

# Carbon Footprint Report



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## **1. INTRODUCTION**

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This report details the global carbon footprint of Ferrovial companies, including scopes 1,2&3 greenhouse gas (GHG) emissions for 2011 (from 1 January 1 until 31 December, 2011).

Ferrovial employs a certified calculation procedure in accordance with regulation 14064-1.

GHG emissions for 2011, as presented at chapter 5 of the present report - "Carbon Footprint, Inventory of GHG emissions" - have been verified by PwC under limited assurance, in compliance with ISAE 3000 (International Standards on Assurance Engagements, ISAE 3000 "Assurance Engagements other Audits or Reviews of Historical Financial Information". ISO 14064-3 requirements were also taken in to account in executing the review.

In line with company strategy, Ferrovial has carried out projects to identify climate changerelated business opportunities for the company; and others to facilitate an exhaustive analysis of the whole company in terms of identification of emission sources, improvements to the efficiency of processes, and goal-setting to reduce emissions - over and above targets which already exist. The aforementioned study was conducted as part of the "Reduction objectives for 2009-2020" project.

All of these objectives have been integrated into a common, company-wide reduction target, in relative terms, for the period 2009-2020.

#### REDUCTION TARGET (SCOPES 1&2) 21.3%

Achievement of this target is linked to the implementation of actions to lower emissions in the businesses. The main streams of action in general terms for all business divisions are based on :

- Vehicle fleets and machinery Initiatives include improving the energy efficiency of these assets by means of improvements to criteria for procurement, renting or leasing, efficient driving courses, the use of alternative fuels and vehicles with hybrid engines.
- Company mobility plans.

In 2008, with the aim of reducing its carbon footprint and paving the way for more sustainable mobility guidelines, Ferrovial initiated its Mobility Plan to improve the efficiency of modes of personal transport for employees, suppliers or customers, and users. The project is being developed steadily, within the framework of the group's Climate Strategy.

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Some action areas:

- Optimization of workplace access using private transport
- Optimization of company trips, via the use of information technologies (video-conferences...).
- Optimization of vehicle fleets

The Comunidad de Madrid recently awarded us its Sustainable Mobility prize.

- Energy efficiency in buildings.
   Incorporation of proactive energy efficiency measures in buildings used by the corporate headquarters.
- Green procurement
- Sourcing of renewable electricity suppliers reduces the CO2/kwh emission factor, with a consequent reduction in the carbon footprint for an intensity of equivalent use.

As a result of the implementation of these measures, there has been a reduction in emissions in regard to the 2009 base year.

Ferrovial's strategy is linked to the creation and development of new climate-change-related businesses, including:

- Smart Cities.
- Smart Forests.
- Building rehabilitation
- Energy service companies.

Together, these action streams ensure our company is at the forefront of the leading sustainability indices.

## 2. COMPANY DESCRIPTION

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Founded in 1952, Ferrovial is one of the top global infrastructures groups, with its businesses structured into airports, highways, construction and services divisions. It operates in over 15 countries.



The hallmarks of Ferrovial's identity are innovation, the environment, and a commitment to society, and the company harnesses these values to construct, create, and manage infrastructures, providing services to large communities. They are key in setting a pathway to improve quality of life and ensure progress for people.

The company, part of the IBEX-35 on the Madrid stock exchange, participates in the prestigious DJSI, FTSE4Good and CDP sustainability indices.

Ferrovial's operations span four businesses.

#### 2.1 SERVICES

Ferrovial Services is one of the leading European infrastructure-linked service operators.

Ferrovial Services improves infrastructures and cities, optimizing their efficiency, functionality, sustainability and contribution to society. Its business consists of a holistic offer of added-value services:

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- Maintenance of transport infrastructures, ensuring the most demanding quality and safety levels. The whole of the process is covered end-to-end, from needs-planning for vehicles and persons right up to the solution of all incidents.
- Environmental services to convert cities into sustainable environments: collection, recycling, treatment and transformation of waste into energy and new materials, management of green zones, street cleaning and conservation.
- Management of buildings and facilities services and their energy efficiency, optimizing costs and investments via the execution of bespoke, holistic solutions, from diagnostics to energy management itself.

### 2.2 HIGHWAYS

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Cintra is one of the world's biggest private toll-road developers, both in terms of project numbers and investment volume.

At the end of 2011, Cintra had a portfolio of 20 concessions spanning Spain, Canada, the United States, Portugal, Ireland and Greece. In these six countries, it manages almost 2,000 kilometres of highways, with total investment of over 20 billion euros; in addition to the Serranopark car parks in Madrid.

## 2.3 CONSTRUCTION

Ferrovial Agroman is a Ferrovial subsidiary engaged in the construction of civil works, building and industrial works. It is a reference internationally for its technical capacity in the execution of large transport infrastructures. Its international position continues to improve, and it is noteworthy that international work outweighs domestic in the main operational aggregates.

In the field of civil works, it designs and builds all types of infrastructures: roads, railways, hydraulic works, maritime works, hydro-electric works and industrial works. The division also has significant experience in home building and in non-residential building.

