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**Inogen WorldView® Conference, April 2009
Boston, Massachusetts**

Carbon Footprint Summary Report

Shining Earth™ Project No. 09-3061.01



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INOGEN WORLDVIEW CONFERENCE, APRIL 2009
BOSTON, MASSACHUSETTS
CARBON FOOTPRINT SUMMARY REPORT
SHINING EARTH™ PROJECT NO. 09-3061.01

1.0 INTRODUCTION

1.1 Authorisations, Context and Purpose

The 2009 Spring Inogen WorldView® Conference was held in Boston, Massachusetts on the 23rd April 2009. The conference centred on “Value Creation in the Investment Cycle” and “Smart Money doing Smart Things”, and was attended by over 70 delegates, representing Inogen’s international members and associates. Attendees travelled from destinations around the globe.

Shining Earth™, part of Delta-Simons Environmental Consultants Limited, an associate member of Inogen Environmental Alliance was instructed by Inogen to develop a bespoke questionnaire for the event to capture, measure and calculate the carbon dioxide (CO₂) emissions associated with the attendees transport to and from the conference.

It is proposed that emissions data captured at the event will be used by Inogen to inform a carefully selected carbon offset purchase programme. In addition, the data collected will also be used to inform the number of flights, car journeys, public transport and sustainable transport methods used by attendees to and from the conference, which will be used to collate a record of attendee travel methods.

The purpose of this Summary Report is to provide an overview of the methodology and outcomes of the data capture exercise, including the total CO₂ emissions calculated, and to summarise the carbon offsetting that has been undertaken by Inogen to counterbalance the emissions generated by attendee travel.

1.2 Scope of Works

The scope of works for the Inogen WorldView® Conference Carbon Footprint is presented in Table 1.

Table 1- Scope of Works

Data collection and offsetting	1. Design and implementation of a web based questionnaire to capture data on all delegate and attendee travel to and from the event.
	2. Issue of an email directing attendees to the data capture web page.
	3. Calculation of the total CO ₂ emissions using guidance from the Department for Environment, Food and Rural Affairs (DEFRA) 2008 Greenhouse Gas Conversion Factors, including aggregation of those not captured by the questionnaire.
Interpretation and reporting	4. Provision of a Summary Report detailing the total calculated CO ₂ emissions, and interpretation of the data.

In addition to the above, the following scope will be undertaken following issue of the Report:

- Δ Offsetting the calculated CO₂ emissions associated with the captured transport data by 100% using a combination of international renewable energy schemes and methane capture projects. A certificate detailing the offsetting will also be provided to Inogen;
- Δ Provide feedback within the Summary Report, and via electronic email format to all delegates and attendees to the Inogen WorldView® Conference in Boston to present information on the total CO₂ emission calculated, offset details and transport options and recommendations; and
- Δ Provide a summary update about the data capture exercise and offsetting projects for the Inogen Insights newsletter.

2.0 METHODOLOGY

2.1 Data Capture

Shining Earth™ developed a web based questionnaire to capture the data necessary to calculate the CO₂ emissions associated with the transport of attendees to and from the Inogen WorldView® Conference, held in Boston on the 23rd April 2009. The questionnaire was based upon the Greenhouse Gas Conversion Factors (GGCF) document produced by DEFRA in 2008. This document was developed and compiled using the latest guidance available from the UK Greenhouse Gas Inventory for 2006, the Intergovernmental Panel on Climate Change (IPCC), Digest of UK Energy Statistics, Energy Savings Trust (EST), UK Petroleum, Industry Association (UKPIA), Department for Transport (DfT), the Society of Motor Manufacturers and Traders Ltd (SMMT) and the Transport Research Library (TRL). The questionnaire was designed to be closely aligned with GGCF document to ensure the data capture method was accurate and verifiable.

