
# CARBON FOOTPRINT 2011

**Vieira de Almeida & Associados**

VIEIRA DE ALMEIDA & Associados Sociedade de Advogados, RL

CONTENTS

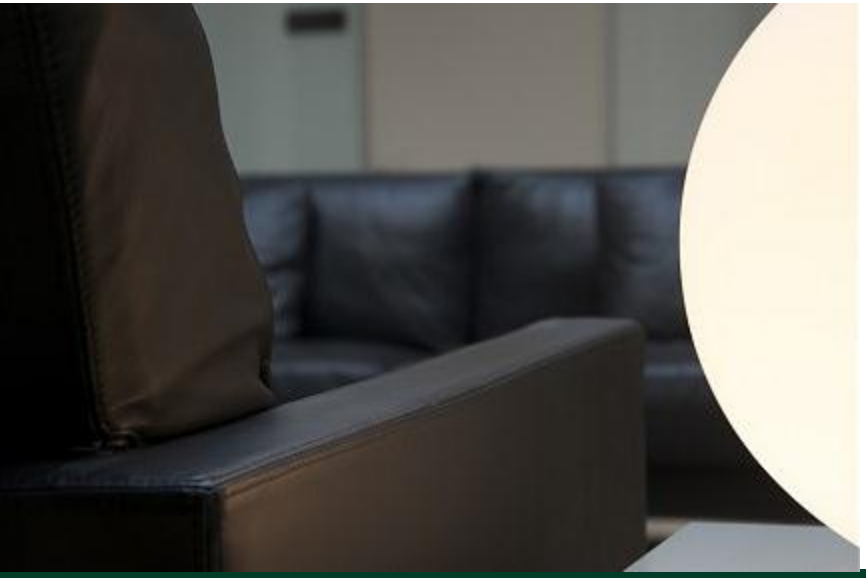
## Index



## About this report

This report presents Vieira de Almeida & Associados (VdA)'s carbon footprint in 2011.

Calculations followed The Legal Sector Alliance Carbon Footprint Protocol, adapted to the Portuguese reality. This is VdA's first calculation.



# ABOUT VdA AND ITS GREEN PROJECT

## VdA's profile

VdA is one of the major law firms in Portugal, providing legal advice in 17 areas of practice for over 35 years, with offices in the Portuguese towns of Lisbon, Oporto and Funchal, and a team of 228 members (162 lawyers and 66 members as support staff).

VdA also advises abroad, through VdAtlas, the firm's international platform through which VdA keeps professional partnerships with local partners, with a special focus in the Portuguese-speaking markets, namely Angola, Brazil and Mozambique.


| Office | Workers | | Total |
|---|---|---|---|
| | Lawyers | Support staff | |
| Lisbon | 151 | 63 | 214 |
| Oporto | 9 | 2 | 11 |
| Funchal | 2 | 1 | 13 |
| Total | 162 | 66 | 228 |

**Fig. 1** – VdA: advising in Portugal and international partnerships

## The Green Project

VdA is the first Portuguese law firm to have established a formal CSR and Pro Bono programme, managed by a Pro Bono committee which sets an annual plan of action and monitors its execution. The programme focuses on two axes of intervention: environmental responsibility and social responsibility. Activities under the scope of environmental responsibility are taken forth through the Green Project (Projeto Verde), an internal programme which focuses on sustainable development and eco-efficiency and aims to minimize the firm's activity's environmental impact by optimizing resources consumption, namely energy and materials.

Assessing a carbon footprint, i.e. greenhouse gas emissions associated to a firm's activity, and how to reduce it, proves to be one of the main indicators on eco-efficiency for a firm due to the range of aspects it analyses.


**Fig. 2** – VdA's *Pro Bono* and Corporate Social resonsibility programme

In 2011 VdA became one of the 249 members of the *Legal Sector Alliance* (LSA), an international organization made up of law firms commited to fighting climate change by adopting sustainable practices and reducing their carbon footprints.


# VdA's CARBON FOOTPRINT 2011

## VdA'S CARBON FOOTPRINT

VdA's professional daily activity is responsible for the direct and indirect emission of greenhouse gases (GHG or carbon) the most important of which is carbon dioxide ($CO_2$).

