torch relay, low carbon Olympic flame, sustainable food and more efficient Live Sites, as well as further possible reduction measures that may be implemented during construction.
- 5.7 The residual footprint is the Reference Footprint less the carbon avoided by measures committed to during construction and planned additional measures during the remainder of construction and staging the Games. This is the estimated net additional CO₂e emitted as a result of staging the Games in the UK and bringing investment in legacy infrastructure forward. There is a clear need to maximise the carbon avoided through the adopted measures.
- 5.8 A Carbon Management Stakeholder Workshop was held in May 2008 and attended by a range of London 2012 partners and stakeholders.
- 5.9 A Technical Advisory Group (TAG) of independent experts has been appointed to provide direction on key issues associated with the carbon footprint. The Carbon TAG has met six times (as of early June 2009). The Commission recommended people qualified to sit on this and attended the sixth TAG meeting as an observer.
- 5.10 The preliminary Reference Footprint was presented at the London 2012 Sustainability Conference in January 2009.

6. Findings

- 6.1 The Commission has encouraged Key Stakeholders to treat climate change as a strategic issue. We welcome the carbon footprint work carried out to date but are concerned at the delay in publishing it. It was due to be published in 2008 and is finally being published just prior to the climate change negotiations in Copenhagen in December 2009. Based on the Commission's engagement with stakeholders, we have found that wider stakeholders are generally supportive of the groundbreaking work done to assess the carbon footprint for preparation and staging of the Games. However, concerns have been expressed at the delay in publishing details of the footprint and Carbon Management Strategy, specifically around the willingness of the Key Stakeholders to be open about the carbon impact of the Games.

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- 6.2 The Reference Footprint should be published and recalculated on a regular basis. Assumptions should be explicitly stated to ensure openness and transparency. It is time to take responsibility for the carbon footprint.
- 6.3 We recognise that a significant challenge lies around communicating the findings of the carbon footprint in a meaningful way. For example, the majority of the impact is due to remediation and construction of the Olympic Park, major venues and infrastructure, and transport infrastructure projects which have been brought forward. It is not possible to estimate a non-Games scenario that would be meaningful and it is difficult to differentiate between Olympic-specific impacts, long-term regeneration and accelerated projects to present the true carbon impact of staging the Games in London.
- 6.4 When talking about carbon footprints, the first question that is often asked is “what’s the saving?” and the second is “what’s your target?” Neither of these questions is easy or even useful to answer in the context of the Games. Any saving would be measured against a notional “what might have been” and isn’t a real saving compared to a business that can make reductions in its carbon emissions year on year for ongoing operations. It is difficult to present a meaningful single overall target. Comparison with a reference scenario may help to get the message across to the public, while a number of specific individual targets should help inform management and design decisions.
- 6.5 Staging the Games inherently means that there is a net increase in UK carbon emissions and, in the Commission’s view, the most responsible way of addressing this is to minimise emissions as far as possible, seek to source renewable energy where possible and to mitigate any residual impacts through a mix of activities. To do nothing about the carbon footprint is an option that carries significant reputational risk. Individual bodies should avoid emissions as far as possible in order to minimise the residual footprint. We have seen evidence of activities being taken to reduce the carbon footprint, for example, the site-wide concrete and aggregates contract. These actions need to be rigorously quantified if they are to be claimed as reductions against the Reference Footprint.
- 6.6 It is not clear how the actual carbon footprint will be measured and monitored. Despite a London 2012 commitment in the 2007 London 2012 Sustainability Plan to measure the carbon footprint, the ODA does not require its Delivery Partner or contractors to report on this and it is not clear how LOCOG is measuring its footprint or factoring it into decision-making. A lesson learned from the footprinting work is that carbon measurement and management should be built into decision-making and contracts from the outset and designers should design with a carbon budget to guide them.
- 6.7 Emissions should be counted when they happen; no amortisation. The impact occurs from the point at which the carbon is emitted and, in the Commission’s view, it is unacceptable to defer recognising the impact.

