



Carbon Footprint Report - Fiscal Year 2010-



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Report by



Table of content

INTRODUCTION.....	1
1. CONTEXT	2
1.2. WHAT IS ONE TONNE OF CO ₂	2
2. CARBON FOOTPRINT	3
2.1. QUICK PRESENTATION OF THE EIB AND EIF.....	3
2.2. METHODOLOGY.....	3
2.3. CARBON BALANCE.....	5
2.3.1. Global footprint for EIB and EIF.....	5
2.3.2. In-company emissions.....	6
2.3.3. Mobility emissions.....	7
2.3.4. Paper consumption.....	10
2.3.5. Waste.....	10
3. CARBON TAX / CARBON OFFSETTING.....	12
4. CONCLUSION.....	12
5. ENVIRONMENTAL INDICATORS 2010	14
REFERENCES	15
KEY TERMS	16

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Introduction

Europe has set the ball rolling and real action to help reach the 20-20-20 targets for 2020 are now being implemented. Across thousands of companies and organisations are now calculating their Greenhouse Gas emissions related to their direct and indirect activities. Some companies are measuring their emissions due to pan European regulation (e.g. ETS). Others companies are calculating these emissions due to National regulation (e.g. Bilan Carbon® in France or the CRC in the UK). However many companies are calculating their emissions to show their corporate social responsibility and so as to gauge their impact on climate change. Carbon footprinting has helped many International and European Institutions quantify the CO2 reduction efforts they have made or are committing to make over time through renewable energy initiatives, energy efficiency transport and logistics optimization and many other innovative solutions. The EIB has been calculating their CO2 footprint since 2007 giving them a good baseline from which to evolve in the future. This report summarises the results of the 2010 carbon footprint of the EIB.

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1. Context

1.2. What is one tonne of CO₂

- ⌚ 3 month of heating in an average flat in Luxemburg
- ⌚ 1 return ticket from Luxemburg to Malaga by plane
- ⌚ 5 returns from Paris to London by plane
- ⌚ 6000 km with the average European car
- ⌚ 4000 km with a SUV 4X4

All greenhouse gases (GHG) such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), refrigerants (HFC's, PFC's, CFC's), sulfur hexafluoride (SF₆), water vapor (H₂O), ozone (O₃) ... are converted into CO₂ equivalent using the Intergovernmental Panel on Climate Change (IPCC) 100-years global warming potential (GWP) coefficients.

Gas	GWP 100 years time horizon
CO ₂	1
Methane (CH ₄)	25
Nitrous Oxide (N ₂ O)	298
Sulfur Hexafluoride (SF ₆)	22800

2. Carbon Footprint

2.1. Quick presentation of the EIB and EIF

The European Investment Bank was established in 1958 under the Treaty of Rome. The European Investment Bank is the European Union's financing institution, whose remit is to contribute towards the integration, balanced development and economic and social cohesion of the Member States. In particular financing is provided for regional development, Trans-European Networks of transport, telecommunications and energy, research, development and innovation, environmental improvement and protection, health and education. To that end, it raises substantial funds on the capital markets, which it channels, on the keenest terms, into the financing of projects that meet EU objectives. Outside the Union, the EIB implements the financial components of agreements concluded under the European development aid and cooperation policies.

The EIB and EIF have their head office buildings in Luxembourg (East & West Kirchberg, Hamm) next to each other on the Kirchberg Plateau in Luxembourg. The EIB has been based in Luxembourg since 1968 and moved onto the Kirchberg Plateau in 1980. The EIB and EIF employ 2079 people. The EIB also has small international subsidiary offices around the world which report to the head office.

2.2. Methodology

To carry out this carbon footprint report we used the emission conversion factors from the recognised Bilan Carbone® ADEME tool or from the WRI GHG Protocol, when no figures were available for emission factors we used data from the CO2logic database and research. The consultants at CO2logic are certified to use the Bilan Carbone® tool but other figures were used when considered more adapted to the specific situation. The Bilan Carbone emission factors are updated over time and the consultants follow these updates. For this new report the emission factors from Bilan Carbone V.6, launched mid 2009 were used which can explain certain variations from the factors used in the last report.

What is the Bilan Carbone® method?