The data collected from the questionnaire included (where applicable) vehicle category, class of flight travel, fuel type, engine size (in litres or cubic centimetres), vehicle weight in tonnes, and the distance travelled based upon a single trip to the conference location. If the mileage was unknown, the starting location of the attendee's journey was collected so a distance could be subsequently calculated by Shining Earth™. The number of passengers within each vehicle for attendees who travelled by car was also recorded.

The vehicle categories included within the questionnaire were:

- Δ Air Passenger Travel;
- Δ Car/Taxi;
- Δ Train;
- Δ Bus/Coach/Mini-bus;
- Δ Ferry;
- Δ Van;
- Δ Motorcycle/Moped;
- Δ Bicycle; and
- Δ Walking

Each attendee was asked to select the method(s) of transport used to travel to the conference in Boston. Due to the distance travelled by some of the attendees, and the variety of travel methods that could be used by individual, all attendees were asked to provide travel details for each stage of their full journey. Once the selections had been made, attendees were directed to the relevant webpage for that method, and asked to select a number of further sub-categories, including mileage, flight class and fuel type.

Following the conference, emails were sent to all attendees containing a link to the web page containing the questionnaire. Data from a total of 46 attendees was captured by Shining Earth™.

2.2 Data Measurement and Interpretation

Upon completion of the data capture exercise, the results were imported into a bespoke database designed based upon the DEFRA GGCF document. Raw data from transport to the event was imported and calculations of the total CO₂ emissions were determined.

Where car sharing occurred, the total CO₂ emissions were divided by the number of people within each vehicle in order to provide the relative CO₂ per person. This method was chosen in order to prevent data replication and maintain data accuracy.

Shining Earth™ captured data on 59% of the attendees to the conference. As such, in order to calculate defensible CO₂ emissions for the conference, and following discussions with Peter Penning, President and CEO of Inogen Environmental Alliance, emissions for the remaining attendees were based upon the average values that had been calculated using the available data from the questionnaire and capture exercise.

3.0 RESULTS

3.1 Transport Methods

In total, 78 people attended the Inogen WorldView® Conference on 23rd April 2009, with 46 people (59%) completing the questionnaire and recording their transport details. The transport method details of those that completed the questionnaire are presented in Table 2.

Table 2 – Transport Method Data

Travel Method	Total Number of Journeys Recorded	Percentage of Total (%)
Air Passenger Travel	39	70.9
Car/Taxi	11	20.0
Train	4	7.3
Bus/Coach/Mini-bus	1	1.8
Ferry	0	0.0
Van	0	0.0
Motorcycle/Moped	0	0.0
Bicycle	0	0.0
Walking	0	0.0
TOTAL	55	100%

As can be seen in the table above, although 46 people completed the questionnaire, a total of 55 journey details were recorded as attendees were asked to provide information pertaining to the entirety of their journey, and the different travel methods used. Given the distance that some of the delegates were travelling to attend the conference, it was necessary to record each section of their journeys in order to calculate the most accurate carbon footprint associated with all travel.