6.8 The Commission believes that there should be collective responsibility at the Olympic Board to mitigate the residual footprint of the Games. Mitigation options range from independently verifiable offset options such as the CDM Gold Standard which can only be implemented in developing countries, through local and international carbon reduction projects, to London 2012 Partner and government projects which encourage behaviour change but are difficult to quantify and verify as real reductions, i.e. over and above that which would have occurred without the Games. These measures would have other benefits, such as improved air quality through use of rail, water and cycling and walking. The Commission cautions against excessive use of offsets and encourages the use of a suite of measures to address the residual footprint:

- Gold standard, (or equivalently robust), offsets for athlete and official flights, in accordance with the bid commitment
- Include a voluntary carbon levy on tickets
- Establish a group with the ability to raise funds and tasked with investing in local carbon reduction initiatives
- Mass participation / behaviour change programmes insofar as the reduction measures are quantifiable and additional
- Initiatives developed by sponsors if quantifiable and additional
- Initiatives that will result in wider reductions in carbon emissions, e.g. BS8901, construction industry initiatives such as a new standard for the embodied impacts of construction, or initiatives to create new green jobs

6.9 London 2012 has set clear boundaries to define the carbon footprint. However, there are emissions which will occur which are attributable to the Games, but may not easily be quantified, for example, the impact of TV viewing during the Games or the impact of City Operations. Where it is possible for the Key Stakeholders to use their influence to encourage changes to the activities of others, the Commission believes that they should do so, even where the emissions are not necessarily quantifiable. Partner organisations such as the IOC, Olympic Broadcast Service, national broadcasters could be encouraged to quantify wider impacts and / or indicators wherever possible, (such as additional viewer numbers during Games-time), to improve understanding of the impacts of future Games.

6.10 The ODA has limited opportunities to reduce its footprint further. Had the carbon footprint been undertaken sooner and the relative proportions known, a greater reduction could have been achieved. We would like to see the marginal cost of carbon factored into decision-making at the earliest stages of future projects and operational planning and life cycle carbon to be considered so that overall impacts are reduced, not just carbon in use.

6.11 In part, the construction component of the carbon footprint is larger than might have been expected because the accounting process and cut-off date only includes a very small part of the facilities' eventual operational energy use.

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- 6.12 The finding that more than half of the reference footprint relates to construction of the Park infrastructure and venues potentially has significant implications for choice of future host cities and for the construction industry in general. That is not to say that no construction should happen for future Games, but that embodied emissions should be minimised and any development should be linked to future carbon savings. The Commission believes that there is an opportunity for Government to take a leadership role in disseminating the methodology, bank of data and assumptions that have been developed and applying them to other projects. In particular, the London 2012 experience should be embedded within any future bids for major international sporting events such as the FIFA World Cup, and the carbon costs should be a central part of the decision-making within any major infrastructure project, such as Crossrail.
- 6.13 The Commission has not assigned a RAG to this review. However, carbon and climate change are such key issues that the Commission considers progress on this issue to be of paramount importance and will monitor activities closely.

Appendix 1 – Summary of carbon– related commitments

Candidature File – carbon¹³

- Games-time: 20% of the Olympic Park electricity requirements will be met by new local renewable energy sources such as advanced waste-to-energy technologies, photovoltaic panels, small scale wind turbines, bio-diesel generators and micro-co-generation for public lighting, venue, accommodation and electric vehicle power
- All additional site energy demand will be imported from off-site renewables including wind farms and marine current turbines
- Carbon offset programme for all Olympic travel

Towards a One Planet Olympics – London 2012 bid company, BioRegional, WWF¹⁴

- Strategy to reduce carbon dioxide emissions by minimising building energy demand and supplying from zero-low carbon and renewable resources
 - Games-time: Design and construction of Olympic facilities based on maximising energy efficiency and use of low carbon and renewable energy sources
 - Games-time: Basis for long-term sustainable energy infrastructure and management to be established
 - Legacy: Athletes' Village capable of being energy self-sufficient
 - Legacy: Distributed network of heating, cooling and power serving local communities
 - Legacy: Energy efficient sports venues
- Strategy to reduce the need to travel and provide sustainable alternatives to private car use
 - Games-time: All spectators travelling by public transport, walking or cycling to venues
 - Games-time: Carbon offset programme for international travel
 - Games-time: Individualised travel plans as part of integrated ticketing process
- Strategy to support consumption of local, seasonal and organic produce, with reduced amount of animal protein and packaging
- Strategy to develop closed resource loops – reducing the amounts of waste produced, then reclaiming, recycling and recovering
- Strategy to choose materials to give high performance in use with minimised impact in manufacture and delivery