Bilan Carbone® is a methodology developed by the ADEME (French government Agency for Environment and Energy Management) allowing a consistent approach to measure and quantify CO2 emissions. The Bilan Carbone® methodology is compliant with the ISO 14064 quality standard, the World Resources Institute and the World Business Council for Sustainable Development, GHG Protocol Initiative Standard as well as the EU ETS Directive n° 2003/87/CE.

The results given in this report are designed to give the EIB and EIF an accurate view of their carbon footprint. The results can be used to facilitate carbon reduction decision making. The time period which this carbon footprint report covers is 01/01/2010 to 31/12/2010.

The items quantified in this study are:

- ⌚ Internal consumption, heating and electricity production. (all scope 1 emissions GHG protocol, direct emissions)
- ⌚ Sourced electricity and heating (all scope 2 emissions GHG protocol, indirect emissions)
- ⌚ Employee commuting to and from work, employee business travel, paper consumption and disposal of waste generated. (certain scope 3 emissions, GHG protocol and radiative forcing, indirect emissions)

The EIB management has decided that the carbon footprint scope would be set as defined above. At this stage the emissions from the EIB headquarters East & West Kirchberg, Hamm, will be taken into account. The lease on the Findel building was terminated in March 2009 thus for no CO2 emissions related to this building are found in the 2010 report. The smaller international EIB offices are not taken into account in the scope of this report. Thus any conclusions made using a year on year comparison should consider this change in real estate occupation and usage. The 2010 and 2011 comparability should improve thus allowing for better identification of CO2 reduction activity results.

This report has taken into account the GHG Protocol Initiative Standards as well as the latest principles and indicators (G3) developed by the Global Reporting Initiative (GRI) to report on sustainability. Using the Global Reporting Initiative definition of Materiality it is considered that reporting on the EIB and EIF carbon footprint is of significant importance. This report has been written in a way so as to facilitate sustainability reporting in accordance with the latest principles and indicators (G3) developed by the Global Reporting Initiative. This includes the principles for ensuring report quality and guidance for boundary setting. Calculations were all based on figures provided by the EIB and the EIF who obtained them from their invoices. These figures were then sent to CO2logic. The accuracy of the results of the report relies on the exactitude of the figures provided by the EIB and EIF.

2.3. Carbon Balance

2.3.1. Global footprint for EIB and EIF

Within the emission boundary set, as explained above the results obtained show that the total carbon footprint of the EIB and EIF comes to 18,997 tonnes of Carbon Dioxide equivalent (tCO₂ eq) per year (compared to 19,653 tonnes of CO₂ in 2008 and 16,576 tonnes in 2009 an increase of 15% 2009-2010). However one needs to take into account the increase in 9% of employees to reach 2079 in 2010 from 1906 employees in 2009 at the EIB & EIF. Thus this implicates an overall average emission level of 9.1 tonnes of CO₂ per person per year at work within the scope set (an increase of CO₂ per capita of 5% from 2009).

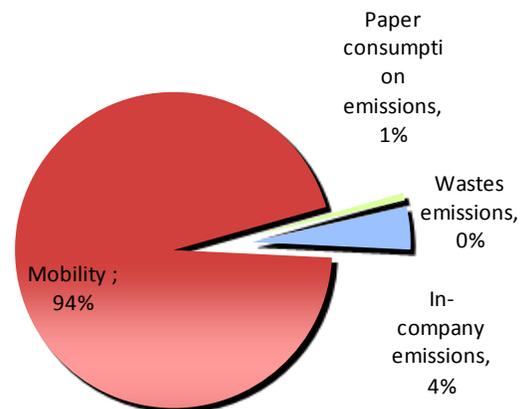
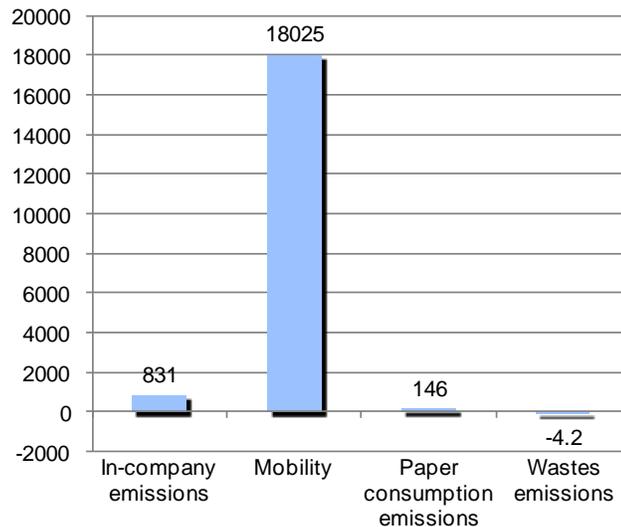
The CO₂ emissions coming from in-company emissions, which relate to heating, electricity and co-generation, account for 831 tonnes of CO₂ thus representing 4% of the total emissions (this is a decrease of 13% compared to the 954 tonnes of CO₂ in 2009).