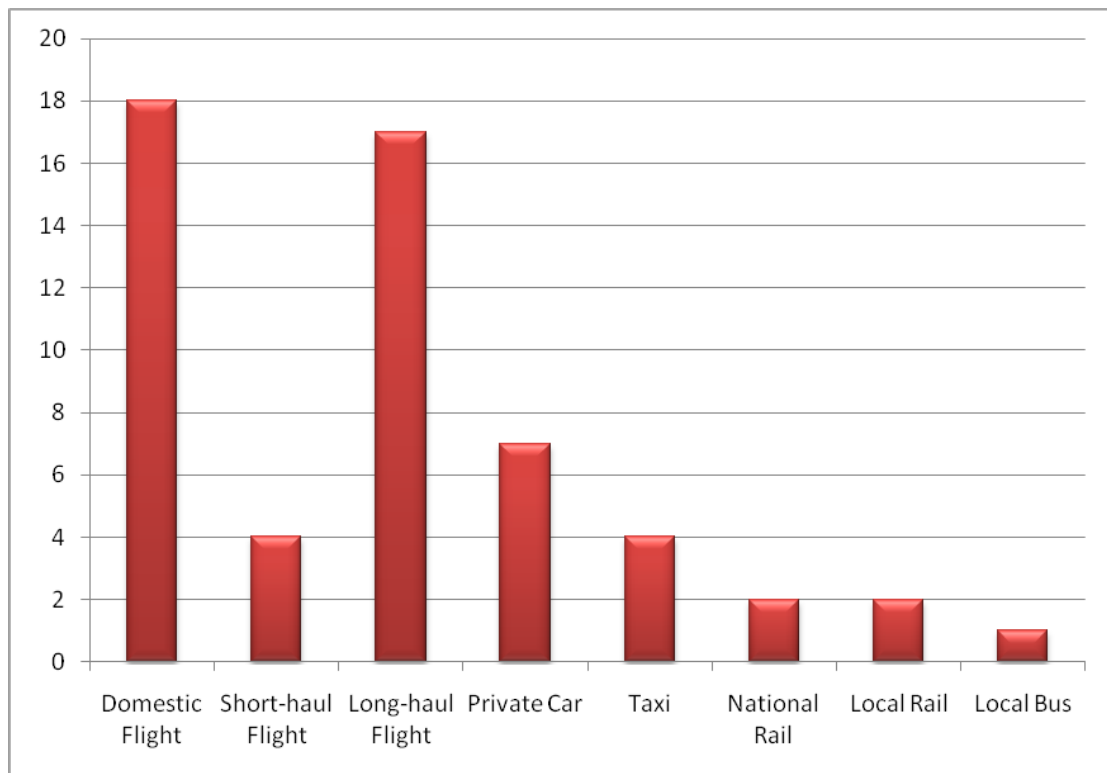
Of those attendees who completed the questionnaire, 38 used air travel, which represents approximately 83% of total attendees, and approximately 71% of the journeys that were made by attendees. Furthermore, of the flights that were made, approximately 45% of them were international long-haul flights which travelled a distance greater than 3,000 miles, and a round journey of over 6,000 miles. These long-haul flights were responsible for 56% of the total CO₂ emissions generated by attendee air travel.

In addition, only 15% of total attendees who completed the questionnaire travelled to and from the conference by private car. The emissions from private cars were responsible for only 1.9% of the total CO₂ emissions generated.

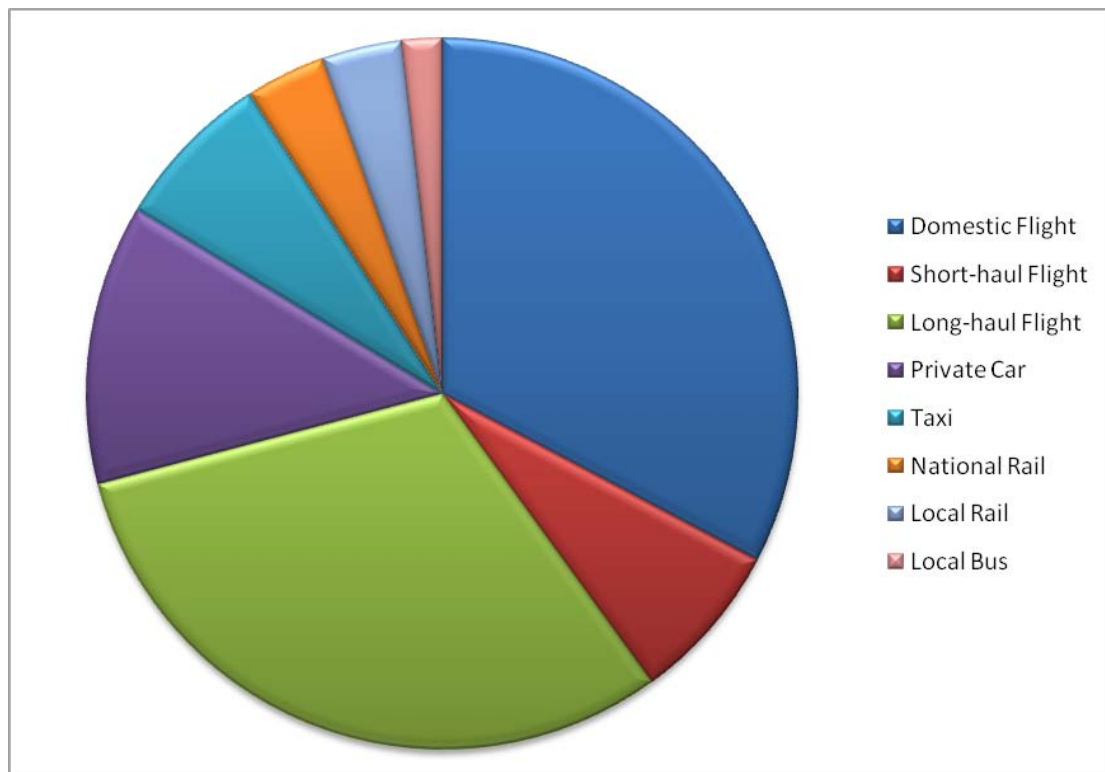
No data was collected from anyone who had travelled by ferry, van or motorcycle to the conference. In addition, no data was collected from anyone who had walked or cycled to the conference.