GHG emissions result majorly from energy consumption either at the firm's premises or in business travel. Although less relevant in quantitative terms, there are also other emissions with a higher greenhouse effect than $CO_2$. These are methane ($CH_4$), and fluorinated gases.

The carbon footprint is the result of the overall measuring of these emissions according to established international calculating methods.

GHG emissions resulting from human activity is aknowledged as the main source of climate change at present. Its assessment and reduction in all sectors of activity is therefore a main tool in fighting the problem.

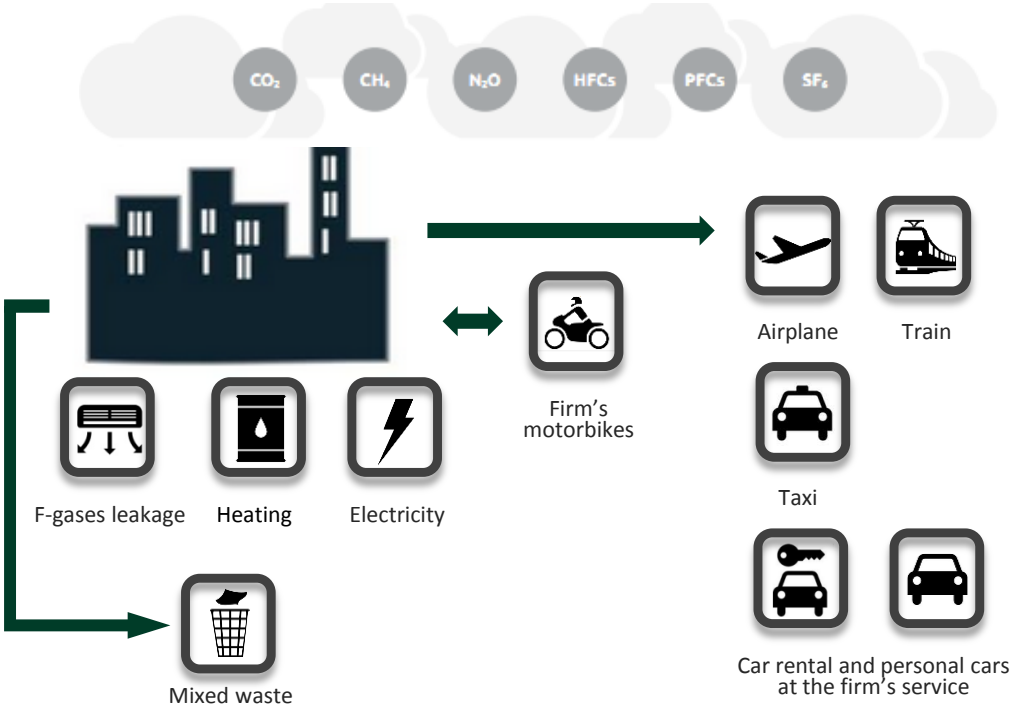



**Fig. 3** – VdA's carbon footprint: activities and emissions sources

### Direct emissions

Direct emissions are emissions ocurring from sources owned or controlled by VdA.

Such is the case of diesel combustion in the firm's premises' heating boilers, of gas leakage from air conditioning and refrigerators equipment, or petrol consumption by the firm's motorbikes.

### Indirect emissions

Indirect emissions are also emissions ocurring from VdA's activity, but from indirect sources.

Such is the case of electricity consumption at the offices (whose GHG emissions occur at the power plants), of aviation or any other transports' fuels consumption regarding business travelling (except for the firm's motorbikes), or non recycled waste landfills, which generate methane emissions.

## VdA's carbon footprint 2011: results

In 2011, VdA's carbon footprint was 697 t $CO_2$e (tons of carbon dioxide equivalent), which corresponds to 3,06 t $CO_2$e per worker.

| | 2011 |
|---|---|
| Number of employees | 228 |
| Office's total area (m2) | 5.871 |
| Total emissions (t CO2 e) | 697 |
| Emissions by employee (t CO2/employee) | 3,06 |

**Tab. 1 –** VdA's carbon footprint in 2011: global results

When we divide emissions by source we find out the high relevance of electricity consumption in all three offices (68%) and of business travel (23%) to the footprint's total sum.