The emissions coming from mobility i.e. the travel of employees due to transport, commuting and air travel account for 18,025 tonnes of CO₂ thus 95% of emissions (2523 tonnes of CO₂ (+16%) more than 2009 where 15,502 tonnes were emitted). It should be noted that a radiative forcing factor of X2 was used for air travel as according to the Bilan Carbone® methodology. This however differs from the GHG Protocol which does not take into account radiative forcing which would mean the airlight results would be halved.

The emissions related to paper consumption account for 146 tonnes of CO₂ thus 0.8 % of total emissions (increase of 20% compared to 120 tonnes in 2009).

The emissions from waste disposal account for -4.2 tonnes of CO₂ (compared to -0.19 in 2009). Some waste is used as an energy source to produce electricity and thus replaces the use of fossil fuels.

Global footprint (t CO₂ eq)



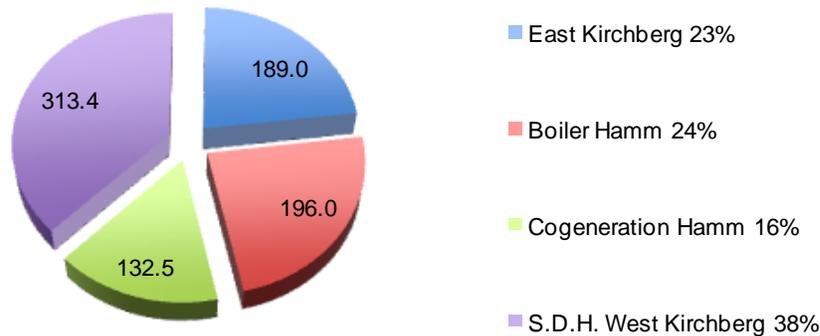
2.3.2. In-company emissions

The emissions related to this category are those related to internal production of heat and electricity as well as emissions from externally sourced electricity and heating. As green electricity was used no direct emissions are counted for the electricity production as according to the Bilan Carbone methodology.

In-company emissions count for 831 tonnes of CO₂ thus 4.4% of the total emissions (compared to 954 tonnes of CO₂ in 2009 thus a reduction of 13%).

This means 0,4 tonnes of CO₂ per employee for this emission category

EIB and EIF in company emissions (t CO₂ eq)



The following data was collected by the facilities management:

- ⌘ Steam heating West Kirchberg, 313.42 tonnes of CO₂ (Increase of (Steam 7,288,920 kwh purchased) (+8% CO₂ on 2009)
- ⌘ Steam heating East Kirchberg, 189.03 tonnes of CO₂ (Steam 4,396,090 kwh purchased) (-5% CO₂ on 2009)
- ⌘ Boiler Hamm, 196.3 tonnes of CO₂ (Gas 1,086,412 kwh purchased) (-23% CO₂ on 2009)
- ⌘ Co-generation Hamm, 132.5 tonnes of CO₂ (Gas 733,311kwh purchased) (-0.5% CO₂ on 2009)

The change of CO₂ consumption is mainly related to heating requirement due to the fact that CO₂ neutral green electricity is used and the Hamm co-generation unit only presents a portion of the heating activities. The Heating Degree Days (HDD) which allow us to compare the predicted energy consumption in function of the winter weather imply that the winter in Luxemburg was far colder +16% in 2010 compared to 2009¹ especially the month of January (+20%), may(+89%!

¹ See « degrés jours » for Luxemburg on the website « la chambre des métier »

and December (+25%). Thus the individual reduction of CO2 emission per building except for the small increase at West Kirchberg is a positive sign considering these colder conditions. The overall total in-house emission reduction figure of 13% can also be explained by the exclusion of the Findel building which was still partially used in 2009 and not in 2010.