The below graphs show the transport methods used for the majority of attendees journeys to the event (Graph 1), and each transport method used as a percentage of the total (Graph 2).

Graph 1 – Transport methods used by attendees to the Inogen WorldView® Conference



Graph 2 – The percentage of each transport method used by attendees to the Inogen WorldView® Conference



From the data collected it has been calculated that, of the attendees who used cars and taxis within their journey, only 36.4% vehicle shared with at least one other attendee. The remaining 63.6% of car journeys were made alone.

The average distance travelled by attendees to the event was approximately 2,488 miles, with a round trip of approximately 4,976 miles. Approximately 35% of attendees who completed the questionnaire travelled less than 1,000 miles, and had an overall round journey of 2,000 miles. In addition, approximately 15% of those who completed the questionnaire travelled a distance greater than 5,000 miles, and had an overall round journey that exceeded 10,000 miles. Attendees whose total journey to and from the conference exceeded 2,000 miles and 5,000 miles were responsible for 57.2% and 34.1% respectively, of the CO₂ emissions generated.

3.2 Carbon Emissions

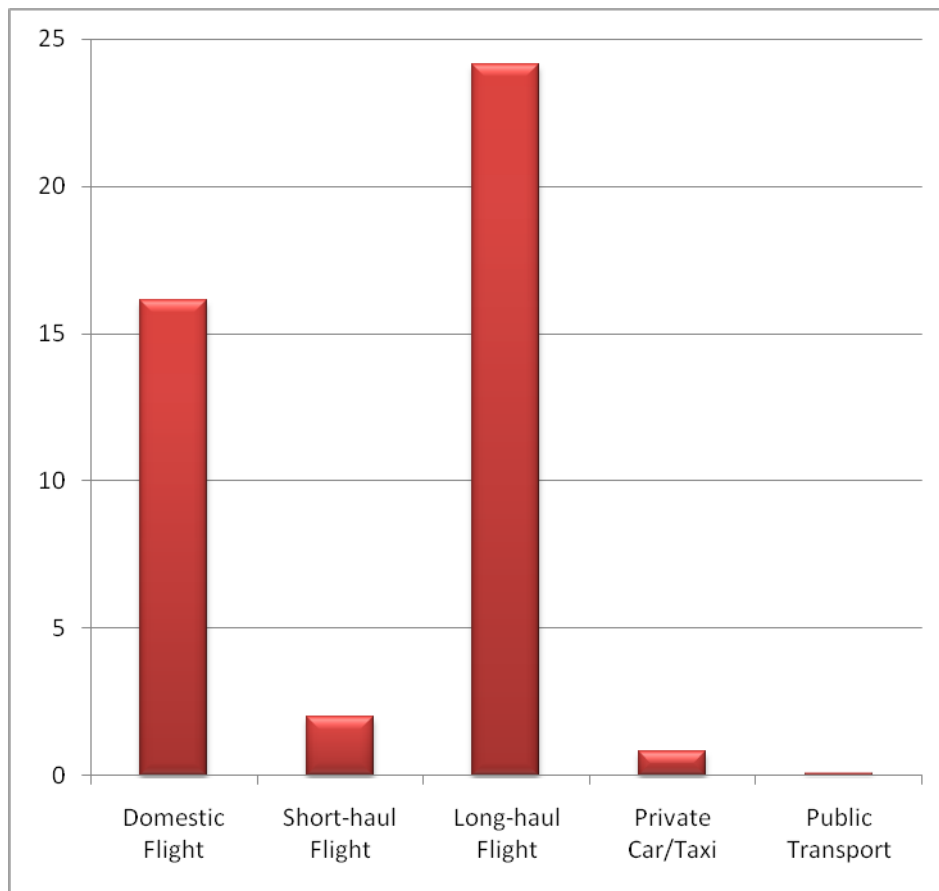
