

BUSINESS CARBON FOOTPRINT REPORT

Prepared for

IFB Ltd,

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**Expense Reduction
Analysts**

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EXECUTIVE SUMMARY

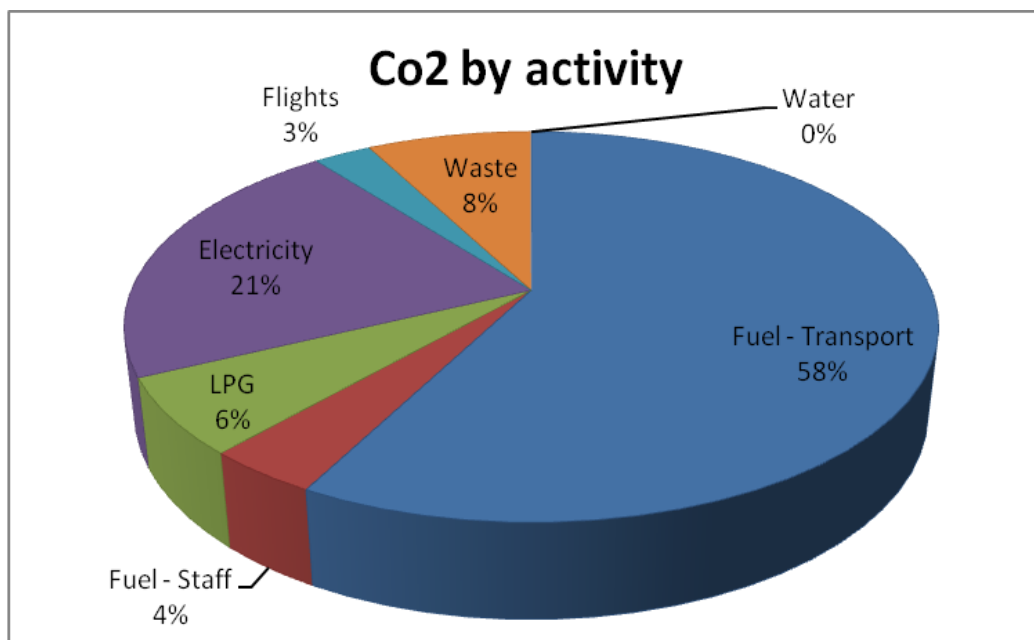
IFB Ltd is a privately owned British company which commenced trading in 1984 and currently employs around 50 personnel. Based in Stoke on Trent, they offer diverse freight solutions by road, sea and air. They also provide warehousing and storage facilities at their 45,000 sq ft facility in the heart of Staffordshire and enjoy excellent links to the main road and rail networks.

Committed to preserving the environment and to minimising any adverse impacts associated with its activities, IFB Ltd follows a process of continuous improvement throughout their operational methods and working practices, including the adoption of sustainable waste management systems.

As part of their overall environmental policy Expense Reduction Analysts has been engaged to calculate, as accurately as possible, the carbon emissions associated with the operations of IFB Ltd.

The period of measurement was 31st May 2010 to 1st June 2011 and your footprint is as follows:

Total	Total (tonnesCO2e/year)	643.1
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Footprint per employee (50 staff): **12.86 tonnes CO2 per employee**

Electricity footprint per m2 (45,000 m2): **0.003 tonnes CO2 per m2**

Fuel per employee (50 staff): **7.93 tonnes CO2 per employee**

Waste per employee (50 staff): **1.004 tonnes CO2 per employee**

SCOPE

Based upon the data provided by IFB Ltd, this report calculates the business carbon footprint, in tonnes of carbon dioxide equivalent (tCO₂e) emissions, for the period 31st May 2010 to 1st June 2011.

The business activities covered in this assessment include:

- Transport
- Warehousing & Storage Operations
- Office Administration
- Business Travel

IFB Ltd will use the 2010/11 data as a benchmark against which to measure future performance.

METHODOLOGY

The GHG accounting and reporting approach undertaken in this report follows the guidance and principles set out by the Department for Environment, Food and Rural Affairs (Defra) and the "*Greenhouse Gas Protocol Corporate Accounting and Reporting Standard*" (hereafter referred to as the GHG Protocol) developed by the Greenhouse Gas Protocol Initiative. These are the most widely used and accepted methods for conducting corporate carbon footprints.

The GHG Protocol requires emissions to be reported against the three different "scopes" described below:

- **Scope 1 - Direct emissions**

Direct emissions resulting from activities within the organisation's control. Includes on-site fuel combustion, manufacturing and process emissions, refrigerant losses and company vehicles.

- **Scope 2 - Indirect emissions: electricity and heat**

Indirect emissions from electricity, heat or steam purchased and used by the organisation.

- **Scope 3 - Indirect emissions: other**

Any other indirect emissions from sources not directly controlled by the organisation. Examples include: employee business travel, outsourced transportation, waste disposal, water usage and employee commuting.