### 2.4 AIRPORTS

Ferrovial is the world's leading private airport operator. It runs six airports in the United Kingdom, operated by BAA (Heathrow, Stansted, Southampton, Glasgow, Edinburgh and Aberdeen), used by 108.5 million passengers in 2011, and providing a service to 204 airlines flying to approximately 612 destinations worldwide.

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## **3. STRATEGY AND CLIMATE CHANGE**

Ferrovial's strategy includes execution of actions to reduce GHG emissions, as well as the development of new business opportunities linked to climate change.

The aim is to achieve less-polluting processes and be one step ahead of future regulations applicable to group businesses, especially in management of waste and air traffic. Energy efficiency is a cornerstone within the framework of Ferrovial's strategy against global climate change.

Policies aimed at driving forward the transition to a low-emission world have accelerated in recent years. For over two decades, the increase in legislation in this field has made it the biggest regulatory global movement in the field of the environment, and the one which has definitely had the greatest economic impact.

In this sense, the EU had set ambitious expectations at the Copenhagen summit, and, to a lesser degree, the Cancun and Durban summits. However, to date, agreements signed have not enabled the demarcation of a clear "post-Kyoto" pathway, over and above almost all Protocol signatories' base commitment to extend its lifetime after 2012. In these terms, the company's position is that there is a growing need for a binding agreement on the road map for the coming years. An environment of predictability and security is essential to planning the investments that companies have been undertaking both to reduce our carbon footprint, and to develop technologies, infrastructures and services geared towards a low-carbon economy.

Moving beyond these global-scale agreements, we aim to stay one step ahead of the regulatory trends, which, at a regional level, address achievement of the reduction objectives, as well as the funding of technological changes and infrastructures essential to moving forward in this process. Thus, for example, at Ferrovial we pay special attention to the development of legislation covering domestic projects (in Spain and other EU member countries), the Carbon Reduction Commitment and the Green Deal (in the UK). In our opinion, smart regulation in these fields might not just contribute to better achievement of reduction goals, but also to the development of sustainable economic activities capable of generating jobs and wealth.

#### **OPPORTUNITIES FOR FERROVIAL**

In this regulatory context, the transport and building industries are becoming vulnerable to an increasingly demanding legislative framework in the field of climate change and energy efficiency.

Far from considering this regulation to be a threat to Ferrovial's portfolio of activities, we feel that the environment that is coming together can generate great opportunities for the Group, especially in countries which have signed public commitments to reduce emissions. In the last few years, Ferrovial has made a firm bet on long-term R+D investment, focusing on the development of low-emission solutions for the transport industry, as well as holistic municipal services enabling cities to be come more efficient in their use of resources and energy (smart cities).

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Thus, the transformation to low-emission transport infrastructures will in part depend on their integration with ICTs, which will provide them with greater flexibility to enable a reduction of energy consumption and emission of GHGs. Smart infrastructures, capable of adapting themselves to real-time demand, ensuring the fluidity of transport or activating solutions for more sustainable mobility. Examples of this are the systems of traffic events predictability, advanced "SAVE" feeder systems for highways, or the DAVAO+ system for the detection of high-occupancy vehicles; all of which are developed in the framework of the "Smart Infrastructure Innovation Centre (CI3)" built in 2010.

Driven by globalization and the breakthrough of the emerging economies, the demand for personal air transport will probably continue to grow, affecting the aviation industry. We therefore have to ensure that growth in aviation is compatible with combating climate change. As managers of the United Kingdom's main airport (hub), it is critical for Ferrovial to ensure the advantages Heathrow provides to the British economy are compatible with a reduction in the carbon footprint of this highly important infrastructure. Examples of our actions in this sense are included in the carbon footprint section.

Energy efficiency is also a highly significant challenge on a global scale; whilst remaining a source of opportunities for Ferrovial. Above and beyond the consolidated energy services business, there must be a mid-term focus on wide-ranging solutions for more efficient cities, in which the linkage of municipal services - until now dealt with separately - can bring about important savings, not only in economic terms, but also in terms of energy consumption and, hence, GHG emissions. Ferrovial's bet on smart cities has already given birth to emblematic projects (such as the Birmingham one in the UK), and it will continue to grow in the coming years.

In the mid-term, also with regard to cities, energy-focused building rehabilitation, with actions on an urban scale wherever possible, must become a complement to building from scratch. In recent years, Ferrovial has worked on the development of funding models, based on public-private partnerships, which could facilitate this gradual renewal of current building stock in the mid to long term. A significant study gave a figure of 300 bn€ for potential savings to be made from an ambitious urban renewal programme and energy rehabilitation programme for Spain, able to take on the commitments stemming from emerging European regulation in the field of energy efficiency. This would be an alternative for the building industry, but it also represents a great opportunity for the country as a whole, due to the potential it has to generate economic activity and jobs: possibly hundreds of thousands of jobs.

#### **Q&E STEERING COMMITTEE (Q&ESC)**

At Ferrovial, climate change-related strategy is a fundamental part of corporate strategy. For this reason, issues related to the climate change strategy are dealt with by a committee with a company-wide remit. Throughout all Ferrovial companies the Q&ESC is the vehicle for implementation of climate change strategy.