The total value of CO₂ emissions calculated by Shining Earth™ from the data obtained by the web questionnaire equates to 43.13 tonnes of CO₂. However, this value represents 59% of the total number of attendees to the conference. Using the collected data, it has been calculated that the average emissions per attendee equated to

approximately 0.94 tonnes of CO₂. In total 78 people attended the WorldView® Conference and, therefore, the average value of 0.94 tonnes has been used to calculate the emissions of CO₂ from the remaining attendees. As such, the total emissions associated with all attendees' travel to and from the conference have been estimated at 73.3 tonnes of CO₂.

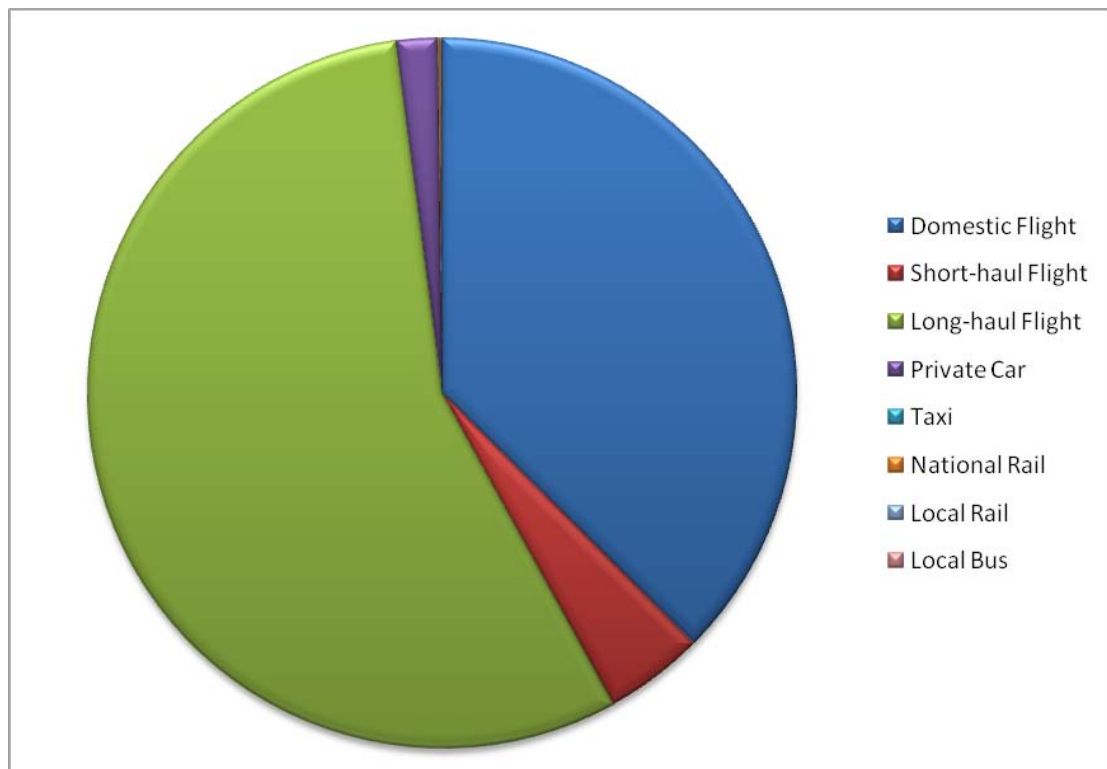
It has been calculated that 97.93% of the CO₂ emissions are associated with emissions from air travel, including domestic, short haul and long haul flights. Within air travel, long haul flights were responsible for the largest percentage of emissions, at over 57%. Approximately 1.95% of the calculated emissions are associated with road transport, including cars, taxis and public transport, whilst the remaining 0.12% of emissions is associated with train journeys. Graph 3 below shows the proportion of CO₂ emissions calculated in relation to the transport method, and Graph 4 shows the percentage of the total emissions calculated attributed to each transport method.

