

# Measuring, managing and reporting GHG emissions from Internal Air Travel

A Practical Guide for the Professional Services Sector





## About the PSSI sub-group on Internal Air Travel

PSSI is a unique consortium of leaders from professional services firms to encourage and deliver tangible steps towards a sustainable future. Its sub-group on Internal Air Travel was set up to look into the measuring, management and reporting of internal air travel in the professional services sector. It was conceived of and launched by professional services executives in 2012. The group leverages the professional services' expertise to better understand, communicate and act on their GHG emissions resulting from business internal air travel. The PSSI's Secretariat is provided by the University of Cambridge Programme for Sustainability Leadership (CPSL). Further information is at [www.cpsl.cam.ac.uk](http://www.cpsl.cam.ac.uk)

## Acknowledgements

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# ACRONYMS

4CMR	Cambridge Centre for Climate Change Mitigation Research
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Farming and Rural Affairs
FTE	Full Time Equivalent
GHG	Greenhouse Gas
MRV	Measure, Report and Verify
PSSI	Professional Services Sustainability Initiative
UNFCCC	UN Framework Convention on Climate Change

# Section 1: Introduction to the Guide

## 1. Introduction to the Guide

### 1.1 Why has this guide been written?

Professional Services firms see considerable value in measuring energy use, travel, consumption of goods, etc., and using these measurements to estimate and manage their environmental footprint, including greenhouse gas (GHG<sup>1</sup>) emissions. An important component of these emissions is air travel, where reduction strategies may be driven by:

- Commitments to reduce GHG emissions, for instance as part of overall corporate social responsibility goals
- A need to reduce travel costs – and vulnerability to future costs - given the increasing price of air fuel (reflecting, in part, carbon prices)
- As part of a more comprehensive requirement to report GHG emissions through, for instance, the Carbon Disclosure Project
- More stringent regulatory requirements to report on carbon emissions, e.g. recent announcements<sup>2</sup> in United Kingdom regarding both absolute and intensity<sup>3</sup> carbon emissions reporting in Annual Reports from 2013
- Brand enhancement through reducing adverse environmental impacts.

This Guide on ‘Measuring, managing and reducing GHG emissions from internal air travel’ builds on the practical experiences of firms within the Professional Services Sustainability Initiative (PSSI) in developing their own systems and approaches to measuring their carbon footprint from air travel. It offers suggestions on how to identify and collect the data needed, and how best to convert those data into a carbon footprint. The aim is also to drive conformity in approach so that professional services organisations can more readily benchmark their performance. This should allow the sharing of best practices, accelerating GHG reductions as part of the collective actions of the professional services sector to mitigate climate change.

The focus of the Guide is on ‘internal’ air travel (i.e. air travel such as staff meetings and training not directly linked to client delivery), rather than ‘external’ air travel resulting from the delivery of client services. This approach has been taken because internal and external (or ‘client-facing’) travel have different dynamics, and present challenges unique to professional services firms. The degree to which these two challenges of internal and external air travel can be addressed, the methods required to reduce them and the timeframe within which they can be tackled is different.

External travel is a fundamental part of the core ‘product’ delivered by professional services firms. It enables them to move people with specific skills and knowledge to the locations in which they are required. In the specific case of assurance, professional standards mean that firms may need to visit overseas territories to review and assess the work undertaken by others. In other instances, consulting services may require a physical presence.

Whilst there are undoubtedly reductions that can be made to client-facing air travel, this requires careful consideration of the trade-off against other business success criteria such as quality and client expectations. By contrast, internal air travel incurred as part of the firm’s operations is more directly under the control of the firm and reductions are generally considered a positive contribution to efficiency of operation. Internal travel therefore represents an opportunity which can be addressed first and reductions may be quite quick relative to external travel.

There is, however, no standard methodology for categorizing whether travel should be considered internal or external.

There is, however, no standard methodology for categorizing whether travel should be considered internal or external. This is particularly relevant with regards to sales efforts. The Guide highlights the key considerations, enabling firms in the professional services sector to converge in the scope of their internal and external travel measurement over time, and to improve the quality and comparability of their travel data.

<sup>1</sup> Includes Carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons. See [www.ghgprotocol.org](http://www.ghgprotocol.org).

<sup>2</sup> The GHG emissions (Director’s Report) regulations 2013. Although this regulation applies to UK incorporated companies (i.e. not to privately owned organisations) and Scope 3 emissions are not mandatory, many professional services firms will want to report in line with the requirements to demonstrate their commitment to carbon as an issue

<sup>3</sup> Intensity metrics used a denominator such as revenue or FTE to provide a ratio, allowing for easier comparability across different organisations, but intensity reduction targets for CO<sub>2</sub>e can be considered to be less stringent than ‘absolute’ targets as they may allow for increased overall emissions, exacerbating climate change.

## 1.2. Who is the Guide written for?

This Guide is aimed at those with responsibility for measuring and reporting on their firm's carbon footprint, especially where air travel generally – and internal air travel specifically - is a significant part of its carbon profile. It aims to make easier the measurement, management and reporting of GHG emissions, and to bring some degree of standardisation to such reporting so the sector can compare "like against like" amongst its members. As mentioned, the firms of the PSSI are already working with these measures, and so the Guide compiles lessons learnt for other companies that want to follow down the same path to GHG footprinting and reduction in regard to internal air travel.

It assumes that the reader has some knowledge of basic carbon accounting principles, and so these principles are not repeated in full here.

## 1.3. What is the broader context for the Guide

In an effort to reduce the risks of climate change, national and international efforts are focusing increasingly on reducing GHG emissions. Recommendations by the UN Framework Convention on Climate Change (UNFCCC) indicate that the key to successful emissions reductions is the ability to Measure, Report and Verify (MRV) accurately the GHG emissions of a sector or firm. As a first step, GHG MRV protocols have been developed in the UK, EU and internationally to help businesses to develop and report their GHG emissions and to build confidence that the process of emissions reporting - and the reductions claimed – is transparent, verifiable and uniform in approach.

GHG Protocols typically divide emissions into three internationally recognised categories:

- Scope 1 ('Tier 1') are direct emissions from fuel combustion, such as the burning of natural gas for heat. Scope 1 emissions are completely under the control of the firm: it can choose the amount of energy produced, the technology used to provide that energy and the fuel itself.
- Scope 2 are indirect emissions arising from consumption of electricity supplied through a local, regional or national grid. Firms have less control over Scope 2 emissions: they can choose the amount of electricity purchased, but the technology and fuel for producing the power are controlled by the supplier.
- Scope 3 are other, indirect emissions, including all other emissions either from direct operations, in the supply chain, or in interactions with customers. They include (but are not restricted to) business travel and commuting. The Protocol does not currently make a provision for the difference between internal and external business travel, but they are typically reported separately by professional service firms, nonetheless.