In 2008, Ferrovial set up the Quality and Environment Committee, which has the role of discussing, decision-making, setting requirements and reviewing project-related results, initiatives and practices, principally in regard to climate change; as well as implementation of the Quality and Environment Policy throughout the company.

The Committee is formed by the Quality and Environment departmental heads of all Ferrovial businesses, who also form part of the Management Committee in each business division.

Their participation is essential, given that they are familiar with the company environment and know the stakeholders in their areas of business. As appropriate, these members invite other participants whose expertise is key to decision-making.

The Committee meets quarterly, or as often as required, and makes full use video-conferencing facilities, with the aim of reducing CO2 emissions from participants' trips. Committee members manage all environmental aspects of their respective businesses, including climate change, on a daily basis.

The Q&E Committee's decisions and actions stem from the application of the Corporate Responsibility policy, which is set by the Board of Directors. The decision-making process takes the following aspects into account: the needs of the countries in which Ferrovial operates, recommendations of governmental bodies and organizations, the commitment to reduce emissions, mitigation measures, the success of measures adopted etc.

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#### 4. REDUCTION TARGETS 2009-2020

In 2011, a project named "Carbon footprint reduction targets 2009 – 2020" was executed. It involved all of the Quality and Environment directorates of all business departments.

The project's main action streams were as follows:

- To propose and set intensity indicators for GHG emissions common to the activity in question for each of the businesses, and for the levels of the pyramid that each business considered appropriate (level 1, level 2 and level 3). Examples of these intensity indicators include: Tons CO2 equiv/€, Tons CO2 equiv/Km of highway, Tons CO2 equiv/m2 maintained...
- Given the diversity of activities and businesses, and following exhaustive analysis of best practice internationally, the conclusion was reached that for Ferrovial as a whole the best yardstick for measuring carbon intensity was that defined by the Tons CO2 equiv/€ turnover relationship (level 1).
- 3. To identify opportunities and possibilities for reduction of emissions and improvement streams.
- 4. To set emissions reduction targets in absolute and relative terms for each activity, at the different levels up to corporate, conditioned by delivery of a business scenario and different premises ("disclaimer").
- 5. In regard to "scope 3": calculation and identification of opportunities to reduce emissions associated to our activity at our customers' facilities with the aim of seeking business opportunities.



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Figure 1. A scheme summarizing the calculation method employed to set targets in the corporate sphere, via the inclusion of partial targets at different levels of the organization.

To summarize, combining all objectives for each business department, the global targets for Ferrovial as a whole are set as follows:

- A 21.3 % reduction in the intensity indicator measuring tons of scope 1&2 CO2 emitted per million euros billed, with regard to 2009.
- In absolute terms (Tons CO2 equiv), to set 2009 emissions against the 2020 horizon, taking into account that the turnover forecast for the Group as a whole is 27 % higher than the base year.

#### **EVOLUTION OF THE OBJETIVES (SCOPE 1&2)**

	Evolution 11vs10 %	Evolution 11vs09 %
RELATIVE TERMS (Tons CO2 equiv/million € )	-6.46	-8.52
ABSOLUTE TERMS (Tons CO2 equiv)	-6.67	-11.07

## **5. CARBON FOOTPRINT: GHG EMISSIONS INVENTORY**

The carbon footprint calculation and reporting project is applicable **to the whole of the Ferrovial Group**, including all business departments and subsidiaries.

Calculation methodology is mainly based on GHG Protocol (WRI & WBCSD), since it has greatest international acceptance, whilst compliance with ISO14064-1 is also maintained. Nevertheless, other methodologies were used to take into account specific aspects of business, for example DEFRA methodology for operations in the United Kingdom , and EPER methodology to estimate diffuse emissions from landfills.

For calculation purposes, operational control is taken to be the organizational limit. Using this focus, companies calculated emissions from sources over which they exercised full authority to introduce and implement their operational policies, regardless of their shareholding in the company.

In its "Calculation and Reporting of the Carbon footprint" procedure, Ferrovial uses 2009 as its base year and undertakes the re-calculation of its inventory whenever there is a structural change, a change in calculation methodology (emission factors, focus...) or changes in annual consumption levels, with the aim of ensuring the comparability of information between years.

As a result of the exhaustive analysis undertaken as part of the "Carbon footprint reduction targets 2009 – 2020" project, the conclusion was reached for all business departments that "Operational Control", out of all the focuses possible, was the one which most accounted for Ferrovial's functioning features. This focus differs from that employed in previous years.

With the aim of ensuring consistency through time, historical emission data was re-calculated (for 2009 and 2010) using this new focus; thereby enabling consistent comparison with the base year (2009).

The mist significant changes which occurred between 2009 and 2011 were due to:

- 1. Structural changes. Applicable to:
  - a. Swissport. The company was sold in 2010. For this reason, re-calculation was not executed.
  - b. Amey-Cespa. This company was bought at the end of 2010 and was not consolidated within Ferrovial until 2011. An estimate of emissions for 2009 and 2010 was made in order to allow for an analysis of the evolution of emissions.
- 2. **Source data.** In 2009 not all data for construction was available and available data was not reliable. For this reason changes were made to the e-site (*e-obra*) application. Due to this, data for 2010 were also estimated.
- 3. **Changes focus.** The change of focus affects the rest of the companies. Emissions were calculated according to the new "operational control" focus. Cespa was the operating business where said change of focus was most noted, given that, currently, only company-owned landfills are taken into account, since the operational control precept only applies to them.

