

CARBON FOOTPRINT OF AN EIA – METHODOLOGY

- 1.1 The carbon footprinting exercise was undertaken in accordance with the GHG Protocol Product Life Cycle Accounting and Reporting Standard¹ following a lifecycle approach in line with an ISO LCA study.

Scope boundary

- 1.2 In order to calculate the carbon footprint of an EIA, the boundaries of the study were set based on typical EIA projects that Greengage have worked on for a cradle-to-gate study. The start point was therefore deemed to be the scoping opinion and the end point when the client has received the hard copy of the document prior to it being issued to the planning authority.

- 1.3 The carbon footprint accounts for the six main greenhouse gases: CO₂, CH₄, N₂O, SF₆, PFCs & HFCs.

Functional unit

- 1.4 The functional unit for this study is one completed Environmental Statement (two printed copies) in hard format.

Assumptions

- 1.5 Given the wide range and location of potential developments that may require an EIA, several assumptions were made, as set out in the table below:

EIA duration	6 months
Site location	Sevenoaks, Kent
Project	250 residential units and 500sqm A1/A3 use class
ES chapters required	Transport; Air Quality; Noise & Vibration; Landscape and Visual Impact Assessment; Ecology; Socio-economic; Water Resources & Flood Risk; Archaeology & Cultural Heritage
Location of consultants	Central London (Trafalgar Square) (Average of all locations consultants are based)
Consultant offices	25 staff; 100sqm
Office energy use	100% electricity, no gas. Office energy includes space heating/cooling/ventilation, lighting Computer/small power use includes computers, printers, server room, kettle. Kettle use an average of 3 times per day per employee; 2.5 minutes to boil.
Meetings	1 per month and 1 person from each consultancy attends
Travel	All site visits conducted by car (medium size, petrol) All meetings travelled to by tube
Printing	2 copies printed = 1000 pieces of paper = 5kg weight

- 1.6 Whilst the number of assumptions limits the quality of the data produced, it is deemed that for the size of the study being undertaken, the assumptions will produce data of the required quality to enable conclusions to be drawn.

- 1.7 Each task within the EIA was split out and the hours associated with the task identified based on recent project experience. The carbon generating activities occurring within this time were then identified. The tasks and carbon generating activities are listed below:

¹ World Resources Institute (201), Greenhouse Gas Protocol, Product Life Cycle Accounting and Reporting Standard

Screening

- EIA coordinator site visit – car use; and
- Writing screening letter with input from multiple consultants – computer power; office energy use (heating, lighting, cooling, appliances).

Scoping

- Scoping report writing with input from multiple consultants – computer power; office energy use (heating, lighting, cooling, appliances); and
- Site visit for most disciplines that are producing an ES chapter – car use.

Environmental Statement production

- Coordination and individual chapter production by different consultants – computer power; office energy use (heating, lighting, cooling, appliances);
- Additional site visit(s) by selected disciplines for surveys/monitoring etc. – car use; and
- Monthly project team meetings – tube travel.

Printing

- Printing – paper use; office energy use whilst printing; and
- Delivery of ES from printers to EIA coordinator for review then further delivery to client – car use.

Calculations

- 1.8 Carbon factors were used for each carbon intensive activity. These were taken from the UK Government GHG Conversion Factors for Company Reporting 2018².
- 1.9 Energy use was calculated using the typical energy use (kWh/m²/yr) for an office based on results from the Department for Business, Energy & Industrial Strategy's Building Energy Efficiency Survey 2014-15³. This provides typical data on office energy use for heating/cooling/hot water/lighting; small power (computers, printers, kettle); ICT server room; and catering (microwave).
- 1.10 Using the survey data, hourly energy use for the assumed office was calculated and the energy use per staff member. These figures were used to calculate the energy use based on the assumed number of hours for each task and this was multiplied by the carbon factor to give the carbon footprint.
- 1.11 In the case of transport, the carbon footprint was calculated by multiplying the relevant carbon factor for the mode of transport by the distance travelled.
- 1.12 The carbon footprint of the printing used the weight of paper and the embodied energy from the University of Bath's Inventory of Carbon & Energy (ICE) database⁴ for paper to calculate the carbon footprint. The energy use of the printing has been considered in terms of the time taken for the printing process (including set up, finishing, binding etc.) and the computer power/office energy use that would be used in this time.

If you would like further detail on the carbon footprinting methodology or any other aspect of the project, please contact chris.burgess@greengage-env.com

² UK Government, Department for Business, Energy & Industrial Strategy/Department for Environment, Food & Rural Affairs, (2018), GHG Conversion Factors for Company Reporting

³ UK Government, Department for Business, Energy & Industrial Strategy, (2016), Building Energy Efficiency Survey 2014-15

⁴ University of Bath, (2011), Inventory of Carbon & Energy database