| | 2011 Emissions (t CO2e) |
|---|---|
| **Scope 1** | **49** |
| Combustion at premises (heating) | 43 |
| Firm's own vehicles (motorbikes) | 6 |
| F-gases usage | n.d. |
| **Scope 2** | **472** |
| Electricity | 472 |
| **Scope 3** | **176** |
| Busienss travelling | 140 |
| Air | 1 |
| Train | 5 |
| Taxi | 5 |
| Rent-a-car | 5 |
| Own vehicles used in business travelling | 13 |
| Waste treatment | 12 |
| **TOTAL** | **697** |

**Tab. 2 –** VdA's carbon footprint in 2011: results divided by source of emission

Travelling by airplane is the largest cause for business travel emissions (86%). Work related travelling with the firm's vehicles is the second largest cause for emissions in this category (8%).

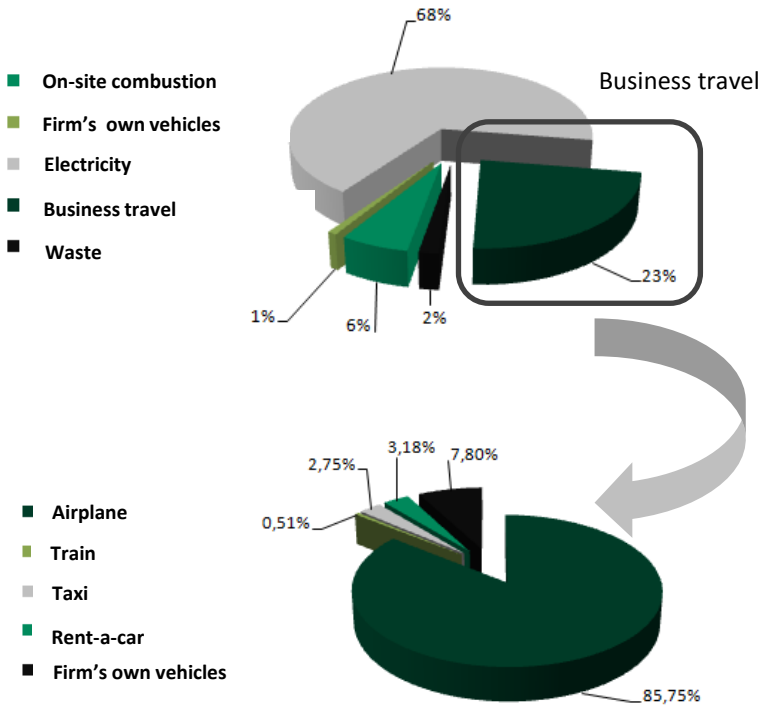



**Fig. 4 –** VdA's carbon footprint in 2011: relative weight of each source of emission.

VdA's total emissions in 2011 are equivalent to 100 world tours by car.

Emissions by worker correspond to 10 airplane return trips between Lisbon and London, or to the energy consumption of 40 (efficient) refrigerators throughout one year.

## VdA's carbon footprint in 2011 broken down by office

The major percentage of VdA's carbon footprint is, as expected, related to the Lisbon's office activity (97,6%). Oporto's office stands for 2,2% of the footprint and Funchal's office for only 0,2% of the total carbon footprint.

Although 94% of VdA's workers are located in the Lisbon's office, its emissions are slightly overrated as, in the absence of separated data, all travelling by air, train or taxi have been attributed to it.

This simplification is likely to be responsible for the different ratios regarding emissions per worker: data regarding the Oporto (1,42) and Funchal (0,53) offices are clearly underrated as a significant part of business travel emissions (by air, train or taxi) are attributed to the Lisbon's office.