2012 Construction Commitments(2006)¹⁵

- Projects will be designed in accordance with the London 2012 concept of a “One Planet Olympics”
- Targets... will be set within all contracts, and performance will be monitored and appraised regularly
- Projects will incorporate best practice approaches to resource use, waste minimisation, low-carbon performance, employment, training and community engagement

¹³ <http://www.london2012.com/documents/candidate-files/theme-5-environment.pdf>

¹⁴ <http://www.london2012.com/documents/bid-publications/towards-a-one-planet-olympics.pdf>

¹⁵ <http://www.strategicforum.org.uk/pdf/2012ConCom.pdf>

London 2012 Sustainability Policy (2006)¹⁶

- The Games provide a platform for demonstrating long-term solutions in terms of energy and water resource management, infrastructure development, transport, local food production and carbon offsetting. We aim to minimise the environmental footprint and carbon emissions of the Games and legacy development, notably by optimising energy efficiency, energy demand and use of low carbon and renewable energy sources

London 2012 Sustainability Plan (2007) – Climate Change Theme¹⁷

- Adopting hierarchy of reduce, replace, offset
- Key areas for action include:
 - Defining and measuring the carbon footprint of the Games
 - Use of waterways and rail for construction freight, and waste transfer
 - Design of buildings and parkland to minimise energy and water use and to be resilient to climate change impacts
 - Provision of new decentralised energy supply infrastructure for the Games and legacy
 - Maximising use of public transport to reach venues during the Games
 - Procurement of low carbon vehicles and fuels for the official fleets
 - Use the Games' inspirational power to influence behaviour change
 - Use verifiable carbon offset projects to highlight global dimension of climate change
- Specific commitments include:
 - Using the design of buildings to maximise natural light and ventilation, and to minimise the need for heating and other energy use
 - Building a CCHP as part of an energy centre which will include biomass boilers and have the capacity to change from gas to other low carbon and renewable fuel sources as they become viable
 - Building a wind turbine to the north of the park
 - Carbon emissions from the built environment in the Olympic Park should be reduced by 50% by 2013 (against business as usual, assuming 2006 Building Regulations, with no further low or zero-carbon technologies)
 - Permanent venues will achieve 15% carbon dioxide reductions beyond 2006 Building Regulations and achieve a BREEAM rating of 'excellent'
 - Contractors and suppliers will be expected to demonstrate that the amount of energy embodied in materials has been minimised
 - The Olympic Village will be 44% more energy efficient than required by 2006 Building Regulations and aims to achieve Code for Sustainable Homes Level 4
 - At Games-time, 20% of Olympic Park electricity requirements will be met by new local renewable energy sources where 'Games-time' is the period from opening to closing of the Olympic Village (approx 60 days, 'New' is defined as additional renewable energy capacity that is eligible for Renewables Obligation Certificates (ROC's) and has been directly or indirectly inspired following the announcement that London would

¹⁶ <http://www.london2012.com/documents/locog-publications/london-2012-sustainability-policy.pdf>

¹⁷ <http://www.london2012.com/documents/locog-publications/london-2012-sustainability-plan.pdf>

host the 2012 Games, and 'Local' is provisionally defined as Greater London, plus Thurrock and North Kent Thameside)

- Low carbon Olympic Flame
- Transport Plan contains a number of features to reduce CO₂ emissions
 - Local recruitment, shuttle buses, on-site services and public transport for construction workers
 - On-site reuse and recycling to reduce the need for bulk transport of construction materials and waste
 - 50% of Olympic Park construction materials to travel by rail or water
 - No private cars to be used by spectators (except for those disabled people to whom public transport is inaccessible)
 - Green travel planning for spectators and an Active Spectator Programme
 - Long-distance domestic and near continental visitors (including teams and officials)
 - Fleet-wide emissions standards to be set for all passenger vehicles procured for the Games and provisionally, a fleet-wide maximum average of 120g CO₂ / km for Category M1 Passenger Vehicles
- Carbon footprinting study and Carbon Management Strategy
- Masterplan to minimise carbon cost of demolition and conversion after Games