It is strongly advised that further energy audit should be carried out for the remaining buildings. Quick wins can easily help reduce emissions often at no cost. All EIB purchased electricity is green electricity and the EIB is proprietor of the related green guarantees of origins. The electricity produced by the cogeneration system in the Hamm building is not used internally by the EIB as it is sold to the network and green electricity is bought instead. However the EIB profits directly from the sale of this electricity thus the gas consumption and therefore the CO2 emissions created by this cogeneration system are fully allocated to the EIB Hamm building CO2 emissions. Gas consumption was converted from PCS to PCI figures to ensure further accuracy of calculations. The EIB air-conditioning systems use ammonium so there is no global warming impact from leakage only the electricity usage which is already accounted for. The Kirchberg plateau has a positive particularity that all the buildings being heated can use the steam from the Kirchberg power plant. For steam heating purchased we were provided by the supplier with an emissions factor of 43g CO2 per Kwh². This was used for all steam purchased. Co-generation systems are very positive and minimise energy loss.

2.3.3. Mobility emissions

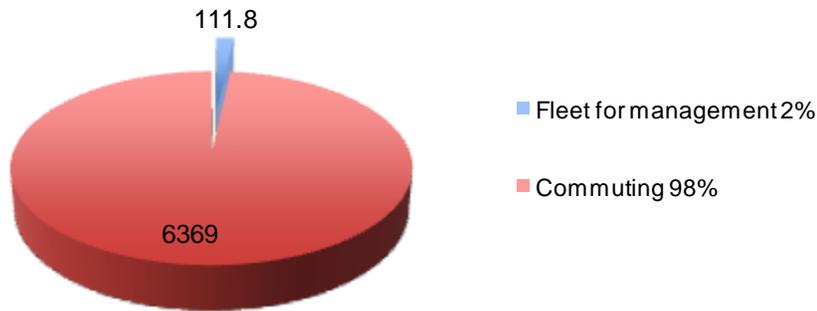
Mobility related CO2 emissions included emissions from commuting, company fleet cars, a shuttle service between the various buildings and CO2 emissions from travel by plane and train.

Mobility emissions represent 18,025 tonnes of CO2 thus 95% of the total emissions (compared to 15,502 tonnes of CO2 in 2009 thus an increase of 16%). This means 8.67 tonnes per employee for this emission category. Clearly this is an important element for which further reduction efforts need to be made.

In relation to transport by cars commuting represents 6369 tonnes of CO2 and the fleet of cars used by the management represent 111.8 tonnes of CO2

² 2007 figure provided by e-mail from Kirchberg plant management

Fleet and commuters EIB & EIF (t CO₂ eq)



For the EIB and EIF the following information was provided by the facilities management:

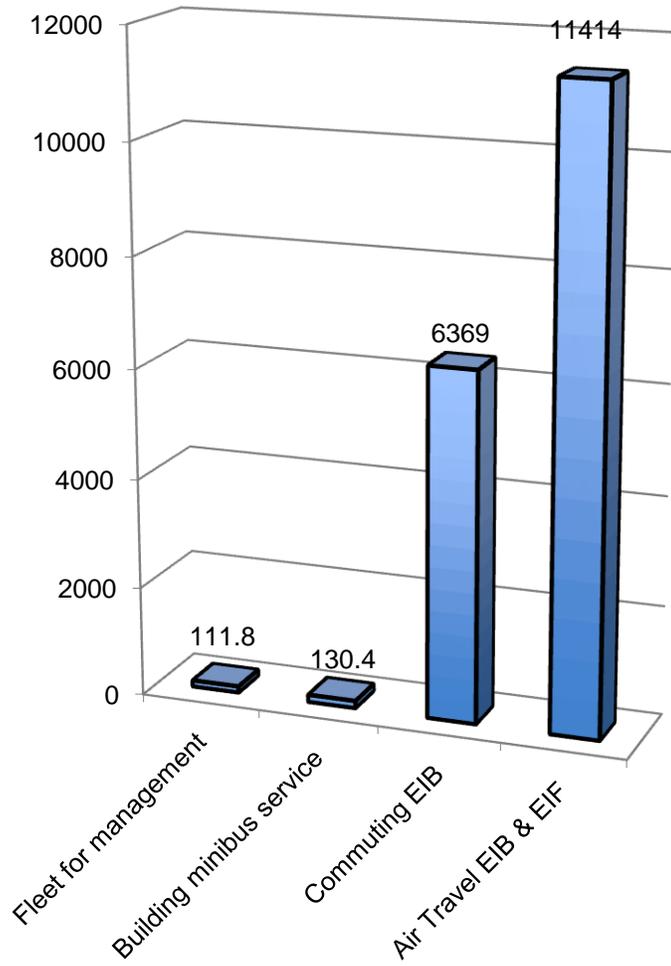
- ⌋ Owned management cars EIB & EIF 111.8 tonnes of CO₂. (+5% CO₂ on 2009)
- ⌋ Building minibus service, 130.4 tonnes of CO₂ (0% CO₂ change on 2009)
- ⌋ Commuting EIB & EIF, 6369 tonnes of CO₂ (19,571,300 km) (+44% CO₂ on 2009)
- ⌋ International Travel EIB & EIF,
 - For air travel 5707 tonnes of CO₂ without the radiative forcing and 11,413 tonnes of CO₂ with radiative forcing X2 Bilan Carbone® (plane: short haul 11237095 km, long haul first class 12,253,780 km) (+5% CO₂ on 2009)
 - For train travel 39 tonnes of CO₂ (984,972 km) (-5% CO₂ on 2009)