Emissions computed are those included under scopes 1, 2 and 3.

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#### Scope 1. Direct Emissions

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Direct emissions are emissions from sources which are owned or controlled by the company. They mainly originate from:

- Fuel combustion in stationary equipment to produce electricity, heat or steam
- Fuel combustion in vehicles owned or controlled by the company.
- Diffuse emissions. Emissions not associated with a given emitting source, as is the case with biogas emissions from a landfill.

In accordance with the GHG Protocol standard, emissions from biomass combustion are reported separately from Scope 1. These emissions include emissions from combustion of biodiesel and biogas captured and channelled. This biogas is burnt in co-generation processes or flare-burnt.

#### Scope 2. Indirect Emissions

Indirect GHG emissions are emissions resulting from the consumption of electricity bought from other companies which produce or control it.

#### Scope 3. Other Indirect Emissions

This is an optional reporting category covering the remaining indirect emissions. These emissions are a consequence of company activities but occur at sources which are neither owned nor controlled by the company. The Scope 3 emissions computed by Ferrovial include the following categories:

- Business trips
- Vehicle transit on highways on which we are responsible for traffic control
- Emissions from hangars during landing, take-off and taxiiing at airports
- Operation of vehicles and machinery on airport runways
- Passengers' access to airports
- Staff access to airports
- Water and waste at airports



## 5.1 SCOPES 1&2 (Tons of CO<sub>2</sub> equiv)

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	2009	2010	2011
Amey	49,453	52,980	60,563
BAA	439,963	431,856	399,703
Cadagua	108,299	79,825	78,900
Cespa	383,236	360,132	295,256
Cintra	15,684	15,195	14,179
Construction 152,900		152,900	171,257
Ferroser 18,329		18,194	14,888
Corporation 896		860	650
Amey-Cespa 35,555		35,555	35,555
TOTAL	1,204,315	1,147,497	1,070,951

In 2011, emissions for Ferrovial as a whole fell 11% in comparison with the 2009 base year and by 6.6 % in regard to 2010.



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## Scopes 1&2 by business 2011



TOTAL: 1,070,951 Tons CO2 equiv





TOTAL: 1,070,951 Tons CO2 equiv



2011



## TOTAL: 1,070,951 Tons CO2 equiv

## **Emissions from biomass combustion 2011**



## TOTAL: 50,668Tons CO2 equiv

### **CARBON FOOTPRINT REPORT**

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## 5.1.1 AMEY

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A British company, Amey is the leader in infrastructure maintenance (roads, railways and facility management)





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## • Scopes 1&2 (Tons CO2 equiv)



Amey is amongst the companies which have increased their emissions. Said increase in emissions is linked to an increase in the company's business. However, in relative terms, the intensity indicator (Tons CO2 / Million Pounds billed) fell in 2011 in comparison with 2010. The figure for 2011 was 54.6 Tons CO2/ $\pounds$  million, 2.1 % less than in 2010. This improvement is fruit of the implementation of energy efficiency measures executed by Amey in its contracts.

## • Scopes 1&2. By GHG type

	CO <sub>2</sub> (Ton)	CH₄ (Ton)	N₂0 (Ton)	Tons CO2 equiv
2009	49,039	1.102	1.263	49,453
2010	52,426	1.425	1.690	52,980
2011	60,116	1.353	1.349	60,563



#### 2011

## • Scopes 1&2. By sources (Tons CO2 equiv)



## 2011

## 5.1.2 AMEY – CESPA

AmeyCespa is a joint venture between two Ferrovial Services companies, the main aim of which is to pool Amey's experience in the British services sector with the wide-ranging expertise of Cespa in the field of waste.

AmeyCespa has thus bet firmly on recycling and making use of waste as energy; by using cutting-edge technologies to generate energy types whilst minimizing the environmental impact. The company's work is thereby transformed into a commitment to the environment and to meeting the challenges and needs of the localities where it provides a service.





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• Scopes 1&2 (Tons CO2 equiv)



• Scopes 1&2. By GHG type

	CO <sub>2</sub> (Ton)	CH₄ (Ton)	N₂0 (Ton)	Tons CO2 equiv
2011	5,240	1,443	0.069	35,555





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• Emissions from biomass combustion (Tons CO2 equiv)



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## 5.1.3 CESPA

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Cespa is a company focusing on the provision of environmental services and waste management and treatment in Spain, Portugal and the United Kingdom. In the UK it operates as part of a joint venture with Amey, AmeyCespa.

Cespa is the leading company in the gardening business, industrial waste management and waste processing. Furthermore, Cespa is one of the sector's top three companies for urban solid waste collection (USW) and road cleaning.

Cespa reduced its emissions (scopes 1&2) by 23% on the 2009 base year.