Olympic Park Planning Conditions¹⁸

- Submit to the Local Planning authority an annual report providing a review of whether the sustainability targets have been achieved and where reasonably practical to take action to improve on the delivery of the above sustainability targets
- Reasonable endeavours to achieve a reduction in carbon emissions (against 2006 Building Regulation standards) for the built aspects of the Development of 50% by 2013
- Reasonable endeavours to achieve overall at least 50% of construction materials by weight delivered to Site by rail and / or water
- Reasonable endeavours to meet the standards that are required to achieve an excellent rating in respect of BREEAM in respect of all permanent buildings larger than 1,000 square metres on the site (with 3 exceptions: the Primary Sub-station, the Energy Centre and the Multi-Storey Car Park)
- Reasonable endeavours to carry out a feasibility study on the supply of up to 50% of biomass fuels (for CHP) by water
- Throughout the duration of the legacy phase, the LDA shall use reasonable endeavours to maintain and where reasonably practicable continue to improve on the delivery of the above sustainability targets
- LDA to ensure any works not complete or standards not complied with during the Legacy transformation stage are integrated into detailed design for legacy development. Including BREEAM excellent, CEEQUAL

¹⁸ <http://www.london2012.com/planning/documents/section-106-legal-document.pdf>

Olympic Village Targets

- Code for Sustainable Homes Level 4 which includes 44% improvement in predicted energy consumption vs. 2006 Building Regulations Part L
- BREEAM Excellent for school, retail, offices

ODA Sustainable Development Strategy (2007)¹⁹

- To minimise the carbon emissions associated with the Olympic Park and venues
- Aspiration to achieve reduction in carbon emissions for the built environment of 50% by 2013 by:
 - Minimising the energy demand of the Park, venues and Village: permanent venues to be 15% more energy efficient than 2006 Building Regulations and Olympic Village designed to be 25% more efficient
 - Efficient energy supply through low carbon technologies, including CCHP
 - Supplying energy from new, renewable sources: 20% of all energy demands for the immediate post-Games legacy to be derived from on site renewable sources
 - All permanent Olympic Park venue structures post Games to achieve BREEAM Excellent rating
 - Olympic Village to achieve Code for Sustainable Homes Level 4 (previously BRE EcoHomes Excellent standard)
 - 50% of materials, by weight, to be transported to the Park by sustainable means during construction
- To reduce the carbon intensity of construction activities as part of commitment to a low carbon development
- Energy use and resulting emissions will be monitored throughout the construction activities. The ODA believes that monitoring carbon emissions is important to be able to estimate the overall carbon footprint of the Games

Design Principles for the Olympic Park²⁰

- To achieve a carbon neutral park during legacy transformation

ODA Transport Plan and updates²¹

- Where possible, low or zero emission vehicles will be included within vehicle fleets. The use of these vehicles will help minimise CO₂ emissions due to the Games
- The ODA is committed to minimising the carbon footprint of transport projects by adapting existing infrastructure to meet the needs of the Games and after 2012. We are also recycling and reusing materials and transporting construction material by sustainable ways where possible

19 <http://www.london2012.com/documents/oda-publications/oda-sustainable-development-strategy-full-version.pdf>

20 <http://www.london2012.com/documents/oda-planning/planning-applications/design-principles-for-the-olympic-park.pdf>

21 <http://www.london2012.com/making-it-happen/transport/transport-plan.php>

Mayor of London's Five Legacy Commitments (2008)²²

- London is committed to delivering a low carbon Games through the design and construction of buildings, provision of efficient energy supplies and the use of waterways to transfer waste and deliver construction materials

HM Government – Before During and After the Games (2008)²³

- To make the Olympic Park a blueprint for sustainable living
 - A 50% reduction in carbon emissions from the built environment by 2013 as part of delivering the ODA Sustainability Strategy:
 - All buildings 15% more efficient than 2006 standards
 - Athletes' village 44% more energy efficient than 2006 standards
 - CCHP to supply Olympic Park and Athlete's Village
 - On-site renewable energy sources during and after the Games to reduce the call on conventional energy sources by 20%
 - Transporting 50% of construction materials by rail or water
- Encourage people to live more sustainably as a result of the 2012 Games, such as reducing their carbon footprint, being energy efficient or recycling on a greater scale
- Measuring the carbon footprint: The 2012 Games will set a new standard by developing and implementing a detailed carbon and ecological footprint measure. Once it is agreed during 2008, London 2012 will be able to report on progress in reducing the carbon footprint of the London 2012 Games. Government will then work with stakeholders to promote this new methodology to the wider sport and event sectors

