04 Environment

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Environmental protection is essential in attaining **sustainable development** that will enable us to ensure the existence of the resources available to us today for future generations. Caring for and protecting the environment is a task for everyone, one in which businesses play a fundamental role. Companies have **to be responsible** in conducting their business, endeavoring to minimize the impact of their activities to avoid compromising the future of our planet.

"We pursue excellence in sustainable management"

As part of its commitment to sustainability, Abengoa ensures the **environmental sustainability** of both its **products and services** and its **processes**. Accordingly, Abengoa measures, compares, validates and cushions the impact of its activity on the environment.

To this end, the company has designed an **Integrated Sustainability Management System (ISMS)**, which enables reliable information to be obtained on the most significant (social, environmental and economic) aspects of sustainability. The system makes it possible to gather data in real time, which promotes efficiency in management, improves decision-making, and helps mitigate the risks associated with the impact of company activity. In 2011, Abengoa began the process of registering a patent for the system.

Abengoa's aim is to achieve **excellence** in **sustainable management** and make it the core element of company **strategy**.

Photo taken by Tomás Gallego, for the 3rd edition of the sustainability photography contest

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Environment

Environmental management system and ESI indicators

Abengoa has established the **implementation** of **environmental management systems** based on the requirements of the **ISO 14001** standard as a strategic objective for all group companies. The aim is to mitigate any negative environmental impacts the company's products and services may have, and includes lowering the consumption of natural resources, and minimizing wastes and emissions generated by the company.

Practically all of Abengoa's activities fall under the scope of an environmental management system in accordance with the ISO 14001 standard, and all significant environmental impacts are identified according to each company's internal procedures. The **percentage of certified** Abengoa companies totaled **88.18 %** in 2011.

As far as measuring and monitoring environmental impacts and controlling associated operations are concerned, the company requires that all activities with significant environmental impact be covered under a **Monitoring and Measurement Plan**, as well as an **Operational Control Program**.

Furthermore, in 2011 Abengoa implemented the **Environmental Sustainability Indicator (ESI) system**. The system was also incorporated into the ISMS to enhance business management, enabling the company to measure and compare the sustainability of its activities in order to establish improvement targets.

The ESIs unify the different environmental management systems of each company based on the **ISO 14001 standard**, allowing information to be consolidated in order to establish common policies and objectives.

The indicator system covers the following categories of environmental concerns:

- **Biodiversity**: environmental response of facilities according to the sensitivity of the surroundings in which they are located.
- **Water**: sustainable performance of installations in relation to water consumption.
- **Energy**: sustainable performance of installations in relation to energy consumption.
- **Odors**: emission of bothersome odors beyond project sites or areas of operation.
- **Noise**: level of environmental noise produced by installations and areas of operation.
- **Effluents**: effluent discharge management in relation to the environmental quality of the receiving medium, dumping reduction, lowering the resulting impact, and control of administrative requirements.
- **Soil and aquifers**: degree of soil contamination of the site and potential impact on nearby aquifers.
- **Emissions**: sustainable installation performance in relation to air quality.
- **Raw materials**, **products and services**: impact on natural resources and recyclability of production in order to measure the use of materials consumed, suitability of products for reuse, and reutilization of means of production and transportation.
- **Waste**: management of wastes generated by installations in relation to waste treatment and final disposal.
- **Transport**: environmental impact of transporting raw materials and products and of providing services.