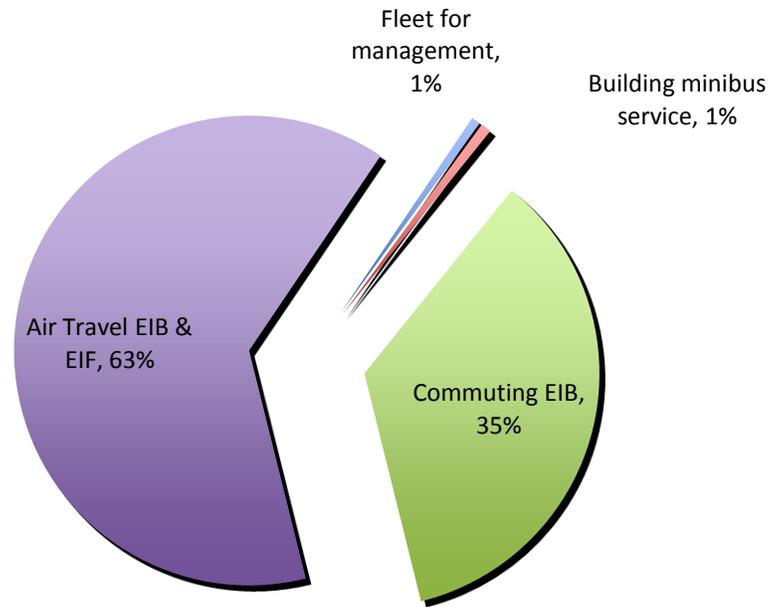
For flights Non Kyoto Gases were included with a radiative forcing factor of X2 in line with the Bilan Carbone® recommendation this is however in contradiction with the WRI GHG Protocol which does not include radiative forcing factor for aviation. For travel by plane we were informed that for short haul journeys economy class was used and for long haul journeys, business class was used. As the class affects the number of people in a plane and thus the emission factor per person this was taken into account in the calculations.

For the EIB commuting emission figure the average distance travelled of 35 km was applied based on the research carried out at the European Commission³ for its employees in Luxemburg. The number of EIB parking spaces was used as the commuter quantification value this figure has increased from 1499 spaces used in 2009 to 1532 spaces used in 2010 (+2%) . With the transfer out of the Findel building and the use of the new building parking spaces as well as an increase in the number of employees this figure has increased also meaning a net CO₂ increase. The increase in flight emissions also explains this significant overall increase in mobility CO₂ emissions.

³ Figure obtain by e-mail 2007

Transports (t CO2 eq)





For train travel the emission conversion figure applied per km was the Luxemburg train average. This figure is not far off the European average and thus is assumed a reasonable average to apply even if it is understood that many of the train journeys did end their journey abroad.