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• Scope 1&2 (Tons CO2 equiv)



• Scopes 1&2. By GHG type

	CO <sub>2</sub> (Ton)	CH <sub>4</sub> (Ton)	N <sub>2</sub> 0 (Ton)	Tons CO2 equiv
2009	142,050	11,484	0.064	383,236
2010	136,855	10,631	0.067	360,132
2011	121,853	8,256	0.090	295,256

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## • Scopes 1&2. By sources (Tons CO2 equiv)



### • Emissions from biomass combustion (Tons CO2 equiv)



99% of these emissions comes from methane combustion in processes involving co-generation of electricity or flare combustion.

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## **5.1.4 FERROSER**

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Ferroser specializes in maintenance and conservation of infrastructures and buildings in Spain and Portugal.

Its offer includes specialization by streams in the field of cleaning of buildings and premises: healthcare facilities cleaning, industrial cleaning, transport cleaning and conventional cleaning (offices, shopping centre and premises in general). It also manages a wide range of auxiliary services, including tele-care, ticket sales, customer care, land auxiliary services, urgent healthcare transport (ambulances), home help service etc.

Ferroser's business includes buildings and facilities maintenance in sectors as varied as industry, healthcare, banking, hotels, private companies (telecommunications etc.) in which it also provides auxiliary services such as call centres, fiscal management etc. Particularly noteworthy in this part of its business are its energy efficiency projects and integrated service management contracts, which bring together different activities, and specifically include holistic sports centre management.

Ferroser Infrastructures executes maintenance and conservation of infrastructures: roads, airports and urban thoroughfares, as well as signposting for roads and airport signage.





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## • Scopes 1&2 (Tons CO2 equiv)



## • Scopes 1&2. By GHG type

	CO <sub>2</sub> (Ton)	CH <sub>4</sub> (Ton)	N <sub>2</sub> 0 (Ton)	Tons CO2 equiv
2009	18,328	0.010	0.002	18,329
2010	18,193	0.023	0.003	18,194
2011	14,886	0.020	0.003	14,888



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## Scopes 1&2. By companies (Tons CO2 equiv)



• Scopes 1&2. By sources (Tons CO2 equiv)



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## **5.1.5 CINTRA**

Cintra is one of the world's largest private highway developers, both in terms of project numbers and volume of investment.

At the close of 2011, Cintra had a portfolio of concessions stretching across Spain, Canada, the United States, Portugal, Ireland and Greece. In these six countries it manages almost 2,000 kilometres of highways, with total investment of over 20 billion euros; in addition to the Serranopark car parks in Madrid. Twelve of these concessions are under the operational control of Cintra and have been included in the carbon footprint scope for 2011.

Scope 1&2 emissions fell by 9.6 % when compared to 2009.



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## • Scopes 1&2 (Tons CO2 equiv)



	SCOPES 1&2
2009	15,684
2010	15,195
2011	14,179

## • Scopes 1&2. By GHG type

	CO <sub>2</sub> (Ton)	CH₄ (Ton)	N <sub>2</sub> 0 (Ton)	Tons CO2 equiv
2009	15,679	0.022	0.014	15,684
2010	15,189	0.028	0.016	15,195
2011	14,173	0.029	0.017	14,179



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Scopes 1&2. By sources (Tons CO2 equiv)

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Over 75 % of emissions on highways are from the consumption of electricity used in lighting all the stretches of highways, tunnels, tolls and offices, which are the main emission sources.

#### Scopes 1&2. By countries (% de Tons CO2 equiv) •



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## **5.1.6 CONSTRUCTION**

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Ferrovial Agroman is the Ferrovial subsidiary undertaking construction in civil works, building and industrial works. It is a reference internationally for its technical capacity in the execution of large transport infrastructures. Its international position continues to improve, and it is noteworthy that international work outweighs domestic in the main operational aggregates.

In the field of civil works, it designs and builds all types of infrastructures: roads, railways, hydraulic works, maritime works, hydro-electric works and industrial works. The division also has significant experience in both home building and non-residential building.



Construction is made up of these companies:

#### • BUDIMEX

The company undertakes all types of civil works, building and industrial works, as well as in the property development market. All of these activities are carried out in Poland.

#### • FERROVIAL AGROMAN

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As the construction division's flagship company, Ferrovial Agroman operates across all fields, in terms of civil works, building and industrial works. In the field of civil works, it designs and builds all types of infrastructures: roads, railways, hydraulic works, maritime works, hydroelectric works and industrial works.

Ferrovial Agroman also has the support of its auxiliary companies; Ditecpesa – specializing in development, manufacture and sale of asphalt products, Edytesa - specializing in sliding formwork technology and lifting of large loads, Tecpresa - with experience in the post-tensioning market, and Ferconsa - boasting a structure and technical team with experience in medium-sized building and civil works projects.

In the field of building, it undertakes non-residential building (airport, sports, health, teaching and cultural facilities, shopping and leisure centres, museums, hotels; and restoration of buildings, offices, factories and industrial warehouses etc.) and residential building (homes).



#### • WEBBER

A subsidiary of Ferrovial Agroman since 2005, it is one of the leading road builders in the state of Texas (United States), specializing in the construction of civil works infrastructure, and a leader in the production and distribution of recycled aggregates.