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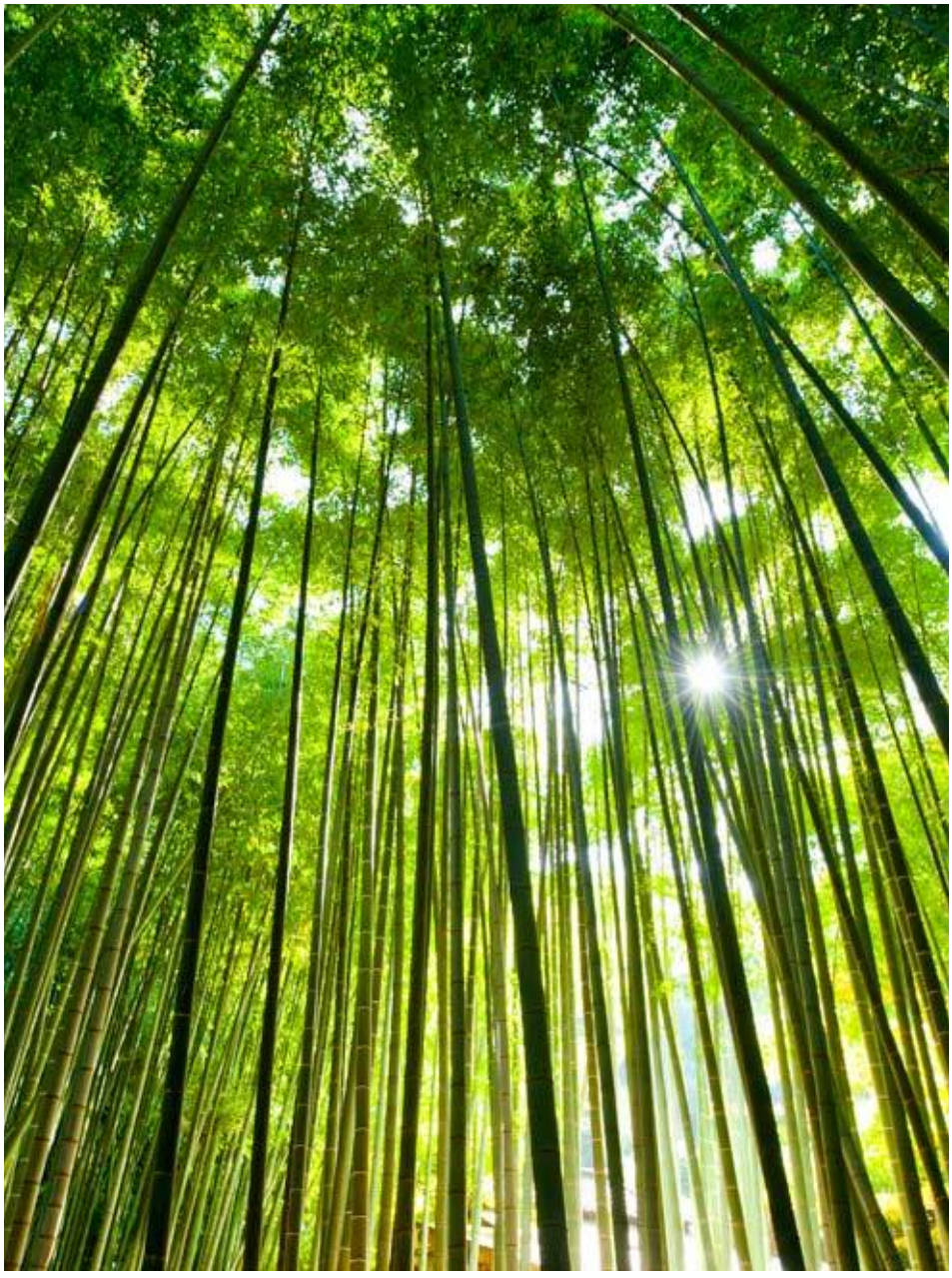

The **primary objectives** of the system are as follows:

- **Securing Abengoa's business** by ascertaining and quantifying associated environmental risks and establishing procedures for mitigating these risks.
- Enabling heads of the different Abengoa companies to **measure** and **compare** the **sustainability** of their activities.
- Establishing **improvement targets**.
- **Ensuring** that the company is recognized as a business that upholds a commitment to **sustainability** and operates in a **sustainable** manner.

In short, the indicator system will facilitate **environmental risk detection** and coverage by determining aspects which have, or could potentially have, a **significant impact on the environment**.

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Greenhouse Gas Inventory

Abengoa has been reporting the **greenhouse gas (GHG)** emissions associated with its products and services since 2008 through the use of a system designed by the company for this purpose: the **GHG Inventory,** which, together with the **CSR Management System** and the **ESI Indicators**, today makes up the **ISMS**.

In order to implement the inventory, a **computer application** was also designed, providing the basis for the application that currently houses the ISMS. The tool incorporates **emissions accounting** for all scopes and sources established under Abengoa's internal norm governing the inventory, which was devised in accordance with **international standards**.