2.3.4. Paper consumption

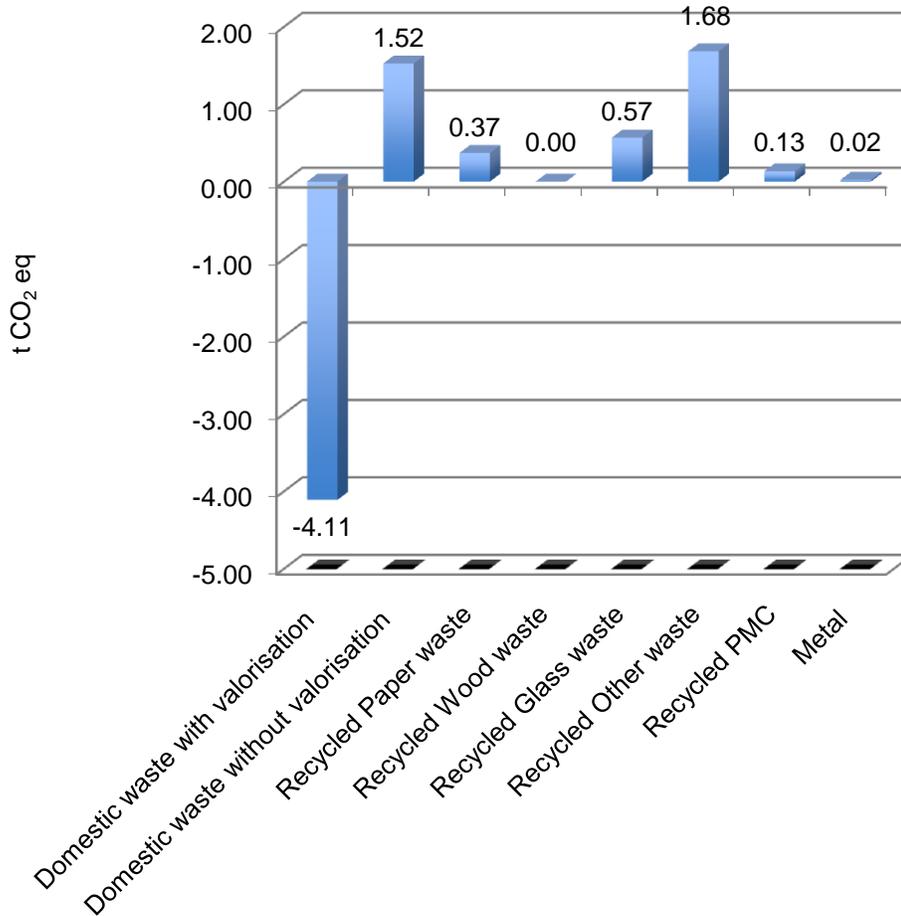
The paper consumed by the EIB and the EIF was also calculated so as to quantify the related CO₂ production impact.

Paper consumption of 110 tonnes which represent 146 tonnes of CO₂ thus 0.8% of the total emissions (compared to 120 tonnes of CO₂ in 2009 thus an increase of 22%)

2.3.5. Waste

The emissions from waste disposal account for -4.2 tonnes of CO₂ (compared to 0.19 tonnes of CO₂ in 2009)

EIB & EIF Waste emissions (t CO₂ eq)



The following data was collected by the facilities management:

- ⌘ Domestic waste with valorization caused -11.3 tonnes of CO₂ spared (223 tonnes of waste) (compared to 4.1 tonnes of CO₂ in 2009)
- ⌘ Domestic waste without valorisation caused 4.5 tonnes of CO₂ (95 tonnes of waste) (increase of 200% from 1.5 compared to 2009)
- ⌘ Recycled Paper waste caused 0.578 tonnes (31.5 tonnes of waste) (increase of 57% compared to 2009 0.3684 tonnes of CO₂)
- ⌘ Recycled Glass waste caused 0.723 tonnes of CO₂ (39.43 tonnes of waste) (increase of 27% compared to 2009 0.568 tonnes of CO₂)
- ⌘ Recycled other waste caused 1.167 tonnes of CO₂ (63.7 tonnes of waste) (decrease of 31% compared to 2009 1.681 tonnes of CO₂)
- ⌘ Recycled PMC caused 0.097 tonnes of CO₂ (5.3 tonnes of waste) (decrease of 27% compared to 2009 0.132 tonnes of CO₂)
- ⌘ Metal waste caused 0 tonnes of CO₂ (0.7 tonnes of waste) (decrease of 100% compared to 2009 0.023 tonnes of CO₂)

Domestic waste with valorization causes a positive emissions contribution as the waste is used to make electricity which would normally have been produced from a non renewable fossil fuel source. In general the disposal of waste at the EIB through recycling and valorisation allows this emission category to be relatively low.