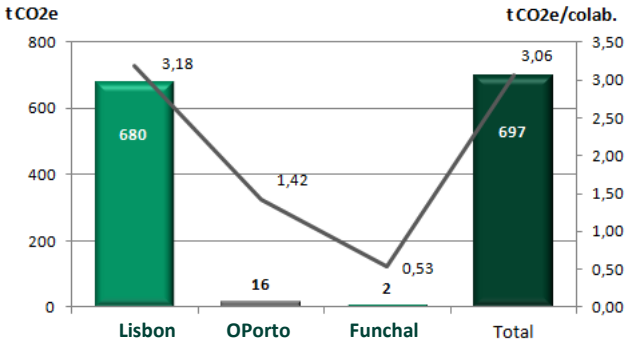
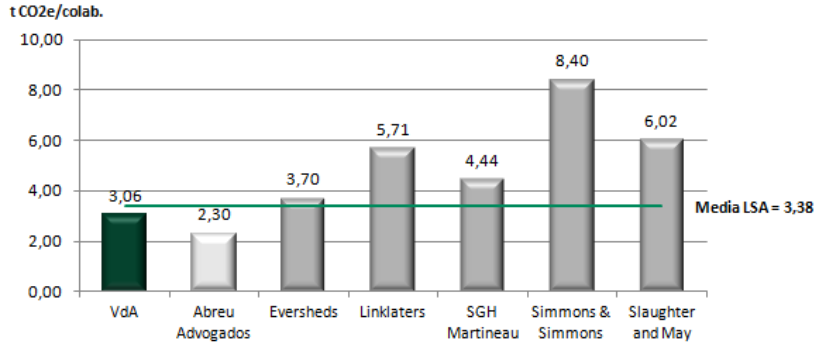



**Fig. 5 –** VdA's carbon footprint in 2011: breakdown by office.

## Benchmarking analysis

VdA's emissions per worker in 2011 are lower than the average values reported by the Legal Sector Alliance's members for the same period of time (3,38 t $CO_2$e/worker). When compared with their international peer firms, data obtained confirms VdA's good performance.

For information purposes, Fig. 6 presents the data on emissions per worker concerning the only other Portuguese firm publishing this kind of information (Abreu Advogados, Sustainability Report 2009-2010). However such a result is not directly comparable to that of VdA as the scope of emissions' accounting differs between the two and the former refers to 2010 with a direct influence on what regards electricity emission values.




*Sources: LSA Annual Report 2012; Abreu Advogados Sustainability Report 2009-2010.*

**Fig. 6** VdA's carbon footprint 2011: peer comparison.

As regards sources breakdown, VdA's results are in line with the sector: electricity consumption represents the major slice of emissions, followed by air travel. Data reported by LSA (referring mainly to firms in the UK) differ only on the weight given to on-site combustion, justified by accrued heating needs.


# ADDITIONAL INFORMATION

## Sources of electricity consumed

Electricity sources, and therefore its carbon content, depend on the supplier and vary according to the way each one produces and/or acquires the electricity provided to the final client. In Portugal, electricity sources are higly dependent on the hydrologic conditions, which determine the amount of energy produced in hydropower plants.

In 2011, almost one third (33%) of the overall electricity consumed at VdA's offices came from renewable sources.

The firm's main supplier is Iberdrola, who supplied 84,2% of the total electricity consumed, followed by EDP Serviço Universal (who supplied 15,6% - regarding only Lisbon's office until February) and Eletricidade da Madeira (0,2% - referring only to Funchal's office).

VdA's carbon footprint in 2011 has therefore been influenced by the change in electricity supplier, as Iberdrola's $CO_2$ emission per kWh was 50% higher than that of EDP Serviço Universal.

In its website (www.erse.pt), the Regulator for Energy Services (Entidade Reguladora dos Serviços Energéticos - ERSE) provides access to up to date information on electricity sources and emissions concerning each supplier in the Portuguese market.

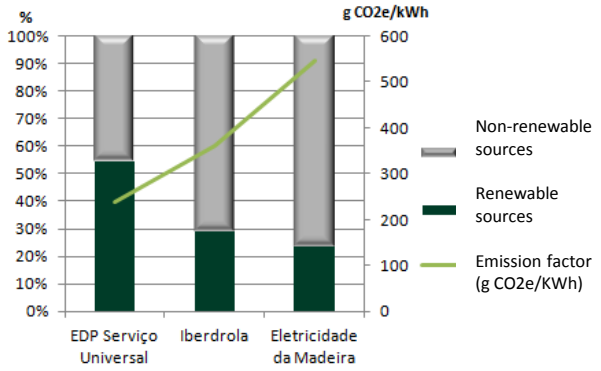



**Fig. 7** – VdA's electricity source and carbon content in 2011.

## Business travelling

By analysing the data collected it was possible to determine a set of indicators regarding business travel at the firm.

The significant increase in air travelling is connected to the rise in the firm's international activity, in the scope of VdAtlas, and will most probably continue to increase in the future.