The inventory norm establishes the mandatory nature of reporting for suppliers. In order to monitor emissions associated with the entire range of acquired goods and services, the computer application is linked to Abengoa company procurement applications, blocking purchases from providers who do not disclose their emissions and ensuring information on related emissions for each order placed.

In addition to signing the Abengoa **Social Responsibility Code**, all Abengoa suppliers are required to sign the **Greenhouse Gas Emissions Reporting System Implementation Agreement**. To date, more than **14,000** agreements have been signed worldwide.

The process of verifying Abengoa company inventories through the ISO 14064 – 1: 2006 standard commenced in 2011.

Light bulb replacement in India

On September 30, 2011, the secretariat of the United Nations Framework Convention on Climate Change approved the registry of **Abengoa's fourth Clean Development Mechanism (CDM)** project in **India**. The "Replacement of incandescent light bulbs with high-efficiency compact fluorescent lamps (CFL)" project will generate around 361,670 carbon credits between 2011 and 2020.

This new initiative involves replacing around 6,000,000 100 W and 60 W incandescent bulbs for long-lasting 20 W and 12 W compact fluorescent lamps featuring higher illumination capacity in the district of Ahmedabad, India. The Gujarat Clean Development Mechanism Project Pvt. Ltd. enterprise contracted Abengoa to present the CDM project before the United Nations, in addition to carrying out the required validation and verification procedures for carbon credit issuance.

The aim of the project is to expand the use of high-efficiency lighting technology in residential households, and help lower CO_2 emissions as well as annual demand for electricity from the grid to which the district of Ahmedabad is connected, where fossil fuel plant-based electrical power generation predominates.

Emissions reduction is expected to total **36,167 tCO_2** per annum, which translates into the elimination of 60 GWh in grid consumption during the first year of project implementation.

The company holds a purchase agreement for all carbon credits generated during the life cycle of the project, where the first Emission Reduction Certificates (ERC) are expected to be received beginning in 2012.

Apart from environmental enhancement, the project will help improve quality of life for the region's inhabitants through social well-being and access to better lighting at a low cost.

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Calculation of Abengoa's main environmental indicators

Calculation of Abengoa's environmental indicators takes into account work facilities, their associated activities, and all projects promoted directly by the company.

Taken into consideration for other projects were the main figures deriving from company operations, excluding raw material inputs, consumption and waste attributable to the developers of these projects, and likewise excluding activities involving maintenance or operation conducted at customer facilities and procurement between Abengoa companies.

With the aim of **improving the reliability** of the **environmental indicators**, **improvements** were made to the process of compiling and aggregating data using a **computer application**. Some values from previous years were rectified in accordance with the revised classification, estimation and computation criteria.

All indicators were computed on the basis of specific protocols for measurement and calculation with the aim of standardizing application criteria. Policies were also developed to reduce paper, toner, water and office electricity consumption, and to collect waste for subsequent treatment or recycling.

Due to the nature and variety of Abengoa's activities, and given that it does not make sense to provide a comprehensive list of each and every item, shown are the most relevant items associated with the different environmental aspects. For this reason, available data were aggregated and consolidated so as to give a real and adjusted picture of the company's environmental impact according to the different activities conducted.

Environmental impact control, awareness, and minimization

The following, among others, are some of the most significant activities that have been carried out in order to minimize environmental impacts: prevention-related initiatives, environmental management, effluent and waste inspections, internal and external audits, certification by authorized entities, employee training, and the use of clean technologies.

Raw material inputs

Below is a list of raw material inputs used according to activity.

Construction/installation/assembly activities* (t)	2011	2010	2009
Material			
Aggregates and natural rocks	994,204	275,594	-
Binding materials used in construction (concrete, cement, plaster, etc.)	701,150	227,848	-
Ferrous metal materials	271,681	95,217	-
Glass and ceramic material	165,184	36,923	-
Lumber	1,156	25,319	-
Chemical products and non-renewable additives	819	3,816	-
Non-ferrous metal materials (aluminum)	1,993	1,845	-
Non-ferrous metal materials (copper)	8,087	1,415	-
Coating material (paint, varnish, etc.)	10,081	1,390	-
Oils, fats, and waxes	15,256	-	-
Fossil-based materials	1,719	-	-
Minerals for industrial, chemical, refractory and fluxing uses and for fertilizers and pigments	8,101	-	
Plastics	1,681	-	-
Non-ferroux metal materials (other)	47,725	-	-
(*) Data from 2009 are not available due to changes to classification criteria			