Emissions reporting is generally understood to include all three Scopes; at the least it includes Scope 1 and 2 emissions and those aspects of Scope 3 emissions under the direct control of the firm and material to the business. For professional services firms this includes flights, both for internal and external travel.

This Guide focuses on air travel, and more specifically on air travel undertaken in relation to the internal operations of the firm (i.e. 'internal' air travel). The focus on internal air travel is designed to help firms establish robust GHG accounting and reduction procedures for this aspect of their footprints and reduction programmes.

Throughout the Guide, 'GHG emissions', 'GHG inventory' and 'carbon footprint' are used to mean the amount of greenhouse gases associated annually with the activities of a firm. The units assumed are tons of CO<sub>2</sub>e (carbon dioxide equivalent ) per year, as well as tons of CO<sub>2</sub>e (carbon dioxide equivalent ) per year per unit staff or revenue (e.g. tons of CO<sub>2</sub>e per year per £ revenue). The latter number is more properly called the carbon intensity of the firm. Both are important indicators of success in reducing emissions.

## 1.4. What is the scope of the Guide?

The Guide is based on the following considerations:

- It offers suggestions about general principles that will assist professional services firms to make more transparent the measurement and reporting of emissions from internal air travel. It is not asking firms to adopt specific targets although the hope is that increased transparency and dialogue on the scope of internal travel will encourage alignment over time so “best practices”, “benchmarking” and “exemplary programmes” can be identified.
- Procedures outlined in this Guide are based mainly on existing non-financial accounting processes that firms will already have in place, with suggestions for extending these so they can track more effectively the modes and reasons for travel.
- The Guide does not prescribe how a firm should set out the components of its air travel since different firms do this differently. However, it does lay out the various drivers for air travel so that firms can use a common taxonomy for categorising and transparently reporting their air travel and associated carbon emissions.
- The Guide also sets out common features for measuring and reporting GHG emissions that should help to ensure that the underlying methods are accurate and applied consistently. Establishing these common features in carbon accounting can help firms to compare practices or benchmark across the industry. The members of the PSSI have agreed to work towards as complete and transparent reporting of their internal and external air travel and associated carbon footprint as possible, including details of which activities are included in each category.
- Developing a carbon footprint can help a firm to better understand how its activities produce Scope 3 emissions, and the key reasons behind those emissions, so that it can put in place reduction strategies.

A carbon footprint does not just provide numbers (e.g. tons of CO<sub>2</sub>e per year from internal air travel), although these are the most obvious results to be reported, and measure progress towards a reduction goal. Equally important, the process of producing the carbon footprint can enable a firm to better understand the relationships between its fiscal accounting procedures and travel logistics, and the linkage between behaviours of staff and the associated GHG emissions so it can identify ways to reduce those emissions.

- The Guide does not prescribe what a firm will do with the data. The aim is to reduce emissions, but where those reductions are taken and how those reductions are driven will be unique to each firm. Implementing suggestions in the Guide may help a firm to understand the implications of internal air travel for both the environment and its profitability (especially with the rising costs of air travel). It may support a cultural shift towards considering other modes of travel or alternatives to travel such as web- or video-conferencing. ‘Hard’ numbers that demonstrate the changes in and costs of internal air travel can often help to drive such changes, especially in the professional services sector where employees tend to be attentive to the results of quantitative analyses.

<sup>4</sup> CO<sub>2</sub>e refers to carbon dioxide equivalent which is a recognised way of expressing the combined effect of different greenhouse gases as a single number

<sup>5</sup> CO<sub>2</sub>e refers to carbon dioxide equivalent which is a recognised way of expressing the combined effect of different greenhouse gases as a single number

## 1.5. Who has produced this Guide?

The Guide draws extensively on the knowledge and experience of a working group of PSSI members and of members of Project ICARUS, a widely recognised corporate sustainability programme within the travel and meeting industry (for information, visit the website of the Global Business Travel Association at <http://www.gbta.org/foundation/icarus/Pages/default.aspx>).

The PSSI working group defined the scope of the Guide, identified the most important initial issues to be addressed, provided insights into how the Guide might be used by professional services firms, identified examples of best practice, and provided guidance on connections between corporate practice on internal air travel and specific national and international reporting requirements.



Members of Project ICARUS provided an external review of the document, once drafted.

The Cambridge Programme for Sustainability Leadership supported the Guide’s development. The Cambridge Centre for Climate Change Mitigation Research (4CMR) of the University of Cambridge provided expert input on the development of carbon footprints for all sectors of the economy and ensured that the suggestions provided in the Guide meet national and international standards of reliability<sup>6</sup>.

<sup>6</sup> Appendix 2 contains a detailed listing of information sources used in developing the Guide. Throughout, the methods described have been selected to be consistent with those recommended in the GHG Protocol (“A Corporate Accounting and Reporting Standard”) produced by the World Business Council for Sustainable Development and World Resources Institute, and the report “Guidance on how to Measure and Report your Greenhouse Gas Emissions” produced initially by the UK Department of Environment, Food and Rural Affairs (DEFRA) and then jointly with the UK Department of Energy and Climate Change (DECC).

## 1.6. Structure of the Guide

The Guide provides information about measuring and reporting on internal air travel, in line with the GHG Protocol and DEFRA guidance, but draws out key considerations for the professional services sector. A summary of the Guide’s structure and content is set out below.

Summary of Carbon Accounting and Reporting Methodology set out in this document	
Decide scope of internal vs external travel	SECTION 2.2
Establish data sources	SECTION 3.3.2 AND 3.3.3
Decide on methodology for calculation / assumption	SECTION 3.3.4 AND 3.3.5
Calculating footprint and verifying data quality	SECTION 3.3.6 AND 3.3.7
Set targets	SECTION 4.2
Reduction programmes	SECTION 4.3 and 4.4

## Section 2: Introduction to Internal Air Travel

### 2.1 Introduction

This section defines internal air travel, and outlines the benefits of Measurement and Reporting both the amount of such travel and the associated GHG emissions for the Professional Services sector.

### 2.2 Definition of “Internal Air Travel”

Some aspects of business travel undertaken by professional service firms are clearly internal, some clearly external and some fall into a ‘grey area’ where treatment - for the purposes of sustainability reporting - may differ from firm to firm.