For the purpose of Graph 3, private cars and taxis have been included within the same data set, and national rail, local rail and local bus data have been included as public transport.

Graph 3 - CO₂ emissions associated with transport method (in tonnes of CO₂)



Graph 4 - The percentage of CO₂ emissions attributed to transport method



4.0 CARBON OFFSETTING

The offsetting of the calculated CO₂ emissions for attendee travel associated with the Inogen WorldView® Conference in Boston, on 23rd April 2009 is a useful mechanism to assist Inogen Environmental Alliance in demonstrating its commitment to reducing its impact upon the environment, and the impact of the WorldView® Conference. In addition, the collected data can be used by Inogen to plan further transport strategies, and make significant reductions in the carbon emissions associated with future WorldView® Conference's and event. As the dataset grows, Shining Earth™ can interpret these results in order to identify trends and support Inogen in designing these transport strategies.

Shining Earth™ provided Inogen Environmental Alliance with a range of offsetting options, including verified emission reduction credits on a not-for-profit basis, for schemes including methane capture and hydroelectric generation in association with The CarbonNeutral Company, in addition to carbon offset credits for afforestation and habitat creation schemes within the UK in association with the Woodland Trust.

The total calculated CO₂ emissions from travel to and from the Boston WorldView® Conference have been 100% offset by Inogen and, as such, all attendee travel can be classified as carbon neutral. The emissions have been offset using a combination of verified emission reduction credits for international renewable energy and methane capture projects.

These projects include the construction of hydro power stations in the Guizhou province of China, where 36.65 tonnes of the CO₂ will be offset. The Guizhou hydro power plants are situated on remote tributaries of the region's main rivers, and generate a clean source of energy that will displace electricity generated by existing coal-fired power plants, as well as contributing to the sustainable development and local economy of the region. The remaining 36.65 tonnes of CO₂ will be offset via the capture of methane from the Meihe coal mine in the Jilin province of China, which will be used to generate electricity for the Northeast China Grid. The Jilin methane power project prevents coal mine methane, a gas which is 21 times more powerful as a greenhouse gas than carbon dioxide, from being released into the atmosphere. This project also displaces electricity supplied to the grid with cleaner energy. Both projects have been verified to the Voluntary Carbon Standard (VCS).

5.0 LIMITATIONS

The data and information used to form the calculations contained within this Report was collected by Shining Earth™ following the Inogen WorldView® conference, held in Boston, Massachusetts on 23rd April 2009. All subsequent data estimations have been made using the existing raw data that was collected.

The information provided by attendees and exhibitors at the event was taken in good faith, and all estimates of emissions have been made using documents produced by the DEFRA GGCF accurate at the time of print.

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10th July 2009
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