Distribution/intermediation/storage activities* (t)	2011	2010	2009
Material			
Non-ferrous metal materials (copper)	16,550	109,153	-
Non-ferrous metal materials (aluminum)	140	7,735	-
Plastics	5,400	6,791	-
Lumber	1,542	1,007	-
Ferrous metal materials (others)	9,082	-	-
Paper	157	-	-
Other	2,153	31,347	-
(*) Data from 2009 are not available due to changes to classification criteria			

R&D Activities* (t)	2011	2010	2009
Material			
Oils, fats, and waxes	3	6	-
Paper	1	4	-
Chemical products and renewable additives	79	-	-
(*) Data from 2009 are not available due to changes to classification criteria			

Provision of services/consulting/engineering* (t)	2011	2010	2009
Material			
Binding materials used in construction (concrete, cement, plaster, etc.)	8,470	3,781	-
Chemical products and non-renewable additives	2,241	2,464	-
Aggregates and natural rocks	991	1,107	-
Paper	80	814	-
Plastics	49	134	-
Non-ferrous metal materials (copper)	471	-	-
Lumber	31,704	-	-
(*) Data from 2009 are not available due to changes to classification criteria			

Production/manufacturing processes* (t)	2011	2010	2009
Material			
Vegetable feedstock (grains, vegetable oils, biomass, etc.)	10,653,426	8,413,146	-
Chemical products and non-renewable additives	1,284,135	830,089	-
Minerals for industrial, chemical, fertilizer, refractory, foundry and pigment use	41,530	659,922	-
Animal-based raw material inputs	74,822	77,188	-
Binding materials used in construction (concrete, cement, plaster, etc.)	15,341	50,105	-
Aggregates and natural rocks	28,430	34,496	-
Ferrous metal materials	422,626	22,481	-
Chemical products and renewable additives	24,168	13,173	-
Materials of fossil origin	68,047	10,580	-
Other	16,697	15,676	-
(*) Data from 2009 are not available due to changes to classification criteria			

The percentage of the total amount of materials utilized that are materials that have been valorized was 6 %.

Also taken into account are materials processed by companies dedicated to waste recycling through waste treatment, valorization, and recovery.

Waste* (t)	2011	2010	2009
Processed materials	1,770,508	1,664,289	-
(*) Data from 2009 are not available due to changes to classification criteria			

Energy

Listed as important elements under direct energy consumption are **fuels** consumed in the **different industrial processes,** including grain dryers, smelting furnaces, machinery, etc., and in the production of electrical power at cogeneration plants.

Energy (GJ)	2011	2010	2009
Petroleum derivatives	4,440,760	6,304,460	-
Coal derivatives	509,616	1,262,897	-
Natural gas	84,900,119	22,916,041	-
Biofuels	733,974	879,758	-
Biomass	9,336,866	11,744,536	-
Others	19,268	251,869	-
Energy total	**99,940,603**	**43,359,561**	**-**
(*) Data from 2009 are not available due to changes to classification criteria			

The rise in energy consumption in 2011 with respect to 2010 is primarily attributed to **start-up** of operations of new plants fuelled by natural gas.

Data on the amount of electrical power grid consumption corresponds to **permanent work centers,** including both production facilities and offices, and to those projects promoted directly by Abengoa.

Intermediate energy (GJ)	2011	2010	2009
Electrical energy	4,044,718	3,233,223	1,993,205
Thermal energy	1,643,355	1,420,822	1,118,017
(*) 2010 year-end estimation values were adjusted			

If we transform this electrical consumption to the primary sources utilized for generation according to **IEA** data for the different countries where Abengoa operates, the result is as follows:

Indirect energy consumption by primary sources (GJ)	2011	2010	2009
Coal	3,398,402	2,281,945	1,007,833
Fuel oil	484,378	272,189	184,397
Gas	3,278,635	2,251,054	1,210,508
Biomass	231,934	166,123	115,305
Waste	102,500	64,196	40,731
Remainder*	3,226,190	1,583,248	1,158,439
Total	**10,722,039**	**6,618,755**	**3,717,214**

Energy produced and sales in 2011 is disclosed as follows:

Energy production and sales (GJ)		
Type	**Production**	**Sales**
Biofuels	51,546,852	58,864,504
Biomass	3,920,564	2,919,000
Electric	9,719,712	8,212,091
Thermal	3,691,492	224,592

The difference between the biofuel that is produced and sold is due to the purchase of gasoline for the production of different commercial mixtures of ethanol and the buy-sell transactions undertaken throughout the year to meet some specific peak demand of bioethanol.