Legacy Masterplan Framework (2009) – People and Places – Energy Strategy Summary²⁴

- The LMF aims to build on the substantial investment that has already been made in this infrastructure and to bring about further reductions in CO₂ emission for legacy that will help deliver the Government's and London's CO₂ emission reduction targets.
- Key objectives for the LMF energy strategy have been to:
 - reduce design-related energy demands for all end uses
 - use sustainable low carbon and renewable energy sources
 - encourage low carbon patterns of use by occupiers
 - make the best use of the energy infrastructure inherited from Games use
 - ensure compliance with current policy
 - provide the flexibility for legacy development to meet the Government's zero carbon policy commitments however they are finally defined
 - facilitate the delivery of a wider strategic decentralised energy infrastructure for the east of London
 - explore an integrated approach to the management of waste and energy supply
 - ensure affordable and competitive running costs for occupiers; and
 - ensure proposals are deliverable and affordable

²² <http://www.london.gov.uk/mayor/olympics/docs/5-legacy-commitments.pdf>

²³ <http://www.london2012.com/making-it-happen/transport/transport-plan.php>

²⁴ <http://www.legacy-now.co.uk/designing-the-park/future-olympic-park/the-emerging-plans-and-programme/>

Appendix 2 - Method

Methodology

This paper is a summary of findings and observations on the carbon footprint.

Presentations and workshops

12 May 2008	CSL attended Carbon Management Stakeholder Meeting held by LOCOG (Jane Durney, Shaun McCarthy and Andrew Myer) CSL responded to a series of questions posed at the workshop
17 February 2009	Presentation by David Stubbs, LOCOG, to Commission Subgroup
17 February 2009	Presentation by Ian Guest, ODA consultant, to Commission Subgroup
15 May 2009	Observed 6th Carbon Technical Advisory Group (Claire Holman and Jonathan Turner)
17 June 2009	CSL attended Carbon Management Strategy meeting (Jane Durney, Shaun McCarthy)
22 July 2009	CSL attended Carbon Management Strategy meeting (Jane Durney, Shaun McCarthy)
29 July 2009	CSL attended Carbon Management Strategy progress meeting (Jane Durney)

Documents reviewed

The following documents were reviewed:

- Candidature file
- London 2012 Sustainability Plan and update
- ODA Sustainable Development Strategy
- ODA / LDA S106 Agreement relating to planning applications for the Olympic Games and Legacy Transformation within the Lower Lea Valley
- Environment and Sustainability Updated Olympic Park Legacy Energy Statement
- London 2012 Carbon Management Strategy (unpublished)
- Key stakeholder quarterly reporting

RAG Status definitions

The following criteria were used to assign a RAG status to each area:

- Red** Significant concerns about performance and little evidence of recovery plan. Significant threats exist which may impact successful achievement of the Sustainable Development objectives and projected targets for the issue if not addressed in the short term.
- Amber** Evidence not currently available in response to recommendation or some significant concerns about performance but evidence that they are being addressed is available.
Threats exist which may impact successful achievement of the Sustainable Development objectives and projected targets for the issue if not addressed in the medium term.
- Green** No significant threats to achievement of the target performance for the issue were identified.