3. Carbon Tax / Carbon Offsetting

As carbon restrictions, taxes and regulations are being rolled out across Europe and even in the US, companies that take into account and anticipate any legislation by putting a price on their carbon emissions will see a growing competitive advantage over those businesses that delay taking this decision till later. A companies carbon footprint is equal to a company's overall internal and external consumption of fossil fuels. By reducing this emissions figure a company will also be directly reducing it's exposure to any fluctuation in fossil fuel price. This could help make some very significant savings.

Assuming the following factors the cost for the EIB and the EIF would be :

If a carbon tax or offset (CER from Kyoto Clean Development Mechanism) was set at the rate of 14 Euro the cost would be **265,958 Euro**

If a carbon tax or offset was set at the rate of the Stern Review estimated CO2 social cost of approx 60 Euro the cost would be **1,139,820 Euro**

There are three steps to reaching the «CO2 Neutral» status. The first involves measuring and calculating ones carbon footprint as has been done in this report. The next step involves looking at ways of acting on these results and identifying reductions which can be made internally. The last step involves offsetting one's residual emissions. By offsetting one's emissions a company is internalising its external costs. This will help the executive management consider the otherwise often neglected environmental impact cost of their pollution and encourage them to reduce this cost and thus their carbon emissions. Considering the conclusions made by Sir Nicholas Stern that say spending 1% of world GDP to avoid a cost of 20% after 2050 it seems clear that offsetting is an interesting way to take immediate action and to reduce ones global warming impact whilst the low carbon technologies arrive to the market.

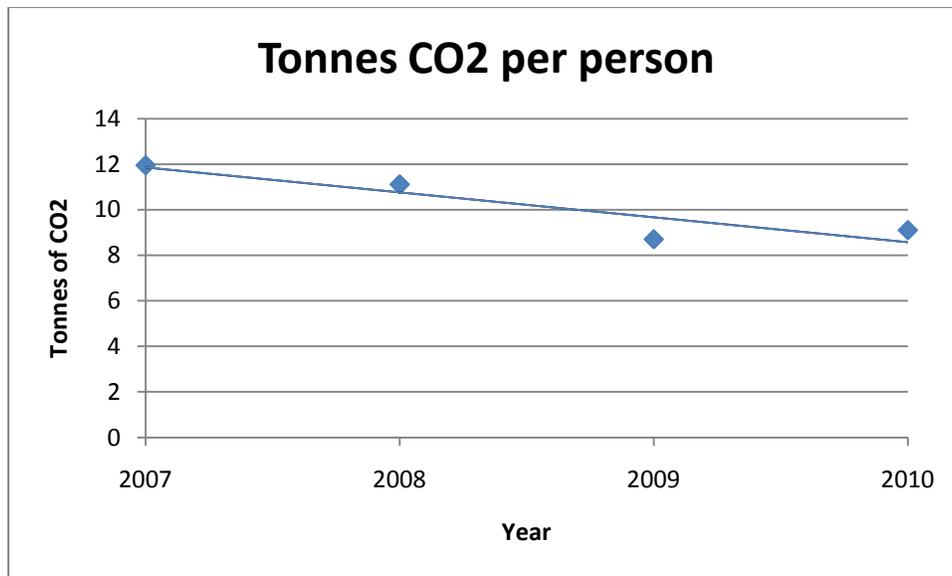
4. Conclusion

In 2010 the CO2 emission variation of +15% can mainly be attributed to mobility. In real terms per employee the CO2 emission variation is only an increase of 5%. In-house emission decrease by 13% from 2009 to 2010 which is a positive considering the harsh winter but one needs to take into account the removal of the Findel building as well which does not make our results directly comparable.

A significant increase is from mobility CO2 emissions due to commuting and air flights. Air flights can certainly be justified by the increase in activity of the EIB in 2010 a very active year. For

commuting emissions this is due to an increase in the parking spaces coupled with the increase in employees which increased the number of commuters. The EIB, just as every all other institutions and enterprise need to make significant efforts to encourage their employers to use public transport, car sharing and bikes and to set up the necessary infrastructure to support this.