It should be noted that **14 %** of the production of this energy is of **solar origin.**

The table below shows the results of proactive efforts to increase energy efficiency through technological process enhancements and other savings measures realized in 2011.

Energy-saving initiatives		
Initiative	**Benefit obtained**	**Savings or investment (€)**
Modifications to the condenser tank in the cold water heating system	Reduction in boiler natural gas consumption of 0.5 MWh	64,198
One of the plant's extruders will be replaced. This change will lead to a reduction in energy consumption due to improved technology.	The aim is to lower electrical power consumption to achieve electricity savings of 0.4 MWh	240,000
Substitution of the compressed air installation	Reduction in electricity consumption of 1 % over 2010	100,000
Calculation of natural gas consumption per ton of processed saline slag	Reduction in natural gas consumption per t processed of 1 %	18,000

Initiatives were in turn implemented with the aim of lowering indirect energy consumption. These initiatives involve business travel and commutes to and from work facilities and include, for example, facilitating bus service for employee **transportation**, and efficiently managing the supplier portfolio.

A variety of initiatives were carried out over the course of 2011 aimed at providing more **energy-efficient** products and services.

Energy-saving initiatives for products and services		
Type of product	**Initiative**	**Energy savings achieved**
Desalinated water	Lowering cost and risk of reverse osmosis-based desalination through design, and operation and maintenance enhancements	The project has been under development since 2009, and therefore results are not yet available
Desalinated water	Developing the application of marine, wind and solar power to desalination, treatment-reuse and generation of drinking water	The project has been under development since 2009, and therefore results are not yet available
Desalinated water	Developing new desalination technologies to help lower specific consumption to below 2 kwh/m^3	The project has been under development since 2009, and therefore results are not yet available

Water

According to Abengoa's information system, none of the sources used to collect water is on the Ramsar list of wetlands or may be considered especially sensitive. Nor is there any record of cases in which annual consumption totals more than 5 % of the volume of the sources affected.

The company's policy on sustainability **prioritizes reduction** at source by minimizing the amount used or through **reuse** of the resource for activities in which potability is not a key factor.

Water withdrawal (m^3)	2011	2010	2009
Withdrawal sources			
River water	9,648,300	9,668,754	-
Sea water	130,407,394	83,050,309	-
Well water	5,884,328	6,666,764	-
Grid water	8,528,318	5,484,787	-
Rainwater	127,218	125,140	-
Used water	248,254	164,443	-
(*) Data from 2009 are not available due to changes to classification criteria			

The increase in sea water withdrawal is due to the operational start-up of a variety of desalination plants.

The amount of recycled and reused water totaled 1,211 hm^3, which amounts to 782 % of the total volume of water collected at Abengoa.

Wastewater discharge and spills

In companies in which, due to the nature of their business, the state of water utilized is negatively altered, suitable treatment is undertaken, with final quality being within the limits established under legal requirements, prior to discharge into a public water source.

All discharge operations are likewise authorized and controlled by the pertinent authorities.

Discharge (m^3)	2011	2010	2009
Effluents discharged to sewer networks or outside treatment facilities	1,708,267	1,137,497	372,791
Effluents discharged to surface water masses	72,542,252	48,391,034	15,275,209
Effluent discharges from land infiltration	8,059	5,818	1,066
Dispersed or undefined land discharges	1,211	773,273	-
Third-party delivery for reuse	63,360,318	42,613,544	2,110,046
Third-party delivery (steam)	61,125	52,270	4,509,327
Discharge into the environment (steam)	1,474,756	2,566	259,069

No significant accident spills were reported through the reporting channels in place in 2011, with other spills (oil, residues and chemical substances) entailing a total cost of below 10 k€.

No water resources or habitats affected by spills deriving from company activity were identified through Abengoa's reporting system.

Waste

As part of its normal course of business, Abengoa generates many different types of waste, most of which are **monitored** through the different **environmental management systems** implemented in each company. Here the most significant are shown according to final destination.