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## • Scopes 1&2 (Tons CO2 equiv)



Ferrovial Agroman has increased its emissions in Spain due to a rise in its agglomerate activity, since this demands higher energy consumption than construction activities undertaken in the foregoing years. Furthermore, agglomerate plants use fuel oil as fuel.

## • Scopes 1&2. By GHG type

	CO <sub>2</sub> (Ton)	CH <sub>4</sub> (Ton)	N <sub>2</sub> 0 (Ton)	Tons CO2 equiv
2009	152,583	3.638	0.777	152,900
2010	152,583	3.638	0.777	152,900
2011	170,776	4.617	1.246	171,257

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#### 62,403 62,403 60,664 56,590 47,665 47,665 36,300 30,301 30,301 17,703 12,531 12,531 2009 2010 2011 2009 2010 2011 2009 2010 2011 2009 2010 2011 **Budimex** FASA Webber Otros

• Scopes 1&2. By companies (Tons CO2 equiv)

• Scopes 1&2. By sources (Tons CO2 equiv)







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#### • Scopes 1&2. By countries (Tons CO2 equiv)

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Ferrovial Agroman's highest emissions percentage comes from Spain, Poland, the USA and the United Kingdom. To a lesser degree, emissions also accrue from activities located in Chile, Puerto Rico, Portugal, Ireland and Greece.
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# 5.1.7 CADAGUA

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The industrial construction division has operations in the water treatment and environment sectors, and has the aim of growing in the field of energy. Cadagua has a track record as an engineering company and builder of water treatment plants. It is the Spanish market leader and has gained international prestige in seawater desalination facilities.





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# Scopes 1&2 (Tons CO2 equiv)



The reduction in emissions from scope 2 in 2010 and 2011, when compared to 2009, was due to the fact that 2010 saw the loss of operational control over desalination plants – which are big consumers of electricity.

# • Scopes 1&2. By GHG type

	CO <sub>2</sub> (Ton)	CH <sub>4</sub> (Ton)	N <sub>2</sub> 0 (Ton)	Tons CO2 equiv
2009	108,242	1.089	0.110	108,299
2010	79,758	1.290	0.129	79,825
2011	78,832	1.292	0.133	78,900

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## • Scopes 1&2. By countries

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Spain accounts for 99% of emissions, although - due to its international expansion - Cadagua is beginning to operate in countries like the Arab Emirates, Oman, Morocco, India and Chile.

## • Emissions from biomass combustion (Tons CO2 equiv)



In 2011, there was an increase in the entry of waste water flow to the plants, meaning that, compared to previous years, there was a rise in the biogas produced and burnt at stationary or flare sources.

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2011

# **5.1.8 AIRPORTS**

Ferrovial is the world's leading private airports operator. It runs six airports in the United Kingdom, operated by BAA (Heathrow, Stansted, Southampton, Glasgow, Edinburgh and Aberdeen), which were used by 108.5 million passengers in 2011, providing a service to 204 airlines flying to approximately 612 destinations worldwide.



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## 2011

# • Scopes 1&2 (Tons CO2 equiv)



SCOPE1 SCOPE 2

• Scopes 1&2. By GHG type

	CO2 (Ton)	CH₄ (Ton)	N₂0 (Ton)	Tons CO2 equiv
2009	439,647	1.168	0.941	439,963
2010	429,210	13.622	7.612	431,856
2011	397,031	10.825	7.886	399,703





• Scopes 1&2. By sources (Tons CO2 equiv)



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## **5.1.9 CORPORATION**



Corporate is Ferrovial's company headquarters where all company information is consolidated and where the management committee is located.

Corporate provides support to all Business Units, including the Quality and Environment directorates.



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## 2011

# • Scopes 1&2 (Tons CO2 equiv)



• Scopes 1&2. By GHG type

	CO <sub>2</sub> (Ton)	CH <sub>4</sub> (Ton)	N <sub>2</sub> 0 (Ton)	Tons CO2 equiv
2009	896	0.000	0.000	896
2010	860	0.000	0.000	860
2011	650	0.000	0.000	650



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# • Scopes 1&2. By sources (Tons CO2 equiv)

## 2011

# 5.2 SCOPE 3

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Ferrovial has undertaken a great effort and has advanced in Scope 3 calculation, taking into account criteria set in the report titled "Corporate Value Chain (Scope 3) Accounting and Reporting Standard" published by the Greenhouse Gas Protocol Initiative, the WRI and the WBCSD.

Reporting on this category is optional and includes the rest of the indirect emissions. These emissions are consequences of the company's business, but they occur at sources which are not owned or controlled by the latter.

In 2011, Ferrovial calculated Scope 3 for the most representative headings over which we may exercise an influence in reducing these emissions. The company has knowledge and technology which we can make available to our customers so as to achieve this end.

The Scope 3 emissions included the following:

- For computation of Scope 3, BAA took into account emissions from aircraft during landing, take-off and taxiing on the runway, business travel, vehicles operating on the runways, access to the airport of passengers, and water and waste management.
- Cintra took account of emissions generated by use of the highways for which it manages traffic, with said emissions reaching a total of 739,817 equivalent tons of CO2.
- Emissions from business travel from all areas of the business.