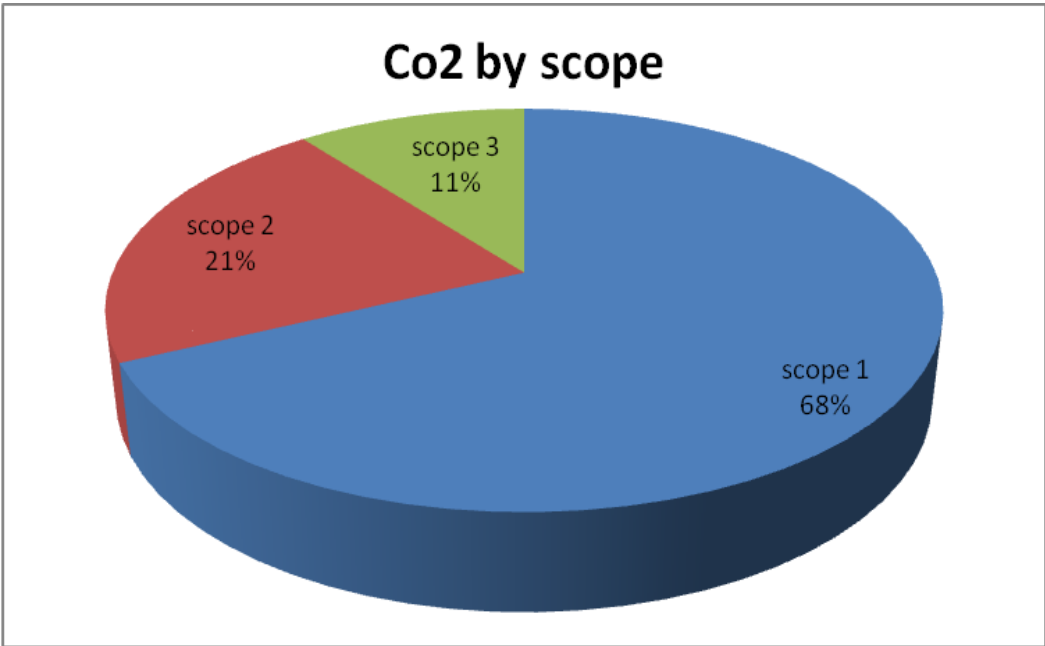
Emissions covered under Scopes 1 and 2 are mandatory for reporting, while Scope 3 emissions can be reported on a voluntary basis.

This report excludes employee commuting (to/from work) as this is not paid for by the company. It is considered to be part of an individual's own impact and therefore avoids double counting.

It is obvious that accounting for such a wide range of information will lead to data being presented in a variety of different units. This is the reason for the use of carbon conversion factors (CCF's). CCF's are used to calculate the mass of CO₂e (carbon dioxide equivalent) emitted per unit. Units may be kilometres (vehicular emissions), kWh (Electricity) or kilogram's (raw materials, waste) for example.

It should also be stated that the universal unit kgCO₂e is used as this expresses the emission of all greenhouse gasses listed under the Kyoto Protocol, as CO₂. The six greenhouse gases determined at Kyoto (Methane, Nitrous Oxide, Hydro fluorocarbons, Per fluorocarbons, Sulphur Hexafluoride and Carbon Dioxide) all have a different potential for global warming. A common unit, carbon dioxide equivalent, is used.

Carbon conversion factors have been determined by a number of sources. Those published by Defra are the most commonly used in the UK and have been used in this report.



RESULTS

Scope 1 – Direct Emissions

Fuel – Transport

	Amount in Units	Conversion factor	kg CO2e
Fuel - Transport	139,058 Litres	2.672	371,563
Diesel Vans, LGV & HGV	Total (tonnes)		371.6

The company operates a fleet of vans, LGV's & HGV's, which is the core component of their business activity as freight operators.

Fuel – Staff Business Travel

	Amount in Units	Conversion factor	kg CO2e
Fuel – Staff Business Travel	7,742 Litres	2.672	20,687
Diesel Cars	Total (tonnes)		20.7

	Amount in Units	Conversion factor	kg CO2e
Fuel – Staff Business Travel	1,753 Litres	2.322	4,070
Petrol Cars	Total (tonnes)		4.1

The company operates a small fleet of six cars (4 diesels, 2 petrol) for its Directors and senior employees. Mostly these are used for business travel.

Forklift Trucks – LPG

	Amount in Units	Conversion factor	kg CO2e
Forklift Trucks – LPG	27,265 Litres	1.492	40,679
	Total (tonnes)		40.7

FLT's used within the Warehouse and Despatch areas are fuelled by LPG. Currently, this is contained and purchased in the form of standard 18kg propane gas bottles (cylinders). In order to determine the usage, in litres, a LPG conversion factor of 1kg = 1.98 litres, has been used. (conversion source; Calor Gas UK)

Scope 2 – Indirect Emissions

Electricity

	Amount in Units	Conversion factor	kg CO2e
Electricity Consumption	263,032 kWh	0.525	137,992
	Total (tonnes)		138

IFB Ltd already benefits from a half hourly (monitoring) electric meter being installed. Expense Reduction Analysts is continuing to monitor consumption and will report their findings each quarter.