Appendix 3 – Glossary and list of organisations

Glossary of common acronyms used in relation to the London 2012 Olympics

BOA	British Olympic Association
BPA	British Paralympic Association
CCHP	Combined Cooling Heat and Power
CO ₂ e	Carbon dioxide equivalent, taking account of CO ₂ and other greenhouse gases
CSL	Commission for a Sustainable London 2012
CSR	Corporate Social Responsibility
DCMS	Department for Culture Media and Sport
GFP	Games Foundation Plan
GHG	Greenhouse Gas
GLA	Greater London Authority
GOE	Government Olympic Executive
HBCU	Host Borough Central Unit
HFC	Hydrofluorocarbon
Host Boroughs	London Boroughs of Greenwich, Hackney, Newham, Tower Hamlets, Waltham Forest
IOC	International Olympic Committee
IPC	International Paralympic Committee
LDA	London Development Agency
LMF	Legacy Masterplan Framework
LLV	Lower Lea Valley
LMF	Legacy Masterplan Framework
LOCOG	London Organising Committee of the Olympic Games and Paralympic Games
NRG	Nations and Regions Group; 12 senior representatives from UK business and sport, ensures the whole of the UK is involved in and benefits from the 2012 Games
OB	Olympic Board
OBSG	Olympic Board Steering Group
ODA	Olympic Delivery Authority
OPLC	Olympic Park Legacy Company
PSA	Public Service Agreement
PVC	Polyvinylchloride
RAG	Red, Amber, Green
SD	Sustainable Development
TAG	Technical Advisory Group

Appendix 4 – Progress against previous recommendations

Number	Responsibility	Recommendation	Status (at 30 September 2009)
2008 Annual Review Recommendation 4	London 2012 Sustainability Group	The London 2012 Sustainability Group should reduce carbon at source as much as possible and honour the commitment to offset flights for competitors and officials with Gold Standard offsets. The remaining footprint should be mitigated by a combination of initiatives to reduce carbon in the community and through wider influencing schemes using the inspirational power of the Games to change behaviour. Legacy standards should address embodied impacts.	The carbon management strategy is being taken to OBSG in late 2009. This will cover these issues. We will monitor how each element of this recommendation is taken up or not. Progress Made
2008 Annual Review Recommendation 6	LDA	The LDA should ensure that the Olympic Park infrastructure is able to deliver zero carbon heat and very low carbon energy by 2016 at the latest, but preferably by 2012, utilising a wider waste strategy for the Lower Lea Valley to supply fuel derived from organic waste combined with the renewable energy solutions provided by the ODA.	Dependent on decisions taken by the London Waste and Recycling Board and progress by the LDA and OPLC in driving forward the development of necessary infrastructure. Progress against this recommendation will be assessed further in the Commission's waste review. Progress Made
2008 Annual Review Recommendation 11	London 2012 Sustainability Group	The London 2012 Sustainability Group should ensure that substances with high Global Warming Potential such as HFC are eliminated where possible.	A policy on the use of HFC has been agreed by the Olympic board. This has a presumption against the use of HFC unless there are environmental, technical or economic reasons for their use. Complete

Number	Responsibility	Recommendation	Status (at 30 September 2009)
Design Review Recommendation 4	LOCOG	The findings of the Carbon Footprinting and Carbon Management Strategy should be applied to LOCOG's design processes to minimise the carbon footprint prior to procurement.	LOCOG has found that temporary materials form the biggest part of their portion of the carbon footprint. LOCOG has established a temporary materials forum to develop a toolkit and guidance to address this. This will be used by designers. Progress made
Design Review Recommendation 7	LDA	The LDA should ensure that the site and venues are future-proofed and retain sufficient flexibility to adapt to new opportunities and satisfy longer term policy requirements such as the Mayor of London's Climate Change Action Plan and draft Climate Change Adaptation Strategy	Too early to be assessed but forms part of LMF requirements. Dependent on OPLC review of LMF plans No Evidence Yet
Design Review Recommendation 9	LDA	LMF sustainability criteria should drive design. In order to meet the Mayor of London's climate change target of a 60% reduction by 2025, the development is likely to need to be zero carbon in use and have very low embodied CO ₂ compared to a business as usual design, in addition to supporting a shift to lower carbon transport options, and enabling a reduction in the impact of food and consumption.	Dependent on OPLC review of LMF plans No Evidence Yet

Number	Responsibility	Recommendation	Status (at 30 September 2009)
Design Review Recommendation 10	LDA	The findings of the London 2012 Carbon Footprinting and Carbon Management Strategy should be applied to LDA's design processes to inform the areas needing action to reduce their carbon footprint.	Dependent on OPLC review of LMF plans No Evidence Yet
Design Review Recommendation 11	LDA	The LDA should set out clear policy going forward, linked to an understanding of the rate of change of what will be the norm in development schemes when projecting forward to 2012, 2020 and 2050, particularly when considering the rate of change in approaches to addressing sustainability, through technological advances and behavioural change, over the past 5-10 years. This needs to include a commitment to continuous improvement of the sustainability performance of the development, as it will occur over a long period of time.	The LMF Output C energy strategy covers this for its areas. The LMF Sustainability protocol includes a vision and objectives for a zero carbon community but it is not yet clear how this will be delivered. Dependent on OPLC review of LMF plans Progress Made