‘Internal’ air travel is generally understood to mean air travel that is not attributable to delivering specific client work. This aspect of travel is usually related to internal operations such as training, and hence is not billed to clients. Other travel may normally be categorised as client-facing travel and is typically billable to the client.

But there are several areas of travel where the distinction between internal and external travel is not clear due to different ways of accounting for time spent by staff on the early stages of the sales process before an opportunity is qualified, or when travel is undertaken with dual purpose (see table below for examples). Some firms, but not all, provide facility for staff to allocate travel across multiple cost codes for better accuracy, and some allow for retrospective adjustments although these may be limited to financial systems, and not easily allow the travel distances to be adjusted post travel. This type of travel is on the whole considered to be only a small part of a firm’s overall footprint, and the investment required to upgrade systems and change processes to capture data more accurately have been prohibitive to date. In future, however, enhancements to systems may help firms to more accurately categorise all types of travel.

This group of accounting – and associated GHG footprinting - activities does not yet have standardised approaches by all firms in the sector. However, the general ‘rule’ used by professional services firms for the categorisation of internal travel is whether it is charged to an internal ‘cost code’ or a client-related cost code, either chargeable or non-chargeable (in which case it is “external”).

<i>Internal travel activities</i>	<i>Travel activities where categorisation can be internal or external</i>	<i>External travel activities</i>
<ul style="list-style-type: none"> <li>• Back office functions and other non client-facing services: IT, Communications, Estate Management, Finance, HR, Procurement, Environmental Services</li> <li>• Internal management and operational meetings (e.g. Board meetings, performance management)</li> <li>• Training and other professional education events</li> <li>• Internal conferences and practice days</li> <li>• Recruitment</li> <li>• International or regional inter-office collaboration and coordination</li> <li>• Meetings with other non-client external stakeholders (e.g. regulators, alumni, media, communities)</li> <li>• Meetings related to service innovation, thought capital development</li> <li>• Non client-facing account management and planning</li> <li>• Meetings for internal purposes with participants from both internal and client-facing teams</li> <li>• Business development activities such as general client-related relationship building, product or service marketing.</li> </ul>	<ul style="list-style-type: none"> <li>• Business development activities related to lead generation and qualification</li> <li>• Travel to a location for dual purposes (e.g. A trip that has both an internal meeting and client meeting in the same city; a trip to one city for a client meeting via a stopover in a different city for an internal meeting)</li> <li>• Fixed fee engagements, where travel is part of the overall commercial arrangement</li> </ul>	<ul style="list-style-type: none"> <li>• Business development activities related to competitive tendering (e.g. sales qualification, proposal development/presentation, contractual negotiations)</li> <li>• Quality reviews and client-facing account or relationship management)</li> <li>• Client engagement delivery, including mobilisation</li> <li>• Service management (e.g. In relation to outsourcing or transformation programmes)</li> </ul>

This Guide does not prescribe what instances of travel in the 'grey category' (or middle column of the above table) should be considered internal air travel. The intent instead is for firms to be as transparent as possible in measuring and reporting such emissions however they choose to define it, so 'like-for-like' comparisons can be made. This includes reference to the way in which 'unstandardised activities' are treated within their reporting. The principles and procedures recommended will also – when used in practice - provide insights into how these emissions can be reduced.

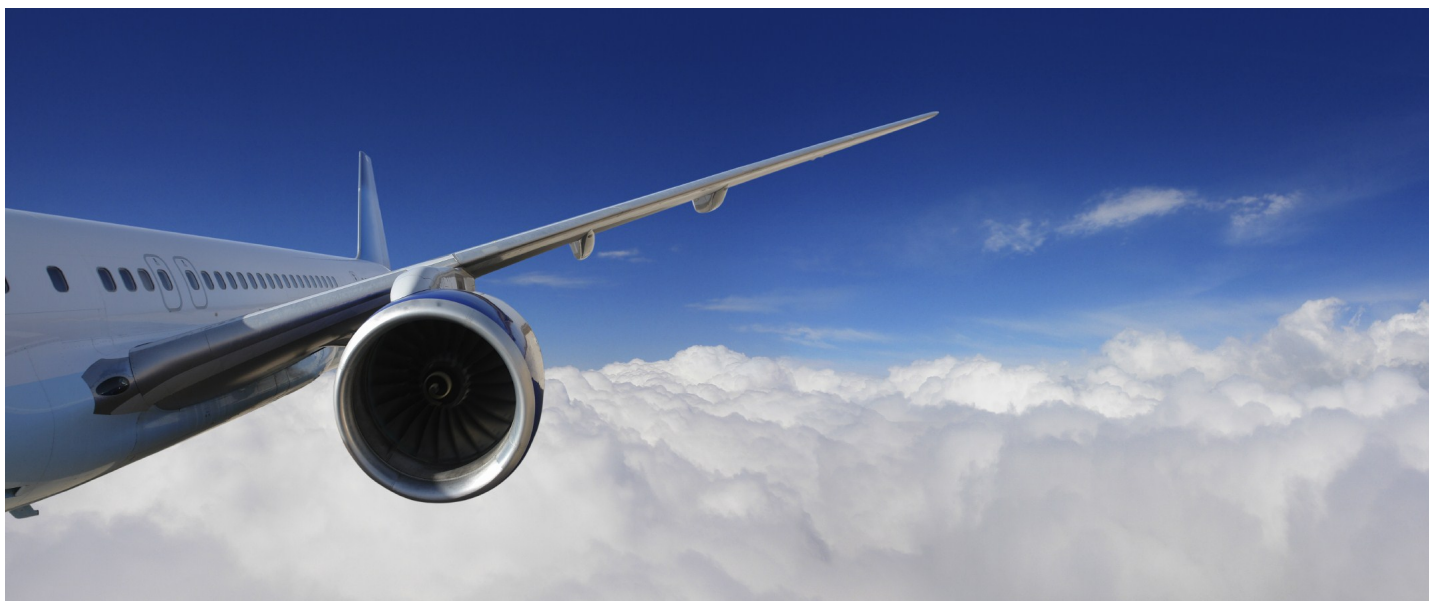
Some comments from within the industry which highlight the challenges and variation in accounting methods:

*“Travel that is booked through our travel provider is marked as either chargeable or non-chargeable, and given a cost code relating to a team or job. The non-chargeable categories can then be indicated by the company’s cost codes, provided that they match the expenses system categories.”*

*“Our expenses system allows us to book travel either ‘chargeable to engagements’ or to a number of non-chargeable categories indicated by an asterisk. There is also an ‘office costs’ category, but this is not very informative for our current purposes.”*

*“Pre-work for a bid may then be converted to client facing if the bid is successful or if the work falls within fixed disbursement. The work may be transferred to internal air travel if the bid is unsuccessful; work that hasn’t yet had a code established - becomes transferred to internal air travel.”*

One PSSI member firm requires all travel to be declared as chargeable or non-chargeable when booking, in order to attribute costs and re-charge to clients, which means that the travel data can be categorised this way.