Scope 3 – Other Indirect Emissions

Staff Business Flights

	Amount in Units	Conversion factor	kg CO2e
Staff Business Flights	10,878 km	1.4885	17,649*
Short Haul International	Total (tonnes)		17.7

*total includes 9% uplift factor – IPCC Aviation and Global Atmosphere 8.2.2.3

Company representatives made a total of six short haul return flights, all to European destinations, within the period being evaluated.

Waste Disposal & Recycling

Waste Disposal & Recycling	Amount in Units	Recycled	kg CO2e
General Waste - C&I	15.6 tonnes	n/a	45,880
Cardboard & Paper	2.3 tonnes	-1,604	533
Plastic Film	1.0 tonnes	n/a	2,535
Non Ferrous Metal (UBC's)	0.2 tonnes	-1800	400
Kitchen/Food Waste	0.2 tonnes	n/a	873
	Total (tonnes)		50.2

Currently all cardboard and paper are segregated by IFB Ltd and recycled by one of their waste providers. UBC's are also segregated and recycled. The figures shown in the table above reflect these recycled impacts with a reduced overall emissions figure.

Expense Reduction Analysts has already reviewed IFB Ltd's waste arisings and alternative arrangements have been agreed. These will be implemented, in January 2012, once the current provider's contractual arrangements have expired. As a result, the recycled element of all waste streams shown will be significantly improved.

Water

	Amount in Units	Conversion factor	kg CO2e
Water Usage	306 m3	0.300	92
	Total (tonnes)		0.09

The water consumption figure used of 306m3 is an annualised estimate based upon two actual meter readings, taken in 2011 H1, by Expense Reduction Analysts. This was necessary because the meter reading shown on the water supplier's invoice, dated 13th May 2010, was itself based upon an estimated reading and was clearly overstated at that time.

As water consumption is being reported on a voluntary basis we believe this course of action is sensible in order to determine a suitable datum point for future consumption measurements.

CONCLUSIONS

Overall then, it is clear that IFB Ltd's main contribution to global warming is from the usage of Diesel Fuel (62%) and Electricity (21%). Considering also Waste (8%) and LPG (6%), these four areas combined account for some 97% of the total of IFB Ltd's Co2 emissions.

With this corporate carbon footprint analysis IFB Ltd has taken the first step in a cycle of activity to measure, understand and take action to reduce its GHG emissions. Apart from the financial ones, the other benefits to be gained include;

- ✓ Demonstrates a commitment to environmental responsibility
- ✓ Shows an understanding of the organisation's impact on the world's resources
- ✓ Assures customers, employees, and external stakeholders of a commitment to tackling climate change
- ✓ Satisfies new clients wishing to invest in environmentally responsible organisations
- ✓ Meets and exceeds the legal and corporate social responsibility statutory requirements
- ✓ Prepares for future regulations to limit greenhouse gas emissions

RECOMENDATIONS

In establishing its carbon footprint IFB Ltd now has the data in order to benchmark and measure its future performance. Consideration should therefore be given to;

1. Development of an improvement plan and to set year on year reduction targets and KPI's
2. Continuing measuring, recording and monitoring data, on the usages detailed in each area of this report, to an agreed frequency
3. Appointing a member of staff to become an environmental "champion" and to oversee delivery of the plan
4. Regular communication, of performance against the plan, to all employees
5. Publishing this report on the Company web site and making it available for download

REFERENCES

Department for Environment, Food and Rural Affairs (<http://www.defra.gov.uk>)

The Greenhouse Gas Protocol Initiative (<http://www.ghgprotocol.org>)

Carbon Trust (<http://www.carbontrust.co.uk>)

Appendix A

Life-Cycle Conversion Factors for Waste Disposal - Waste Fractions Table

Life-Cycle Conversion Factors for Waste Disposal		Scope 3						Total Net kg CO ₂ e emissions by waste fraction
Waste fraction	Tonnes of waste PRODUCED	Tonnes of waste treated /disposed of by ⁴ :						
		Recycling		Energy from waste		Composting	Landfill	
		Open Loop ³	Closed Loop ³	Power only - moving grate	Anerobic Digestion			
Paper and Card	2.3	2.3					533	
Kitchen/food waste	0.2					0.2	873	
Garden/plant waste							0	
Other organic							0	
Wood							0	
Textiles							0	
Plastic (dense)							0	
Plastic (film)	1.0					1.0	2,535	
Ferrous metal							0	
Non-ferrous metal	0.2		0.2				400	
Silt/soil							0	
Aggregate materials							0	
Misc combustibles							0	
Glass							0	
Tyres							0	
Estimated impact of other materials (municipal and C&I)	15.6					15.6	45,880	
Total Net kgCO₂e emissions by category	52,254	-1,604	-1,800	0	0	0	1,372	
Grand Total Net kgCO₂e emissions							50,221	