Number	Responsibility	Recommendation	Status (at 30 September 2009)
2007 Governance Review Recommendation 3	OBSG London 2012 Sustainability Group	OBSG, through the London 2012 Sustainability Group, should establish cross-cutting workstreams to deliver the strategic aspirations described by the five key themes and other significant SD issues. Work programmes, targets and progress should be reported through the London 2012 website and other media, to reflect all stages of the programme.	The London 2012 Sustainability Group has established quarterly reporting to OBSG and OB, against a set of agreed KPIs, and otherwise by exception. The sustainability plan annual update includes a report card which reports progress against the commitments in the sustainability plan and this is published on the London 2012 website. Closed (recommendations from 2008 Annual Review take precedence)

Number	Responsibility	Recommendation	Status (at 30 September 2009)
2007 Governance Review Recommendation 4	ODA LOCOG	ODA and LOCOG should develop a clear statement of intent with respect to standards for temporary venues and temporary overlay.	<p>The temporary venues the ODA are responsible for have individual project targets, as with the permanent venues. The targets will be different, reflecting the temporary nature of the venues. There will be more of a focus on materials and reuse, and recycling post Games. The focus will be on reducing the lifecycle impacts of the buildings, rather than setting targets for operational aspects such as energy or water in use, which may lead to inappropriate decision making for a short life span. Performance against targets will be monitored on a quarterly basis, as with permanent venues. LOCOG Venue Requirements (LVR) have been developed for some venues which include sustainability requirements for design. Functional Sustainability Requirements for Venues have been developed. We will monitor implementation of these and recommend that LOCOG make their main targets public. LOCOG intend to lease where possible so that items are reused after the Games. Most of the Sustainable Sourcing Code will apply to leased items. A policy has been adopted on plastic tensile fabrics. LOCOG has established a Temporary Materials Forum which will develop guidance and advise on specific materials</p> <p>Progress made</p>

Number	Responsibility	Recommendation	Status (at 30 September 2009)
2007 Governance Review Recommendation 11	LOCOG	LOCOG should establish dialogue with the utility sponsor (appointed by LOCOG) and the utility partner (appointed by the ODA) in 2008 to understand how the 20% Games time renewable energy target will be achieved. In this regard, LOCOG should consider the opportunity to link with the waste agenda, such as the use of biofuel from anaerobic digestion facilities.	LOCOG is developing a waste and resources strategy which will include the potential for anaerobic digestion of organic waste to produce biofuel. They have engaged an engineering services partner who will address the provision of 20% renewable electricity at Games-time. ODA are prepared to work with LOCOG on this. Progress made
2007 Governance Review Recommendation 12	OBSG	OBSG should consider the options for carbon management associated with the Games based on the current study. This should be followed by clear communication of the resultant strategy. This should be done before the close of the Beijing Games in order for London to have a clear strategy during its tenure as host city.	The carbon footprint has been developed and CSL understands that the carbon management strategy is due to be published in 2009. The Commission believes that the London 2012 Sustainability Group should complete this and publish it without further delay and demonstrate how it is used to influence decision making. Closed (recommendations from 2008 Annual Review take precedence)

Number	Responsibility	Recommendation	Status (at 30 September 2009)
2007 Governance Review Recommendation 2.15	LOCOG	<p>Demonstrate significant progress in developing the following strategic plans over the next 12 months:</p> <ul style="list-style-type: none"> ■ Food strategy to incorporate local, sustainable, healthy options which also minimise waste and carbon footprint; ■ A strategy for waste disposal that matches the commitment to zero waste to landfill during Games time and helps to stimulate investment in sustainable waste management facilities in East London by other bodies; ■ A strategy for ethical procurement that addresses the commitments to full and fair opportunity and addresses labour standards for all workers, including overseas and migrant workers, through sponsorship and procurement contracts; and ■ A strategy to deliver LOCOG's contribution to reduction in the overall carbon footprint. 	<p>The food and waste resources strategies are nearing completion. The Sustainable Sourcing Code has been produced, including supplementary guidelines on calculating the carbon emissions of products. A sustainable sourcing category matrix has been developed to enable elements of the Sustainable Sourcing Code to be applied where they will have the most impact.</p> <p>The Carbon footprint has been developed and CSL understands that the carbon management strategy is due to be published in late 2009. This had been due to be published earlier.</p> <p>Progress made</p>