Use of	Business
Highways	travels
21%	<1%
	Airports 79%

• Distribution of Scope 3 emissions (Tons CO2 equiv)

	SCOPE 3 (Tons CO2 equiv)
Airports	2,749,099
Use of highways	739,817
Business travel	5,210
Total	3,494,126

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2011

• Airports

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- Staff commuting
  - Passengers transport
- Air traffic movements
- Waste
- Water
- Vehicles and operational equipment



TOTAL: 2,749,099 Tons CO2 equiv

• Use of highways

ferrovial



TOTAL: 739,817 Tons CO2 equiv



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• Business travel



	Business Travel (tons CO <sub>2</sub> equiv)		
	2010	2011	
Amey	399	531	
BAA	412	338	
CESPA	665	698	
Cintra	667	415	
FASA	1,859	2,109	
Ferroser	645	525	
Corporation	629	594	
TOTAL	5,276	5,210	

## 2011

# **6. EMISSIONS AVOIDED**

## • Cespa

ferrovial

- EMISSIONS AVOIDED DUE TO BIOGAS MANAGEMENT

In comparison with 2010, in 2011 there was a 12.4% increase in the greenhouse gas emissions avoided thanks to biogas management of landfills.

It is also worth noting that in 2011 improvement works on the current degasification networks in controlled deposits continued, and that they now have active degasification. Moreover, work on the first phase of the Almería controlled degasification tank was completed.

	EMISSIONS AVOIDED (Tons CO2 equiv)		
	CESPA SPAIN	CESPA PORTUGAL	TOTAL
2009	519,604	471	520,075
2010	628,874	2,807	631,681
2011	688,157	21,852	710,009

## ELECTRICITY PRODUCED FROM BIOGAS RECOVERY

In 2011 there was an increase of 12.2% in the production of electricity from biogas recovery at landfills in comparison to 2010.

As in the previous year, data for Cespa Spain and Cespa Portugal were taken into account in making this calculation.

Other milestones in 2011 include the start-up of the 1048 kW engine in Albacete for waste-toenergy use of the biogas and the 1365 kW one in Burgos which runs on biogas from the landfill.

Likewise, works to improve the waste-to-energy conversion with the current engines.

Work has also continued on the optimization of the recovery of biogas using current motors.

	CESPA SPAIN (GJ)	CESPA PORTUGAL (GJ)	TOTAL (GJ)
2009	308,959	0	308,959
2010	361,593	0	361,593
2011	398,614	7,075	405,689

## 2011

## • Ferrovial – Agroman

ferrovial

In 2011, Ferrovial Agroman works to reduce Scope 3 emissions, focusing on four action streams:

- Reduction of distances for on-site earth transport by lorry or dump truck
- Implementation of energy efficiency proposals facilities at works being executed for customers
- The technical office made energy efficiency proposals for projects studied for customers

2011	Action	Estimated saving	Unit	Reduction (Tons CO2 equiv)
1.	Reduction of transport distances	11,836	1000 m3 km	10,652.4
2.	Site Certificates Proposals	637,488	Kwh/year	207,7
3.	Technical office proposal of forms	921,940	Kwh/year	300,4
4.	Efficient driving courses	633	litres	1,7
				11,162.3

- In regard to mobility, efficient driving course have been given.

## • Cadagua

Thermal sludge drying involves applying heat to evaporate most of the interstitial water mixed in with the sludge. In the plants run by Cadagua, energy cogeneration is achieved by using natural gas in motor-generators, turbo-generators or Centidry. This cogeneration produces electrical and thermal energy from natural gas. Cogeneration in a sewage treatment plant meets two basic objectives, one economic and the other environmental.

In 2011, Cadagua generated a total of 157,061,630 kWh.

	Thermal drying (kWh)	WWTP (kWh)	TOTAL (kWh)
2009	119,528,632	6,011,047	125,539,679
2010	133,247,020	7,127,767	140,374,787
2011	152,925,950	4,135,679	157,061,630

By means of these processes a total of 51,183 tons of CO2 equivalent were avoided in 2011.

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## • Fleet.

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The different businesses work on an ongoing basis in pursuit of operational and efficient fleet solutions.

The service business lines own the largest number of vehicles. They use industrial vehicles of different types and with special requirements, depending on their purpose.

Action plans were launched in 2010, and these have made a notable improvement in the efficiency of the fleet, and are expected to continue to do so in the coming years. A sophisticated system for monitoring and designing routes for the waste collection vehicle fleet has been developed, which is by far more effective than the previous GPS system, as it is complemented by a GIS map server. In addition, a program was launched in 2010 to optimize resources in urban services contracts, which have a particular impact on the industrial fleet. The program, called NEO, adapts the number of vehicles to the real needs of each contract and production center by optimizing routes with the use of the most advanced information systems.