Non-hazardous waste* (t)	2011	2010	2009
Physico-chemical treatment	1,623	51	-
Ground or underground deposit	247,209	141,375	-
Permanent deposit	52	286	-
Prior storage	2,533	202	-
Treatment in soil	89,662	7,675	-
Dumping at specially designed sites	16,588	648	-
Utilization as fuel or other means of producing energy	1,598	214	-
Soil treatment, resulting in agricultural benefit or ecological improvement	2,968	2,986	-
Waste accumulation for use in subsequent operations	3,717	1,255	-
Recycling or recovery of organic substances that are not utilized as solvents	28,151	17,137	-
Recycling or recovery of metals and metal compounds	16,917	10,449	-
Recycling or recovery of other inorganic material	209,912	232,503	-
Recovery of elements used to reduce contamination	76	1,702	-
Combination or mixing	242	14	-
Utilization of waste obtained from operations	168	55	-
Land incineration	17	168	-
Deep injection	7,277	-	-
Surface reservoir	2,677	-	-

(*) Data from 2009 are not available due to changes to classification criteria

Hazardous waste* (t)	2011	2010	2009
Ground or underground deposit	821	854	-
Land incineration	2,951	5,024	-
Prior storage	4,583	3,453	-
Dumping at specially designed sites	4,093	417	-
Physico-chemical treatment	4,935	16,088	-
Utilization as fuel or other means of producing energy	681	1,706	-
Waste accumulation for use in subsequent operations	1,674	298	-
Recycling or recovery of metals and metal compounds	9,715	7,550	-
Recycling or recovery of other inorganic material	90,198	76,288	-
Recovery of elements used to reduce contamination	860	56	-
Regeneration or other new use of oils	2,622	57	-
Deep injection	314	317	-
(*) Data from 2009 are not available due to changes to classification criteria			

In accordance with our environmental management policy, all companies that generate hazardous waste conduct an exhaustive **process** of **identifying** and **monitoring** these types of **waste** and their quantities in all operations involving transportation to authorized agents, whether they belong to Abengoa or to outside companies.

Hazardous waste transportation (t)				
Country	**Incoming domestic waste**	**Outgoing domestic waste**	**Waste imported internationally**	**Waste exported internationally**
Argentina	6,153	-	-	-
Germany	133,044	3,040	157,980	21,982
Spain	487,919	154,624	118,748	-
Finland	-	-	32,560	-
France	12,068	-	41,067	3,677
Mexico	13,223	-	-	-
Peru	18,366	-	-	-
United Kindom	39,757	23,559	23,249	-
Sweden	22,045	-	-	-
Total	**732,575**	**181,223**	**373,603**	**25,660**

Emissions

The results of the Abengoa Greenhouse Gas (GHG) Inventory in 2011 provide a complete picture of the **emissions** derived from **company activity**; a structured analysis according to the scopes and different sources, which also includes emissions from biomass operations and the differences. This inventory was accordingly disseminated out of a desire for other companies to also be able to situate their climate change policies at the core of their activities and interests.

Computation of GHG emissions took into account the **direct emissions** of all sources under the possession of Abengoa (combustion, process, transportation and emission leaks), **indirect emissions** from electrical power, thermal energy and acquired steam and the indirect emissions resulting from work commutes, losses in the distribution and transmission of electrical power, and emissions in the value chain of fuels consumed for generating acquired electrical power. Emissions linked to biomass combustion or processing are likewise reported.

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Emissions are calculated in accordance with the methodologies of the **Intergovernmental Panel on Climate Change (IPCC)** and the **GHG Protocol**, using, whenever possible, specific fuel emission factors; and in other cases, national GHG inventory values of the countries in which Abengoa activities are carried out, and, as a last resort, generic figures published by the IPCC.

Greenhouse gas emissions (t CO_2 equivalent)			
	2011	**2010**	**2009**
Direct emissions	2,953,020	2,428,777	1,350,176
Direct emissions from biomass(1)	2,463,272	1,795,673	1,843,258
Indirect emissions(2)	644,209	562,113	360,707
Other indirect emissions(3)	204,981	149,909	83,004

(1) According to the GHG Protocol Corporate Standard.
(2) Includes emissions from acquired electricity, thermal energy, and steam.
(3) Includes exclusively emissions derived from work-related travels (14,978 t), commuting trips to work (12,712 t), loss in transportation of electric energy (73,962 t), and emissions from the supply value chain of fuels used for the generation of purchased electric energy (103,329 t).