## 2.3 Reasons for and benefits of addressing GHG emissions from internal air travel

In the professional services sector, air travel is often a significant percentage of an organisation's carbon footprint. The opportunities to influence it vary, depending on the reasons for travel, the level of control over mode choice by staff, and compliance with requirements of firm travel policies.

As mentioned, the current Guide focuses on internal air travel as it is a useful first step towards reducing emissions from travel more generally. Tackling internal air travel provides an entry point for a firm to introduce a culture of minimising travel-related emissions, which is likely to meet less resistance than if the starting point were client-related travel. This is because:

- Internal air travel is under the more direct control of a firm than client-related travel or commuting especially relating to
  - o The timing of this component of travel.
  - o Whether travel is required at all, and if so, the mode of travel.
  - o The location of travel.
- Since internal travel is not charged to clients, it is likely to be easier to separate it within the fiscal accounting system, making it feasible to track these emissions separately. There may also be a stronger incentive for travel reductions since costs are borne directly by the firm.

Measuring, reporting and managing emissions from internal air travel can provide considerable direct and indirect benefits. These benefits include:

- **Financial:** Reducing unnecessary air travel results in cost savings.
- **Reputation:** A firm's carbon management practices can be a differentiating factor in the market place.
- **Client Demand:** A firm's carbon management practices can be a requirement of being selected as a preferred supplier of goods and services (e.g. to government organisations).
- **Risk Management:** An effective management plan future-proofs against potential introduction of penalties for non-compliance with legislation such as might emerge under the UK's Climate Change Act.
- **Recruitment & Retention:** Low carbon practices can improve the morale of employees, and attract staff at all levels who may want their careers spent in organisations whose values match their own.

## Section 3: ‘Measure’ and ‘Report’: Guidance on Measuring and Reporting GHG Emissions for Internal Air Travel

### 3.1 Introduction

The process of measuring and reducing GHG emissions has been summarised usefully by both the Confederation of British Industry (CBI) and the Cambridge Centre for Climate Change Mitigation Research as having five steps (see [www.4cmr.group.cam.ac.uk/sme-support](http://www.4cmr.group.cam.ac.uk/sme-support)).

- **Step 1:** Inform yourself about climate change, the role of your firm in providing solutions, the risks to your business activities from climate change, and the requirements and implications of emerging legislation and other climate change programmes.
- **Step 2:** Measure emissions from your firm at a level of detail needed to identify specific actions you can take; for this Guide, this means a level of detail suited to understand actions to reduce emissions from internal air travel.
- **Step 3:** Manage reduction activities in your firm, creating programmes that cut across all relevant aspects of your business.
- **Step 4:** Reduce the emissions in your firm by focusing attention first on the most effective projects; this will build confidence and a business case for further projects.
- **Step 5:** Engage your staff, customers and supply chain so they will take the actions needed to support the aspirations of the firm.

The purpose of gathering and analysing data is firstly to produce a carbon footprint, but also to engage staff in examining how specific activities and behaviours contribute to a firm’s GHG emissions. Therefore Step 1 provides the motivation for reductions, and Step 2 becomes the groundwork for identifying and carrying out strategies to reduce emissions, as outlined in Steps 3 to 5.

For this Guide, Step 2 is directed solely towards GHG emissions from Scope 3 as defined in the DEFRA report ‘Guidance on how to measure and report your GHG Emissions’ (2009<sup>7</sup>.)

### 3.2 Before you start

It is important to make transparent the assumptions to be used in developing estimates of emissions. These can be split into assumptions about what to include in the scope of air travel measurement - issues relating to these were presented in Section 2.2. Other assumptions relate to the principles for completion of GHG conversion - these are discussed in Section 3.3.4. Other key assumptions to agree relate to the timeframe covered (calendar year, fiscal year, etc.) by the measurement and reporting, or the treatment of air travel where actual data are not available. It is typical for a firm to extrapolate using spend as a proxy for any ‘missing data’.

By explicitly defining the assumptions used in calculations of air travel, it ensures like-for-like data year on year so that it becomes possible to track progress and diagnose reasons for differences.

<sup>7</sup> The process of calculating the CO<sub>2</sub>e emissions is laid out in the DEFRA/DECC GHG Protocol. That report is the official guidance of the UK government, and was developed to be consistent with the GHG Protocol from the World Business Council for Sustainable Development and the World Resources Institute, as well as with the International Organisation for Standardisation (ISO 14064-1) and the UK Carbon Trust Standard. The Emissions Factors used in the Guidelines have been updated for 2012, so these values should be used.

### 3.3 The process of measuring and reporting GHG emissions for internal air travel

This Guide turns now to a series of issues that must be addressed to reliably produce emissions estimates and to identify strategies to reduce those emissions. It asks:

- Are emissions to be reported as an absolute figure, or as an emissions intensity?
- Who is involved in the process of data collection and review?
- What data are needed to estimate GHG emissions from internal air travel?
- How will these data be used to determine these emissions?
- What reporting processes are needed?

For each of these questions, answers should conform as closely as possible to existing practices and procedures, avoiding disruptive changes that are likely to meet significant resistance. It is useful to note, however, that all the PSSI members report at least their absolute emissions for air travel carbon, and many choose to report intensity as well.

Firms must also remain cognisant of changing regulatory requirements relating to environmental reporting which may lead to an increasing mandatory reporting burden. For businesses headquartered outside of the UK, this may also require additional reporting of carbon emissions under foreign jurisdictions.

#### 3.3.1 Absolute or normalised emissions?

Firms may go through phases of acquisitions, mergers, business growth, decline, etc. during the period of monitoring. These phases may be a significant or even primary cause of any changes in absolute emissions. GHG reporting therefore allows for recognition of these changes by calling for both information about total absolute emissions (CO<sub>2</sub>e per year) and emissions per unit of revenue, or per employee for example CO<sub>2</sub>e per year per employee or CO<sub>2</sub>e per year per £ revenue. Both measures are useful but should be clearly defined in a firm's reporting; this will allow year-on-year comparability and performance against sector benchmarks to be measured.