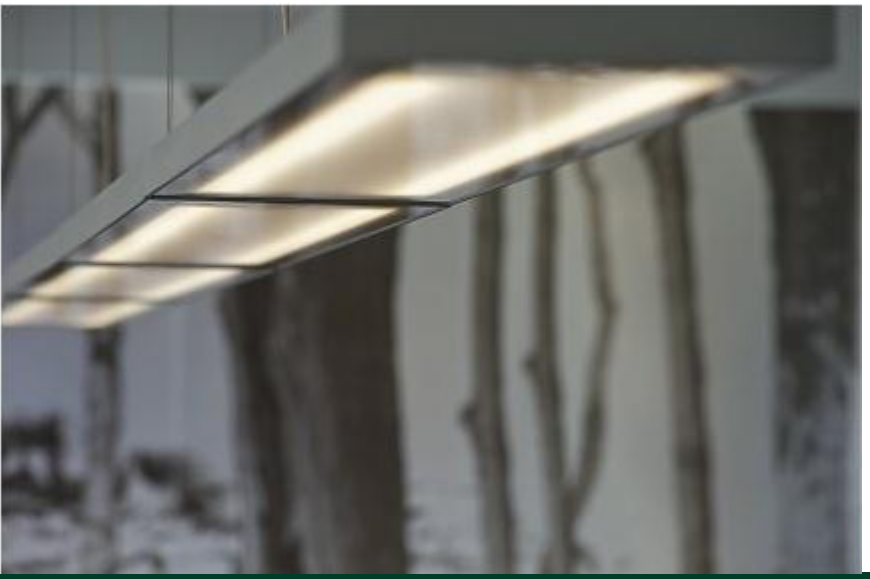
| | Nr trips | Average trip Distance (km) | Cost (€) |
|---|---|---|---|
| Airplane | 213 | 6.376 | n.d. |
| Short distance | 5 | 600 | n.d. |
| Medium distance | 161 | 3.561 | n.d. |
| Long distance | 47 | 16.634 | n.d. |
| Train | 77 | 449 | 90 |
| Taxi | 1.177 | 22 | 19 |
| Rent-a-car | 74 | 389 | 56 |
| Own vehicles in b. travelling | 252 | 280 | 56 |

**Tab. 3** – Business travel at VdA in 2011: main indicators.

## Carbon offsetting

VdA has established a protocol with Mafra's National Park (Tapada Nacional de Mafra) in the scope of which 500 pinetrees are planted on an annual basis in a 2 ha area.

This initiative's estimated capacity for carbon capture is of 60 t of $CO_2$.



# OPPORTUNITIES FOR IMPROVEMENT

## Reducing emissions

Although there should be a careful analysis of measures to be adopted in order to reduce emissions, results collected regarding 2011 allow to conclude the following:

- VdA's emissions indicator (t CO2e/worker) shows the firm's performance is positive, indeed at a higher level of efficiency than the average for its sector;
- According to the percentage of the total they stand for, the most significant areas for intervention in order to reduce the firm's carbon footprint are electricity consumption (68%) and business travel (23%)

It should be noted that, in what regards the firm's Lisbon office, electricity consumption directly connected to VdA's floors accounts only for 35% of the total consumption whereas 65% account for common areas, including centralized air conditioning. Therefore the individual worker's capacity for intervention is limited. It should be possible to articulate with the building's condominium managing body in order to assess the possibility of optimizing air conditioning functioning (reducing the temperature in 1ºC means a 7% rise in consumption).

One should also take into account the impact the choice of an electricity supplier has on the kWh carbon content; the more renewable energy sources a supplier uses, the lesser emissions it produces.

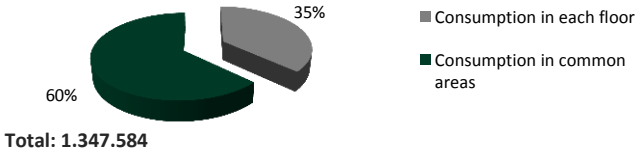



**Fig. 8** – Electricity consumption breakdown at VdA's Lisbon office in 2011.

In what regards work business travel, a detailed analysis of the data collected and presented in the former section will enable to consider the possibility of substituting certain meetings by teleconferences or videoconferences.