The Intelligent Infrastructure Center (CI3) of Ferrovial's R&D&i area is developing the HEDISER model (waste collection route optimizer). This is based on an information system that calculates in real time the best routes for collecting and transporting waste from storage points to treatment facilities. The system is capable of correcting the routes according to variables such as traffic congestion or road works, and complements another one that has been developed in the R&D area: the RITNER (intelligent waste collection) system. RITNER uses a matrix of sensors installed on the roadside containers that monitor the level of waste in each container in real time from a central point.

	Percentage of vehicles running on alternative fuels in 2011	
Amey	12%	
BAA	55%	
CESPA	8%	
Cintra	3%	
Ferrovial Services	0.71%	



Free translation from the original in Spanish. In the event of a discrepancy, the Spanish language version prevails.

#### INDEPENDENT REVIEW REPORT ON THE 2011 GREENHOUSE GAS EMISSIONS INVENTORY

To the Management Committee of Ferrovial, S.A.:

#### Scope of our work

We have been engaged by the Management of Ferrovial, S.A. to carry out a limited independent review of the accompanying Inventory of Greenhouse Gas Emissions (hereon GHG Inventory) of Ferrovial, S.A. and its group companies (hereon, Ferrovial) for the year ending 31 December 2011. This report has been issued in accordance with the terms and conditions of our engagement letter dated 24 February 2012.

The Management of Ferrovial is responsible for the preparation and updating of the 2011 GHG Inventory, in accordance with the internal procedure "Quantification and disclosure of the Carbon Footprint" described in pages 11 y 12 of the report *Carbon Footprint 2011* of Ferrovial. Furthermore, it is also responsible for defining, implementing, adapting and maintaining the internal control and management systems from which the information is obtained for the preparation of the GHG Inventory, as well as the processes and basis for its preparation.

The GHG inventory includes all group companies of Ferrovial and covers the greenhouse gases: carbon dioxide, methane, nitrous oxide, HFC, CFC and SF6 as listed in the Kyoto Protocol. It is also included both the direct and indirect emissions corresponding to Scopes 1, 2 and 3 indicated in the "*The Greenhouse Gas Protocol. A corporate accounting and reporting standard*" developed by the *World Business Council for Sustainable Development* and the *World Resources Institute*.

Our responsibility is to issue an independent report, based on the limited assurance procedures used in our examination to verify the following:

- Whether the 2011 GHG Inventory of Ferrovial contains any significant errors or has not been prepared in accordance with the internal procedure "Quantification and disclosure of the Carbon Footprint".
- Whether internal procedure "Quantification and disclosure of the Carbon Footprint" approved by the Management of Ferrovial has been prepared in accordance with the provisions of ISO 14064-1.

## Criteria for preparing our verification

We have carried out our review in accordance with the ISAE 3000 Standard for Assurance Engagements Other than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standard Board (IAASB) of the International Federation of Accountants (IFAC), for limited assurance.

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Our review has consisted in formulating questions to Management and various units that have participated in the preparation and implementation of the internal procedure "Quantification and disclosure of the Carbon Footprint", and in the preparation of the 2011 GHG Inventory of Ferrovial, and in applying certain analytical procedures and tests which, in general, are set out below:

- Interviews with the personnel of Ferrovial in order to ascertain the content and process of implementation of the internal procedure "Quantification and disclosure of the Carbon Footprint".
- Analysis of the processes for compiling and validating the data for the 2011 GHG Inventory of Ferrovial.
- Analysis of compliance of the internal procedure "Quantification and disclosure of the Carbon Footprint" with the provisions set down in ISO 14064-1.
- Evaluation of the compiling and internal control systems in relation to the preparation of the 2011 GHG Inventory of Ferrovial.
- Verification through analytical and substantive testing based on the selection of a sample, of the quantitative information (activity data, calculations and information generated) for determining the 2011 GHG Inventory of Ferrovial and its appropriate compilation in accordance with the internal procedure "Quantification and disclosure of the Carbon Footprint".

The quantification of greenhouse gas emissions is subject to more inherent limitations than financial reporting given their nature and the methods used to determine, calculate or estimate emissions. The scope of a review is substantially narrower than a reasonable assurance review, and, therefore, less comfort is provided. Under no circumstances can this report be construed as an audit report.

#### Independence

We have carried out our work in accordance with the independence standards required by the Code of Ethics of the *International Federation of Accountants* (IFAC). Our work has been carried out by a team of sustainability and climate change experts with substantial experience in these fields.

#### Conclusion

Based on the results of our procedures nothing has come to our attention that causes us to believe that:

- The 2011 GHG Inventory of Ferrovial contains any significant errors or has not been prepared in accordance with the internal procedure "Quantification and disclosure of the Carbon Footprint".
- The internal procedure "Quantification and disclosure of the Carbon Footprint" approved by the Management of Ferrovial has not been prepared in accordance with the provisions of ISO 14064-1.

PricewaterhouseCoopers Auditores, S.L.

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M<sup>a</sup> Luz Castilla Director 28 June 2012



# Appendix

## 2011 GHG Inventory of Ferrovial

GHG Inventory	tCO2-eq
Scope 1	638.019
Scope 2	432.932
Scope 3	
Business travel	5.210
• Use of the highway	739.817
• Use of the airport	2.749.099
Biomass and biodesel combustion emissions	50.668