#### 3.3.2 Who is involved?

Useful data may be collated from personnel in the:

- Travel department
- Travel Management Company (TMC)
- Finance department
- Corporate Credit Card Company
- Business units - individuals travelling, or their line managers

The following roles and responsibilities are important in developing the capacity to measure and address GHG emissions from internal air travel:

- Travel team – potential role as performance data owner, gathering and validating travel-related data; e.g. Kilometres travelled by different modes
- Finance team – potential provider of expenses-based data for internal air travel that can be used as a basis for estimating kilometres travelled, where actual data are not available; finance team data are also useful for cross-checking purposes

- Procurement/contracts team – potential role in contractually establishing data requirements for key suppliers of air travel
- Corporate Social Responsibility, or Sustainability, or Environmental team - potential role in converting travel information into GHG footprint and communicating GHG emissions for internal air travel to relevant stakeholders
- Human Resources team – potential role to measure the impact of travel on well-being, or providing information on how staff view particular modes of travel

It is essential to establish who owns each data set; the requirements for confidentiality under which they may be operating; for what purposes the data may be used; and how the data are to be provided to whomever is calculating the associated GHG emissions.

A plan will need to be in place for on-boarding all individuals with responsibility for gathering, verifying and collating data required: informing the individuals of the reasons for collecting the data, the frequency of the data collection, how the data will be used, how to find those data under their current practices and how to ensure they understand the units in which data must be reported so they will be used correctly. It is also worth thinking ahead and agreeing measurement and reporting objectives early (as much as 12 months ahead of the reporting timeframe) as there can be a significant time-lag for gathering data, and firms will typically need to gather data for a full 12 month period.

### 3.3.3 Data needs

There are two general classes of data required to estimate GHG emissions from internal air travel, summarised in a simple equation:

$$\text{Emissions (tCO}_{2e}\text{/year)} = \text{Activity (passenger-km/year)} \times \text{Emissions Factor (tCO}_{2e}\text{/passenger-km)}$$

When intensity metrics (e.g. CO<sub>2e</sub> per year per unit revenue) are being developed, data for <sup>8</sup>revenue or average number of employees over the period will also be required<sup>9</sup>.

In this equation, all of the data on Activity (for internal air travel) are from within the firm, while the Emissions Factors (also called Conversion Factors) can be found on the DEFRA website. The latest factors are in the August 2012 document Guidelines to DEFRA/ DECC's GHG Conversion Factors for Company Reporting: Methodology Paper for Emission Factors (see <http://www.defra.gov.uk/publications/files/pb13773-ghg-conversion-factors-2012.pdf>). The principle that should be applied is to use the most up to date DEFRA conversion factors available at the time of reporting, as these change annually with changes in the power sector, vehicle fleet, etc.

<sup>8</sup>Firms may choose any intensity metric denominator to best reflect the dynamics of their business. For travel in people-based organisations, the number of employees is a good measure of the likely level of travel especially related to client services, and there is merit in aligning the internal and external air travel metrics to allow easy comparison of trends. There may be some instances in which revenue is more appropriate.

<sup>9</sup>Consideration should be given to which measure of 'people' is appropriate, headcount or Full Time Employee, especially in businesses with a significant population of part time workers. For internal air travel, full time equivalent is a better representation of the expected amount of travel, on the basis that if an individual works 50%, they will only travel 50% of a someone working on a full time basis.

The information required for the equation above, and for its application in identifying strategies for emissions reduction, may include

- **Trips:** specific instances of air travel within the firm.
- **Sectors:** each part of a specific trip, if they have different purposes which span internal or client-facing reasons.
- **Reason:** the reason for undertaking the trip (i.e. whether it is or is not internal air travel). The Reason might include an indication of the purpose of the trip (Board meeting, training, etc.), which will be useful in identifying activities within the firm that are responsible for emissions and whether they should be categorised as internal or external air travel.
- **Origin:** where the trip began.
- **Destination:** the ending point of the trip.
- **Distance:** total kilometres of air travel for that trip or its sectors.
- **Type:** whether the flight is domestic, international short-haul or international long-haul.

Additional optional data for more advanced calculations may include:

- **Class:** the flight class, such as First, Business, Premium Economy or Economy.
- **Airline:** the specific air carrier for the flight.

**The Emissions Factor** in the equation is the tonnes CO<sub>2</sub>e per passenger-km travelled. The source of the emissions factors used to convert consumption (e.g. km) to a green house gas measure (CO<sub>2</sub>e) can influence the outcome. For this Guide, it is assumed that these are from DEFRA's 'Guidance on how to measure and report your GHG Emissions', in particular Annexe 6.

### 3.3.4 Use of the data

With the information above, the equation in 3.3.3 can be used to calculate GHG emissions in one of two ways. For example, firms may take the following steps:

- For each relevant Trip and Sector determine the type, class and distance travelled (in km)
- Sum up the distances by each type-class group into total passenger kilometres for each
- Multiply these distances by the relevant Emissions Factor. Sum these results to identify the total Internal Air Travel GHG emissions for that year.

Depending on the way travel data are provided from travel service providers, it is also possible to calculate the GHG for each trip separately and then aggregate to a firm's total.

### 3.3.5 Completeness and accuracy of GHG estimations

There are several considerations regarding the greenhouse gas conversion or emissions factors, as set out in the 2012 Guidelines to DEFRA/DECC's Conversion Factors for Company reporting which pertain to the completeness of the carbon footprint. The general principle followed by the members of the PSSI is to estimate and report on the air travel carbon footprint to the fullest extent possible and to work towards more complete and accurate measurement year on year. The group includes reference to the year of publication of the factors used in its reporting, and on all the elements below which they have adopted.



Key considerations include:

**Flight type:** DEFRA provides conversion factors for domestic, international short haul and long-haul flights. Yet, some travel service providers submit information on business flights using short, medium and long haul classification. This means that firms may need to recategorise their flight types

**Class of travel:** DEFRA provide conversion factors split out by economy and business for short-haul international flights and additionally for premium economy and first class for long-haul international flights. For greatest accuracy in reporting, it is therefore recommended that firms measure their travel by class. This may require firms to work with travel providers to access data in the same classification as stipulated by DEFRA. On the other hand, DEFRA also provide an average for domestic, short-haul and long-haul international flights, allowing those who do not yet have robust processes in place to allow this split to still report on emissions, with a view to improving the sophistication at a later date. The average conversion factor may also be used for any flights where actual data are not known, and a firm is estimating flight sectors based on spend.