For Abengoa, the Greenhouse Gas Emissions Inventory is an instrument for ensuring responsibility and efficiency in the struggle against climate change.

In contrast to other techniques for analyzing the local carbon footprint, the complete accounting of emissions engages all Abengoa companies, in all geographies.

Emission measurement in the Abengoa inventory has clear advantages over other instruments: it is **thorough**, in terms of both the consolidation perimeter and scopes; it is **verifiable** both internally and externally; it constitutes a **global model** upon which to base reduction targets; and it **binds** suppliers to climate preservation policies.

Abengoa requires group companies to draw up annual emissions reduction plans. As a result of the proposed emission reduction initiatives, a **reduction totaling 257,673 t of CO_2** over the 2010 GHG Inventory was estimated for 2011.

Taken into account in carrying out emissions accounting was variation in business, a factor that has a significant distorting effect on results. Thus, a company whose activity increased this year with respect to the previous year will also show a rise in its emissions levels. For this reason, success in fulfilling reduction plans lies in ensuring that the rise in emissions stays below the activity increase.

In order to eliminate this distorting effect, instead of carrying out a comparative study of emissions from one year with respect to emissions in the previous year, Abengoa conducts a comparative analysis between ratios: tons of CO_2/activity.

$$\frac{\text{Emissions 2009}}{\text{Revenues 2009}} \times \text{Revenues 2010} - \text{Emissions 2010} = \textbf{E. reduction}$$

Listed below are some examples of the most significant initiatives carried out over the course of 2011.

Initiatives aimed at reducing greenhouse gas emissions	
Initiative	**Reduction achieved (t CO_2 equivalent)**
Reduction in electric consumption by incorporating elements connected to pump motors to regulate speed	24,327
Improvement in cogeneration engine performance by upgrading motors with high-efficiency pre-chambers	1,192
Capture of CO_2 released during the production process for sale to greenhouses	22,339

In addition, the development of specific methodologies was completed over the course of the year for labeling the emissions associated with the following products and services:

- Steel structure.
- Solar thermal kWh.
- Photovoltaic kWh.
- Waelz Oxide.
- Ferrosite.
- Waste treatment.
- Recovered aluminum (secondary).
- Bioethanol.
- Exported electricity, generated steam, and water desalinated in cogeneration plants.
- Sulfuric acid, oleum, and electricity generated in desulfurization plants.
- Desalinated water.

There has been no record via the Abengoa reporting channels over the last three years of any significant emissions of ozone layer-depleting substances deriving from company activity.

Emissions reported in 2011 are listed below.

Ozone layer-depleting substances (t)	2011	2010	2009
Substances that deplete the ozone layer	1.53	0.82	-
(*) Data from 2009 are not available due to changes to classification criteria			

NOx, SOx, and other atmospheric emissions (t)	2011	2010	2009
CO	11,346	26,372	26,496
VOCs	2,651	3,522	3,612
NOx	7,093	6,547	4,293
SOx	1,019	785	487
Particles	920	2.876	2,287
(*) 2010 year-end estimation values were adjusted			

Managing biodiversity

Abengoa understands that a sound **strategy for preserving biodiversity** requires a combination of elements involving **prevention, management and restoration** of any damage that may be caused to the natural habitats in which the company operates.

Keeping this aspect in mind at all times, environmental impact studies and monitoring tasks were carried out on the activities being conducted on land adjacent to or lying within protected areas, including the identification of affected species, as well as quantification and assessment of derived impacts (Appendix C, tables I, II).

Conservation of these habitats is an **objective** that encompasses **recovery** and **reforestation plans,** strategies geared towards **protecting plant and animal species,** and training in forest fire prevention, etc. (Appendix C, tables III, IV).

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Products and services

Integration of environmental considerations associated with product and service design helps to lower risk and mitigate ensuing environmental impacts. A design that is favorable to the environment helps us take a more **proactive stance** in mitigating the level of product and service impact, identifying **new business opportunities,** and boosting technological innovation.