## Calculating VdA's carbon footprint

On calculating VdA's carbon footprint we took into account all of the main sources of carbon emission and followed up all of the information requisites as established by the *LSA Carbon Footprint Protocol*. Therefore the results obtained may be considered as truly representative of the firm's activity during the period at stake.

However, we identified the following areas for possible improvement when collecting operational data:

- To request to the managing board of the Oporto's office building data on the electricity consumption at common areas (in kWh) and on the building's fuel consumption (in lts/m3 of fuel);
- To obtain data on the use of refrigerating gases in air conditioning equipment, refrigerating devices (fridges), and fire extinguishing devices. To obtain information on the type of gas and on the amounts refilled in each year;
- To breakdown by office all business travel data (either by air, train or taxi);
- To obtain real information on waste production in each office (number of waste bags and approximate weight of each waste bag).

When aiming at expanding the emissions' accounting in the future we might consider workers' commuting (house-work travelling), in line with the LSA's indications on the subject.

# ATTACHMENTS

## Accounting methodology

VdA's carbon footprint was calculated according to The Legal Sector Alliance Carbon Footprint Protocol's guidelines.

This protocol adapts the guidelines defined by The Greenhouse Gas Protocol to the legal sector and is the international methodological reference to calculate carbon emissions in this sector.

## Emissions scope

VdA's carbon emissions accounting only considered the firm's activity in Portugal (at Lisbon, Oporto and Funchal's offices). No activities or premises existing under the scope of VdAtlas international platform were considered, as both, the former and the latter, are under the responsibility of the local partners.

All direct (scope 1) and indirect (scope 2 and scope 3) sources of emissions indicated by the LSA Carbon Footprint Protocol have been accounted.

In scope 3 we further added emissions coming from mixed waste disposal, as the LSA stresses the importance of including this source of emission when calculating the carbon footprint and reference data for Portugal is available.

Also in line with the LSA Carbon Footprint Protocol's recommendations, we did not take into account emissions coming from any products or services produced or taken forth by third parties (except for travelling services), as these emissions are considered to be under the responsibility of the respective sectors of activity. All indicators regarding such items, namely water, paper and other consumable goods at the office should be monitored under the scope of the Green Project but should not be directly included in the calculation of the carbon footprint, in order to allow comparative studies between the results disclosed by LSA.

## Calculation parameters

The calculation considered all of the six greenhouse gases covered by the Kyoto Protocol and the results are presented in the $CO_2$ equivalent, making use of the Global Warming Potential (GWP) values published by the Intergovernmental Panel on Climate Change (IPCC - Second Assessment Report).

Emissions have been quantified on the basis of representative data on VdA's activity in 2011 (please refer to the following section), to which the emission factors as defined by the IPCC's were added, although having been adapted to the Portuguese reality according to data published by the national official entities.

The following criteria were applied:

- **Electricity** – annual emission factors, regarding 2011, as published by ERSE (Regulator for Energy Services) for each supplier applied to the amount of energy supplied;
- **Air travelling** – differentiated emission factors per passenger.km for each type of journey (short, medium and long haul). In line with LSA Protocol's guidelines, Radiative Forcing Index (RFI) was not applied.
- **Train travelling** – emission factor representing passengers travelling by electricity driven trains, depending on the type of train used (Alfa Pendular and Inter Cidades);
- **Rent a car and own car travelling** – emission factor representing the average light passenger vehicle (petrol or diesel) on the road in Portugal;
- **Waste treatment** – emission factor reflecting emissions ocurring along the total period for waste degradation in a landfill (30 years). Emissions regarding recycling and energy recovery are considered void, as they are alocated to the respective sector of activity and not to the waste treatment sector.

## Data collection: proceedures and assumptions

Data regarding VdA's activity in 2011 has been obtained in the following manner:

- **On-site fuel consumption –** This is calculated from the costs charged by the condominium on the basis of the occupied area and on the average annual price of diesel for heating in 2011 (source: Directorate General for Energy and Geology).

- **Fuel consumption by the firm's vehicles –** This is calculated from the accounting system register (budget line 62517) and from the average annual price of fuel in 2011 (source: Directorate General for Energy and Geology).

  Only fuel consumption by the firm's motorbikes was considered (deliveries). No fuel supply for any of the partners' vehicles was taken into account.