**Circling uplift:** DEFRA indicates that a 9% uplift should be applied to the factors provided to allow for non-direct flights (i.e. not along the great circle) and for delays/circling for all air travel since 2007. If firms use DEFRA’s template to calculate their emissions this is automatically included, but a firm extracts the conversion factors to use in proprietary GHG estimation tools, they will need to apply the circling uplift manually.

**Illustrative or actual air carrier emissions:** Most firms start with measurement of greenhouse gases as indicated above. However, DEFRA’s conversion factors are based on emissions representative of illustrative types of aircraft and over time. As the airlines start to provide specific emissions information, firms may wish to substitute actual footprints for the aircraft.

**Multiplier for non CO2 climate change effects of aviation:** DEFRA’s conversion factors for air travel include the impacts of carbon dioxide, methane and nitrous oxide but do not cover other impacts such as water vapour, contrails and nitrogen oxides. The most recent scientific evidence indicates that this may increase GHG impacts from aviation by a factor of up to 1.9. DEFRA indicate that the use of this multiplier is optional. None of the professional service firms currently apply this multiplier to their carbon emissions figures as it is not yet a definitive requirement to do so.

A summary of the approach taken by professional service firms at time of publication is included in the table below

<i>Basic practice</i>	<i>Advanced practice</i>	<i>Future practice</i>
<i>Use of DEFRA conversion factors (most recent available version at time of report preparation)</i>	<i>Alignment of flight types to more granular DEFRA flight class (i.e. international short-haul – economy or business, international long-haul – economy, premium economy, business and first class)</i>	<i>Use of actual airline carrier and aircraft data, rather than DEFRA illustrative factors</i>
<i>Alignment to DEFRA flight type categories (i.e. domestic, international short haul and international long haul)</i>	<i>Application of the 9% circling and non-direct flight uplift factor</i>	<i>Use of optional multiplier (currently 1.9) for impact of water vapour, contrails and nitrogen oxides associated with air travel</i>
<i>Use of DEFRA ‘average’ class type conversion factors within GHG calculation</i>		
<i>Use of DEFRA conversion factors (i.e. ‘illustrative’ not actual flight carrier and aircraft factors)</i>		

### 3.3.6 Reporting processes

The most relevant and typical values for reporting GHG emissions reductions are (i) the absolute gross tons of CO<sub>2</sub>e per year, (ii) emissions intensity in units of gross tons of CO<sub>2</sub>e per year per FTE or other relevant denominator, (iii) any offsets purchased. These data are typically reported for the reporting year, prior year and a baseline year - against which progress towards reduction of GHG emissions associated with internal air travel are being measured.

The report should be prepared by the relevant Corporate Social Responsibility, Sustainability or Environmental manager, and transmitted to all senior managers of departments of the firm responsible for decisions that affect emissions, as well as to designated executive management of the firm for inclusion in Board discussions. It is often also published in the public domain, on a firm's website, alongside its Annual Report.

### 3.3.7 Developing systems and procedures to ensure data quality

Principles of data collection, archiving and use have been developed in many industries to ensure their reliability. The most important ones are:

- Procedures by which data on air travel are collected must clearly describe the method of collection, the units in which data are reported and the means of storing them.
- There should be a designated individual with the task of overseeing data collection, reviewing those data to ensure their accuracy and signing off on their accuracy.
- There should be periodic random comparisons of data entries against the original source of the data, checking for the rate of errors in transcription.
- There should be checks of data against "out of range" values (e.g. abnormally high distances) that may indicate a problem with the source data or a transcription error.
- There should be a place for centralised storage of the data in a common format so year-on-year comparisons can be made.

### 3.3.8 Getting external verification of your emissions data

Companies are increasingly looking to verify their carbon emissions data, especially if those data are to be published externally. Independent verification gives increased confidence in the data and often identifies new ways to improve measurement processes.

"External verification" might mean contacting the Travel Management Company to confirm the data are correct, hiring another firm to periodically review the data practices of the firm, or having the Internal Audit Team review the data or hiring an external professional carbon accounting or environmental auditors firm to manage the process.

## 4. 'Reduce': Guidance on Identifying Strategies for Reducing GHG Emissions from Internal Air Travel

### 4.1 Introduction

Managing GHG emissions from internal air travel includes identifying strategies aimed at changing any of the factors described in 3.3. It can be useful to think of an effective GHG emissions management strategy for internal air travel as having a hierarchy<sup>10</sup>:

- **Tier 1:** Reduce the reason for travel in the first place. For example, hold video or web conferences rather than flying people to a central location. This may require investment in new technology across the main destinations used by frequent fliers, and training programmes for staff on how to use the technologies.
- **Tier 2:** If travel is still required, choose a different mode (ideally train) with a lower GHG footprint. The GHG emissions impact of these alternatives can differ by as much as a factor of 10 (see list below<sup>11</sup>). 'Modal shift' may be supported by raising awareness of train as an option, or agreeing upgrades for staff to make rail travel a more appealing option where applicable.
  - o Average car: 151.0g CO<sub>2e</sub> per passenger km
  - o Average motorcycle 139.8g CO<sub>2e</sub> per passenger km
  - o Average London bus: 102.8g CO<sub>2e</sub> per passenger km
  - o Average bus – other: 221.3g CO<sub>2e</sub> per passenger km
  - o Average coach: 36.4g CO<sub>2e</sub> per passenger km
  - o National rail: 65.1g CO<sub>2e</sub> per passenger km
  - o Light rail and trams: 80.9g CO<sub>2e</sub> per passenger km
  - o London underground: 83.3g CO<sub>2e</sub> per passenger km
  - o Domestic flights 195.2g CO<sub>2e</sub> per passenger km
  - o Short haul flights 114.7g CO<sub>2e</sub> per passenger km
  - o Long haul flights 132.0g CO<sub>2e</sub> per passenger km
- **Tier 3:** If air travel still is required, choose the trip with the shortest distance, and fly in economy rather than business class, or business instead of first class. This may need process changes, such as policies on approvals for travel by members of staff or by partners, and/or changes to booking policies with service providers.
- At a later stage, consideration may also be given to whether the specific planes used by carriers for the required route may have different GHG footprints. Information on the relative carbon footprint of flights may need to be made available at the point of booking, making it possible for staff or partners to compare this aspect of their buying decision alongside convenience of airport, time of flight, and price.