In certain activities, the **environmental impacts** of products and services that occur during utilization and at the end of their useful life may be of equal or greater importance than those resulting from manufacturing and pose an ever growing environmental challenge. In this regard, **no significant impacts derived** from transportation of products or other material goods used for company activities or in transporting personnel were identified through the Abengoa reporting system. Nor were any significant quantities of recovered products, containers or packages identified.

Environmental expenditure

Measuring the expenses related to environmental mitigation and protection helps Abengoa to determine the efficiency of its environmental initiatives. The following is a list broken down into rectification-related expenses and environmental expenses involving prevention and management.

Environmental Expenditure (€)	2011	2010	2009
Waste treatment and disposal	12,842,975	13,239,163	-
Emissions treatment	612,857	536,319	-
Expenses from purchasing and utilizing emissions certificates	2,025,632	2,751,783	-
Depreciation of specific equipment, maintenance, materials and services necessary for operation	4,656,022	4,240,292	-
Environmental liability insurance	610,754	630,790	-
Cost of remediation - cleanup and decontamination	661,072	559,437	-
Third-party environmental management services	1,138,624	1,408,187	-
Personnel dedicated to training and instruction	48,556	351,464	-
Third-party management system certification	263,656	210,553	-
Personnel for activities arising from environmental management	1,848,053	1,589,277	-
Research and development	1,382,899	7,367,413	-
Costs of implementing cleaner technologies	4,086	274,772	-
Other environmental management costs	3,865,400	153,166	-
Environmental training	75,972	1,165	-
(*) Data from 2009 are not available due to changes to classification criteria			
(*) 2010 year-end estimation values were adjusted			

In 2011, Abengoa reported four infractions related to inadequate management of hazardous waste occurring in 2010 in Murcia, with the total amounting to 330,557 €. There have been no reports at Abengoa of any other incidents.

In 2011, the Swedish Environmental Protection Agency confirmed that Befesa Scandust would be fined SEK 12,149,785 (roughly EUR 1,185,576) for its failure to present its emissions balance sheet for 2006 in due time, caused in turn by a computer malfunction. Various Swedish companies struck with the same fine have lodged an appeal before the Court of Justice of the European Union. Befesa is currently considering following suit.

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Environment

2011 milestones

- **Emissions accounting** for the fourth consecutive year, disclosure of results for the third straight year, and verification of results and systems by an independent third party.
- New **GHG emission reduction plans** were established, and initiatives aimed at achieving the reductions proposed under the plans were drawn up.
- Calculation methodologies applied for the **carbon labeling** of products and services.
- Participation by Abengoa for the fourth consecutive year in the **Carbon Disclosure Project (CDP),** disclosing the company's complete GHG inventory and receiving a score of 92 out of 100 on the Carbon Disclosure Leadership Index, and a grade of B on the Carbon Performance Leadership Index.
- **Attendance-based training** in different regions on new features and **updating of the ISMS** for personnel involved in indicator reporting.
- Inclusion of the company by the **Industry Classification Benchmark (ICB) Standard** in the "Renewable Energies" category, made up of companies dedicated to developing or manufacturing systems and equipment for renewable energies, and producing alternative fuels.

Photo taken by Gonzalo Zubiría Furest, for the 3rd edition for the Sustainability Photography Contest of Abengoa

04
Environment

Improvement areas

Monitoring and reducing the impact of the company's activities on the environment is a task that requires continuous improvements in order to guarantee results. Noteworthy among these enhancements are the following:

- **Reviewing established environmental policies** in order to ensure proper mitigation of company-related environmental risks and the efficiency of the measures implemented to this end.
- Setting goals that are **achievable, requirable, and verifiable.**
- **Reducing** company **impacts** on the environment.
- **Adapting** the **GHG** inventory and **ESI** indicator **computer application** to user requirements in order to facilitate the data reporting process by ensuring data reliability.

Future goals and challenges

The primary objective among the goals that have been set for the coming years is the labeling of company products and services with the corresponding carbon footprint.

Also essential is ongoing improvement of the **environmental sustainability systems** developed by the company in order to make them a reliable tool of paramount importance in the decision-making process in pursuit of excellence in performance.

Abengoa has embraced a commitment to sustainable development and to ensuring the sustainability of its products and processes, and focuses all of its energy on improvement, striving, year after year, to lead the way in **responsible management.**