Number	Responsibility	Recommendation	Status (at 30 September 2009)
2007 Governance Review Recommendation 3.5	LOCOG	Ensure that waste disposal is included in the carbon footprint to encourage prioritisation of re-use over recycling. Ensure that waste disposal is included in the carbon footprint to encourage prioritisation of re-use over recycling.	The carbon footprint has been developed, including waste management. The carbon management strategy is nearing completion, which should set out plans to reduce the carbon footprint. Complete
2007 Governance Review Recommendation 3.6	LOCOG	Develop a clear definition of the footprint of the Games to include all relevant sources of greenhouse gas emissions that are created as a result of the Games and are able to be influenced by the Olympic programme.	The carbon footprint of the Games has been developed. Complete
2007 Governance Review Recommendation 3.7	OBSG	Define how the carbon strategy will be decided and led at an executive level.	The GLA Executive Director of London 2012 Co-ordination has been appointed to chair the London 2012 Sustainability Group and is a member of OBSG. The Sustainability Group advises OBSG on sustainability issues, including carbon management. The carbon management strategy is due to be published in late 2009. Progress made
2007 Governance Review Recommendation 3.8	LOCOG	Develop a proactive approach to linking the carbon strategy to the procurement process.	The Sustainable Sourcing Code has an accompanying document on how to calculate the carbon emissions from products and services. The carbon management strategy is due to be published in late 2009. Progress made

Number	Responsibility	Recommendation	Status (at 30 September 2009)
2007 Governance Review Recommendation 3.9	LOCOG	Set out a timetable for refreshing the strategy to take account of emerging good practice	The carbon management strategy is due to be published in late 2009. This should set out plans for refreshing the strategy as appropriate Progress made
2007 Governance Review Recommendation 3.10	LOCOG	Develop a clear communications strategy for the carbon strategy which is transparent about how carbon is to be managed, using terminology that is clear to wider stakeholders.	The carbon management strategy is due to be published in late 2009. This should be accompanied by plans to communicate it. Progress made
2007 Governance Review Recommendation 3.11	ODA	Continue the good work to incentivise the Energy Services Company (to be appointed by the ODA) to deliver higher levels of carbon reduction.	COFELY (part of GDF SUEZ Energy Services) has now been appointed and will operate the Energy Centre. They are required to meet targets for carbon reduction and have incentives to go beyond these targets for the period to 2013. The contract will need to be actively managed to ensure future carbon reductions will be achieved. Closed (recommendations from the 2008 Annual Review take precedence)
2007 Governance Review Recommendation 3.12	ODA	Ensure that the ODA energy scheme is developed to utilise alternative fuel sources over time and during legacy.	The Energy Centre will be using technology which is 'future proofed' to allow for the use of alternative fuels. Closed (recommendations from the 2008 Annual Review take precedence)

Number	Responsibility	Recommendation	Status (at 30 September 2009)
2007 Governance Review Recommendation 3.13	LOCOG ODA	Define energy targets for temporary venues and other venues requiring temporary overlay.	<p>The temporary venues that the ODA are responsible for have individual project targets, as with the permanent venues. The targets will be different, reflecting the temporary nature of the venues. There will be more of a focus on materials and reuse, and recycling post Games. The focus will be on reducing the lifecycle impacts of the buildings, rather than setting targets for operational aspects such as energy or water in use, which may lead to inappropriate decision making for a short life span. Performance against targets will be monitored on a quarterly basis, as with permanent venues. LOCOG Venue Requirements (LVR) have been developed for some venues which include sustainability requirements for design. Functional Sustainability Requirements for Venues have been developed. We will monitor implementation of these and recommend that LOCOG make their main targets public.</p> <p>Progress made</p>



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