<sup>10</sup> Some of these ideas are outlined in the ICARUS Project, a Carbon Reduction framework for buyers of business travel, 2012 – see <http://hub.gbta.org/resources2/view/profile/id/20954> and log in to download the report

<sup>11</sup> Source: <http://assets.dft.gov.uk/statistics/series/energy-and-environment/climatechangefactsheets.pdf>. It is worth noting that whilst CO<sub>2e</sub> footprint per km of flights is not high, distances travelled tend to be much longer than by other modes of transport, making it a priority within any travel-carbon reduction programme.

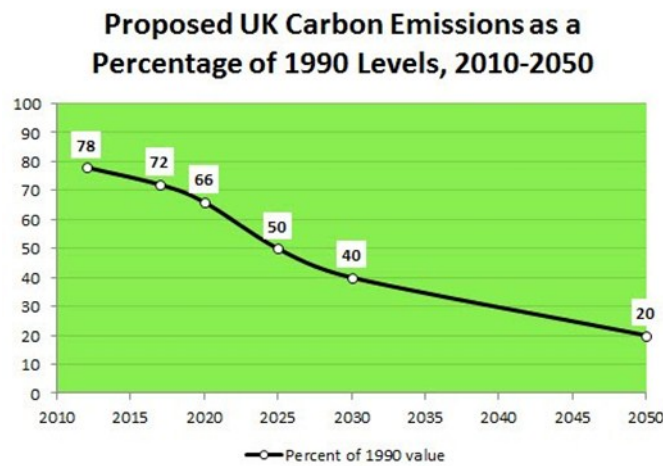
## 4.2 Setting reduction targets

Setting targets for carbon emissions reduction helps focus the organisation on such targets as an operational imperative and allows measurement of progress in reducing overall environmental impacts. In addition, many clients of professional services organisations now increasingly expect firms to be able to demonstrate that they have set reduction targets.

It is important to set targets that are ambitious but realistic. Firm and employee engagement may diminish if the targets are overly ambitious and never reached, but may also diminish if the targets are too weak and hence seen as a token effort by the firm.

A useful starting point is the GHG reduction targets of the UK as set by DECC and shown in the figure below. These targets indicate the percentage reduction, relative to 1990 values, for GHG emissions in all sectors of the UK combined<sup>12</sup>. Most firms do not at present have a regulatory requirement to meet the ambitious DECC targets, but their performance is likely to be judged against those targets, as well as targets being set by other companies.

On the other hand, most firms will not have data for their travel or carbon emissions dating as far back as 1990, so should set their own baseline as far back as is possible, but for a year in which they have data they believe is robust enough to not change dramatically over time (other than for DEFRA conversion factor restatements).



<sup>12</sup> Note, the national GHG inventory includes domestic flights only, not international outbound or return flights.

### 4.3 Establishing an action plan for reduction initiatives

Developing and implementing a plan to support management and reduction of GHG emissions associated with internal air travel will require:

- **Good governance and programme management:**
  - o Assessing the costs and benefits of both action and inaction and articulating the business case for a reduction programme
  - o Establishing existing needs for internal travel and low carbon ways to meet those needs, and using this as the basis for a carbon reduction plan
  - o Gaining the support of management to ensure the plan is given due attention by the firm
  - o Identifying a Board member to champion GHG emissions reductions
  - o Providing the resources needed to carry out the work and fund incentives programmes
  - o Assigning responsibility for reductions to a sufficiently senior manager
  - o Ensuring the plan is implemented throughout all parts of the organisation affected
  - o Using GHG emissions reduction from internal air travel as part of marketing materials
- **Employee engagement:**
  - o Communicating the benefits of reduction in internal travel and GHG emissions to employees, making GHG emissions information available prominently to all employees
  - o Engaging employees in identifying where GHG emissions reduction can be found
  - o Providing ways in which staff can provide feedback into the plan
  - o Seeking to understand employee willingness and concerns around specific programmes
  - o Training employees to implement reduction activities
  - o Making GHG emissions reduction an aspect of performance review
  - o Establishing GHG reduction working groups to raise awareness
- **Working with suppliers:**
  - o Incorporating GHG emissions as a performance criterion in procurement decisions
  - o Engaging with suppliers to bring them on board regarding initiatives
- **Measurement and reporting:**
  - o Monitoring progress, including the reasons behind these reductions
  - o Communicating and celebrating progress towards targets
  - o Aiming for continuous improvement

#### 4.3.1 Engaging and incentivising employees

Employees have different motivations for managing GHG emissions associated with internal air travel. It is important to identify these motivations and provide appropriate incentives to engage staff in reduction activities. Examples of incentives that address a variety of motivations include:

- **Reputation:** Employees enjoy working for a firm that is receiving attention for its low carbon practices and its contribution to reducing the risks of climate change. Find ways to obtain media attention for success, including recognising individual employees and offices for their own contributions to emissions reduction.
- **Client demand:** If an ambitious reduction in emissions makes the firm more attractive as part of the supply chain to another firm, an employee's job is made easier because the firm's goods and/or services will be in greater demand.
- **Risk Management:** Future-proofing the firm through GHG reduction measures provides greater job security.
- **Recruitment & Retention:** Young employees are increasingly using the environmental credentials of a firm as a criterion in choosing where to work. This may suggest lower carbon travel as a recruitment and retention strategy, although this must be balanced against the need for convenience, and comfort e.g. business class flights may be preferred for long haul overnight flights, in spite of the carbon implications.
- **Financial:** Cost savings from reduced internal air travel can be invested elsewhere within the firm in ways that provide incentives for employees to engage.

#### 4.4 A note about carbon offsets

Some firms use carbon offsets as a way of reducing the environmental impacts associated with their carbon emissions, to cover any residual emissions which reduction strategies have not managed to obviate. There are several schemes that allow firms to purchase credits (in tons of GHG emissions); the best known of these are linked to the Clean Development Mechanism, which verifies and runs projects in developing nations to reduce carbon emissions through actions such as the conversion of local fuels to cleaner choices, or the establishment of more sustainable energy generation such as anaerobic digestion projects etc.

There is currently no common approach to the voluntary use of carbon offsets. This is in part because it can be difficult to verify the merits of offset programmes if they do not follow a recognised standard, and in part because such offsets may potentially be seen by some as a way of 'buying out of' the responsibilities of GHG emissions reductions. Primary focus should therefore be on reducing emissions of travel, rather than offsetting.