- **Electricity consumption at the firm's premises –** Data obtained from the electricity bills issued by the condominium (Lisbon and Oporto offices) and invoices issued by the electricity supplier (Funchal office).

  In the Lisbon office's premises, consumption by floor is included, as invoices are issued on monthly readings of individual meetering systems. Consumption in common areas is also included (lounges, lifts and cold air system) as invoices issued by the condominium take into account the area in use by the firm.

- **Air travelling –** Travelling register. Distances calculated on the point of origin-point of destination pair approach, accrued of the adjustment factor (non direct routes and waiting for landing).

- **Train travelling –** Calculated from the accounting system register (budget line 62513), identifying the point of origin–point of destination pairs by way of identifying the usual cost of train trips between the main train stations (Lisbon, Oporto, Coimbra, Faro and Aveiro).

- **Travelling by taxi -** Calculated from the accounting system register (budget line 62513) and on the average price of travelling by taxi per km, considering taxi pricing in 2011 regarding travelling in a light passenger four-seater car during the day in the city, with no supplement charges. (source: Directorate General for Economic Activities and Antral).

- **Rent-a-car travelling –** Obtained from the accounting system register (budget line 6261201) and from the km registered at the service's provider invoices. No fuel supply was taken into account in order to avoid double accounting.

- **Business travel in own car –** Calculated from the accounting system register (budget line 62515) and the fixed value payable per km. No fuel supply was taken into account in order to avoid double accounting

- **Waste production –** Calculation based on the average number of waste bags per day and their respective weight, assuming the waste production is stable along the year (252 work days).

## Data collection limitations

It was not possible to collect data on the following subjects regarding the year 2011:

- Energy consumption (fuel and electricity) in common areas at the Oporto office;
- F-gases use in air-conditioning and refrigerating equipments;
- Breakdown by office of air, train and taxi travelling;
- Waste production in Oporto and Funchal's offices.

## Operational data used to calculate VdA's carbon footprint for 2011

| | | | 2011 | | |
|---|---|---|---|---|---|
| **Scope 1** | Unit | Lisbon | Oporto | Funchal | TOTAL |
| Fuel consumption at the premises | 1 | 15.624 | | | 15.624 |
| Heating fuel | 1 | 15.624 | | | |
| Fuel consumption by the firm's vehicles | 1 | 2.393 | | | |
| Petrol - motorbikes | 1 | 2.393 | | | |
| F-gases usage in the premises equipment | Kg | | | | |
| F-gases leakage | Kg | N.A. | N.A. | N.A. | N.A. |
| **Scope 2** | | | | | |
| Energy consumption at the premises | kWh | 1.347.584 | 27.132 | 2.421 | 1.377.137 |
| Electricity | kWh | 1.347.584 | 27.132 | 2.421 | 1.377.137 |
| **Scope 3** | | | | | |
| Work related travelling in third parties vehicles | | | | | |
| Airplane | Pkm | 1.358.044 | | | 1.358.044 |
| Short distance | Pkm | 2.998 | | | 2.998 |
| Medium distance | Pkm | 573.255 | | | 573.255 |
| Long distance | Pkm | 781.792 | | | 781.792 |
| Train | Pkm | 34.545 | | | 34.545 |
| Taxi | Vkm | 25.455 | | | 25.455 |
| Rented vehicles | Vkm | 10.646 | 18.112 | 0 | 28.758 |
| Work related travelling in own car | Vkm | 59.647 | 10.366 | 519 | 70.532 |
| Waste production at the premises | | 32,6 | 1,7 | 0,5 | 35 |
| Recycling | T | 17,6 | 0,9 | 0,2 | 19 |
| Mixed waste | T | 15,0 | 0,8 | 0,2 | 16 |
| | | | | | |

**Notes:**
Fuel consumption at the firm's premises does not include the Oporto office.
Fuel consumption by the firm's vehicles does not include the partners' vehicles.
F-gases leakage: data not available.
Electricity: Total consumption (floors + common areas). Does not include Oporto's office's common areas.
Air, train and taxi: no breakdown by office was possible. Total travelling attributed to the Lisbon office.
Waste: Estimated annual production . Oporto and Funchal's data were estimated according to the ratios calculated for the Lisbon office

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