The EIB has been calculating their footprint for the last four years. Setting up such a data collection activity is a large task and complex due to the size of the EIB and the dispersion of the data. Encouraging the different department's representatives to collect the data and provide this data within the dead line is not always easy. Ensuring that the data is collected and received in the correct format is also complicated. Finally there have been a large modifications in building and office space usage over the last four years, with empty buildings, renovations and relocations etc this has also meant large changes in CO2 emissions and made the data more complex to collect and compare. Lessons have been learnt from these challenges and the system has improved over time so as to provide more year on year comparable figures. The below graph sums up the CO2 footprint per capita of the EIB over the last four years taking into consideration the points mentioned above. In the coming year an EMS system will be set up this should also help contribute to ensure a better management of the EIB Carbon impact and ensure the data collection is carried out in consistent manner.



5. Environmental indicators 2010

	Tonnes of CO ₂ 2010	Tonnes of CO ₂ per staff member 2010	Tonnes of CO ₂ per staff member 2009	Tonnes of CO ₂ per staff member 2008	Tonnes of CO ₂ per staff member 2007
Energy emissions	831	0.4	0.50	0.68	0.8
Mobility emissions	18025	8.67	8.13	10.3	11
Waste disposed of	-4.2	-0.002	0.0001	-0.0007	0.0002
Copying paper consumption	146	0.1	0.06	0.13	0.13
TOTAL	18997	9.1	8.7	11.11	11.9

	m ³ 2010	m ³ per staff member 2010	m ³ per staff member 2009	m ³ per staff member 2008	m ³ per staff member 2007
Total water consumption (EIB only)	61478	29.57	40.89	37.34	41

	kWh 2010	kWh per staff member 2010	kWh per staff member 2009	kWh per staff member 2008	kWh per staff member 2007
Total electricity consumption (with green certificates)	18,174,398 	8742.9	9878.6	10 679.5	10 205.3

	Tonnes 2010	Tonnes per staff member 2010	Tonnes per staff member 2009	Tonnes per staff member 2008	Tonnes per staff member 2007
Total paper consumption	110	0.05	0.05	0.07	0.07

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Key terms

Carbon Dioxide equivalent (CO₂). An internationally accepted measure that, by means of agreed conversion factors, expresses the global warming capacity of different greenhouse gases in terms of the amount of carbon dioxide that would have the same global warming potential (GWP).

Certified Emissions Reduction (CER). A carbon reduction credit for one tonne of CO₂ as certified by the UNFCCC under the United Nations' Clean Development Mechanism (CDM).

DEFRA (Department for Environment, Food and Rural affairs).

European Union Emissions Trading Scheme (EU ETS). The world's largest multi-country, multi-sector, greenhouse gas emission trading scheme. The scheme, in which all 25 member states of the European Union participate, started operations on 1 January 2005.

Gold Standard (GS) Voluntary offset verification standard

Greenhouse gas (GHG). Any gas, such as carbon dioxide (CO₂), methane (CH₄) or water vapour (H₂O) that gives rise to a greenhouse global warming impact.

Intergenerational equity. The issue of the fairness of the distribution of the costs and benefits that are borne by different generations. In the case of climate change policy, for example, action or inaction today has impacts not only on the present, but also on future, generations.

Intergovernmental Panel on Climate Change (IPCC). The IPCC was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP). The role of the IPCC is to "... assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation."

Kyoto Protocol. An international agreement adopted in December 1997 in Kyoto (Japan). The Protocol sets binding emission targets for developed countries that would reduce their emissions on average by 5.2% below 1990 levels.

Radiative forcing. In climate science, defined as the difference between the incoming radiation energy and the outgoing radiation energy in a given climate system. A positive forcing (more incoming energy) tends to warm the system, while a negative forcing (more outgoing energy) tends to cool it. Possible sources of radiative forcing are changes in insulation (incident solar radiation), or the effects of variations in the amount of radiatively active GHG gases present.

Social cost of carbon. The damage value of an additional tonne of carbon emissions.

United Nations Framework Convention on Climate Change (UNFCCC). A treaty, signed at the 1992 Earth Summit in Rio de Janeiro, which calls for the "stabilization of greenhouse gas

concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference

Verified Emissions Reductions (VER) Offsets that are used in the voluntary market and which are verified by a third party.