However, where internal air travel is unavoidable, offsets may be a valid way to reduce global emissions. In these cases, organisations such as DEFRA offer guidance on "good quality" offsets should a firm choose to purchase them (see <http://www.defra.gov.uk/publications/files/pb13309-ghg-guidance-0909011.pdf>), and on how to report offsets. If firms wish to report on their offsets, the basic principle is that gross emissions should be reported first, and any offsets shown thereafter, together with the resulting 'net' emissions (actual emissions minus offsets) for the firm's activities.

## Annex 1: Selected List of Legislation and Reporting Mechanisms for GHG Emissions

Below are links to key pieces of legislation and initiatives related to GHG reporting. These links are included as a resource base because they represent the most significant legislation and/or because they are particularly relevant for the business sector.

### International Climate Policy and Processes

[United Nations Framework Convention on Climate Change \(UNFCCC\)](#)

<http://unfccc.int/2860.php>

Homepage of the UNFCCC, the body that coordinates action on intergovernmental efforts to address climate change. In particular, it coordinates implementation of the Kyoto Protocol.

[UNFCCC - Kyoto Protocol](#)

[http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)

Summarises the mechanisms through which the Protocol is implemented.

[UNFCCC – GHG Emissions Reporting Requirements](#)

[http://unfccc.int/national\\_reports/annex\\_i\\_ghg\\_inventories/reporting\\_requirements/items/2759.php](http://unfccc.int/national_reports/annex_i_ghg_inventories/reporting_requirements/items/2759.php)

Outlines the requirements for yearly reporting by all Annex 1 Parties of anthropogenic GHG emissions and removals by ‘sinks’ in six sectors (energy, industrial processes, solvents, agriculture, waste, and land use, land-use change and forestry).

### European Union

The European Union is a signatory to both the UNFCCC and the Kyoto Protocol. The EU has passed legislation and developed detailed guidance and reporting regulations that supplement those administered by the UNFCCC.

[EU Emissions Trading Scheme](#)

[http://ec.europa.eu/clima/policies/transport/aviation/index\\_en.htm](http://ec.europa.eu/clima/policies/transport/aviation/index_en.htm)

The EU-ETS is a mechanism to control GHG emissions by providing economic incentives to achieve reductions in emissions. The ETS currently operates in 20 countries. Airline emissions were included as of 2012.

[Greenhouse Gas Monitoring and Reporting](#)

[http://ec.europa.eu/clima/policies/g-gas/index\\_en.htm](http://ec.europa.eu/clima/policies/g-gas/index_en.htm)

Outlines the EU’s involvement in monitoring and reporting as required by the Kyoto Protocol. Through the “Documentation” tab it serves as a portal to relevant EU legislation and EU GHG Inventory Reports.

### United Kingdom

[UK Climate Change Act of 2008](#)

[http://www.decc.gov.uk/en/content/cms/legislation/cc\\_act\\_08/cc\\_act\\_08.aspx](http://www.decc.gov.uk/en/content/cms/legislation/cc_act_08/cc_act_08.aspx)

Legislation committing the UK to reducing GHG emissions

[The UK Low Carbon Transition Plan: National Strategy for Climate and Energy](#)

<http://centralcontent.fco.gov.uk/central-content/campaigns/act-on-copenhagen/resources/en/pdf/>

DECC-Low-Carbon-Transition-Plan Identifies governmental strategies for reaching the 2050 GHG emissions reduction targets

Department of Energy and Climate Change (DECC) – Emissions and Climate Change Statistics

[http://www.decc.gov.uk/en/content/cms/statistics/climate\\_stats/climate\\_stats.aspx](http://www.decc.gov.uk/en/content/cms/statistics/climate_stats/climate_stats.aspx)

In the UK, DECC is responsible for annual reporting of anthropogenic (i.e. caused by 'man') GHG emissions and removals to the UNFCCC. Their website provides links to emissions statistics, monitoring and verification systems, and reports on the impacts of climate change.

Carbon Disclosure Project (CDP)

<https://www.cdproject.net/en-US/Pages/HomePage.aspx>

An independent not-for-profit organisation, CDP consults with businesses and governments regarding reducing GHG emissions. In 2012, CDP requested GHG data from over 8000 companies including professional services firms.



## Annex 2: GHG Emissions Protocols and Accreditation Schemes

Various GHG emissions accounting tools and toolkits have been developed. Below are business-led protocols and schemes the PSSI has identified as being relevant for the Professional Services sector. The primary guidance in the UK remains that of DEFRA, mentioned at several points in this Guide.

### GHG Protocol

<http://www.ghgprotocol.org>

Developed by the World Resources Institute and the World Business Council for Sustainable Development, the Protocol is an internationally-used GHG emissions accounting tool with specific guidance for the business sector. The link above is the portal to general information about the tool.

*The GHG Protocol: A Corporate Accounting and Reporting Tool*

<http://www.ghgprotocol.org/standards/corporate-standard>

This is the companion report to the GHG Protocol item above.

*The Corporate Value Chain (Scope 3) Accounting and Reporting Standard*

<http://www.ghgprotocol.org/standards/scope-3-standard>

A second companion piece which defines 15 categories for reporting Scope 3 emissions, including business travel.

### Project ICARUS

<http://icarus.itm.org.uk>

Part of the Global Business Travel Association (GBTA), Project ICARUS is a corporate sustainability programme for the travel and meeting industry. It offers a subscription service for travel buyer/managers that provides access to toolkits for measuring, managing and reducing carbon dioxide emissions.

### carboNZero

<http://www.carbonzero.co.nz> and <http://www.carbonzero.co.nz/cemars>

CarbonNZero has developed a GHG emissions accreditation programme for businesses. Information on their carboNZero and CEMARS schemes may be found on this site.

## Annex 3: Sources of Information Used

Several documents have been central in developing this Guide, and provide additional useful information. Many of these documents were also mentioned in, and referenced in, the text of the Guide itself.

- The World Business Council for Sustainable Development and the World Resources Institute entitled “The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard”, World Business Council for Sustainable Development and the World Resources Institute available at [www.ghgprotocol.org/standards/corporate-standard](http://www.ghgprotocol.org/standards/corporate-standard).

“Guidance on how to measure and report your greenhouse gas emissions”, DEFRA/DECC, 2009. It can be downloaded at <http://www.defra.gov.uk/publications/files/pb13309-ghg-guidance-0909011.pdf>.

The Emissions Factors used in this Guide are taken from the supplemental material to the DEFRA/DECC guidance, specifically the report by DEFRA/DECC entitled “2012 Guidelines to DEFRA/DECC’s GHG Conversion Factors for Company Reporting:”, available at <http://www.defra.gov.uk/publications/files/pb13773-ghg-conversion-factors-2012.pdf>

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