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Environmental Policy and Management

Environmental Policy

Abengoa has pledged to conduct business by aligning its activities with the struggle against climate change

Abengoa is a company deeply committed to sustainable development and to conservation and care of the environment. This unrelenting commitment has led the company to redirect the strategy behind its present businesses from the perspective of sustainability, focusing future business endeavors according to these new environmental considerations.

Abengoa applies innovative solutions for sustainable development in the energy, transportation, engineering and environmental sectors. The company is heavily involved in building and operating solar thermal power plants, producing first and second-generation bioethanol in different places around the world, building and operating desalination plants for generating potable water on four continents, and recycling industrial waste in many different countries.

In addition, Abengoa has an environmental sustainability assessment and management system comprising a range of tools and integrated into the company to ensure thorough and reliable measurement of the global impact of its activity on the environment and to establish objectives for change and improvement.

Photo taken by **Flavia de Almeida**, from Abengoa Bioenergía, to the 1st Edition of the Abengoa Sustainability Photography Contest



The direction taken by Abengoa places sustainability as the cornerstone of the company's business strategy.

Abengoa is a company that is deeply committed to sustainable development and climate conservation, having integrated this commitment into its strategic approach by rethinking current business from the standpoint of sustainability, and focusing future business while taking environmental and sustainability variables into consideration.

Abengoa has a **sustainability system** in place, meaning a system with tools and mechanisms that are integrated into its profile as a technology provider pursuing solutions focused on sustainable development in order to ensure complete and reliable measurement of the total impact of its activity on the environment and to set targets for change and improvement.

Abengoa's sustainability policy is part of its business commitments in the areas of activity and installation certification and accreditation, the commitments deriving from the Global Compact of the United Nations, and those associated with good corporate governance. This means that the company's products and services must not only be geared towards sustainable development, but realized in a sustainable manner as well, and that their degree of sustainability be assured, measured and validated using transparent instruments that are recognizable to the market and society. The pursuit of sustainability is the cornerstone of Abengoa's business strategy.

Abengoa's environmental sustainability policy is being developed using two key instruments, the **greenhouse gas emissions inventory** and the **Environmental Sustainability Indicator (ESI) System**, in addition to another set of complementary initiatives.

Environmental Management

Abengoa has embraced a commitment to conducting business by aligning it with the struggle against climate change. To this end, the company applies innovative solutions for sustainability in the energy, transportation, engineering and environmental sectors. Abengoa is heavily involved in building and operating solar thermal plants, producing first and second-generation bioethanol in different places around the world, building and operating desalination plants for producing potable water on four continents, and recycling industrial waste in numerous countries. Abengoa has already incorporated sustainability indicators into its activity and evaluates its direct and indirect GHG emissions by means of a rigorous inventory. For these purposes, the company has developed groundbreaking assessment tools in this area.

Climate Change and Greenhouse Gas Emissions

Climate change is a reality, the cause of which is human activity. For this reason, the Kyoto Protocol set the target of lowering GHG emission levels by 5% by 2012, taking 1990 levels of developed countries as the basis for reference.

GHG emissions are directly related to industrial activity, with more industrialized countries being the greatest emitters. Lowering GHG emissions without having an effect on gross domestic product (GDP) requires us, among other measures, to develop clean industrial technologies, replace the use of fossil energies with renewables, and modify citizens' consumption habits. This poses a challenge, not only for governments, but for businesses and citizens alike. Agenda 21 of the United Nations has established

an operational framework for facing the challenges of the new century by integrating development with the environment.

Photo taken by
**Cristina Cuesta
Delgado**, from
Abengoa, to the
1st Edition of the
Abengoa Sustainability
Photography Contest



Businesses play a key role in combating climate change. This is synthesized in the management of clean production and the promotion of responsible undertakings, implemented through a range of actions:

- managing the knowledge of an entity's own emissions: emission accounting and assessment enabling traceability to the different inputs;
- product labeling;
- analysis of product and business life cycles, including assessments of improvement potential;
- innovation;
- by voluntarily aligning new businesses with sustainable development, a business can become a neutral emitter by purchasing carbon funds to compensate its emission balance.

In keeping with the above, Abengoa implemented a complete system for quantifying GHG emissions in 2008 by means of an internal norm that is comparable to international standards and audited by an independent and external firm.

The purpose of this inventory is to gain in-depth knowledge of the direct and indirect GHG emissions of each of the company's activities in order to assess the situation and identify paths for improvement. It also facilitates the labeling of Abengoa's products and services, identifying emissions associated with production, and the evaluation of company suppliers according to the GHG emissions generated by their productive processes. The scope of this norm covers:

- **Scope 1.** Direct emissions: the greenhouse gas emissions associated with sources that are under a company's control, including emissions from combustion in boilers, furnaces, machinery or vehicles, along with process emissions and fugitive emissions, that is emissions stemming from equipment or installation leaks.
- **Scope 2.** Indirect emissions associated with the generation of acquired electricity or thermal energy (steam, thermal oil, hot water, etc.).
- **Scope 3.** Indirect emissions associated with Abengoa's goods and services production chain.

The inventory has a twofold objective in addition to that of reporting emissions: to set quantitative and qualitative emission reduction targets in company activities and to label the products that Abengoa provides to society.

For Abengoa, the inventory is added to the measurement of the economic, social and environmental footprint of the company's activity, and constitutes yet another parameter for boosting efficiency.

The inventory is part of Abengoa's commitment to society. For Abengoa, measuring emissions and quantifying efforts to reduce them is a task linked to its businesses; a duty deriving from its business model of ensuring consistency between its undertaking to provide innovative solutions for sustainable development and its commitment to halting climate change.

Photo taken by
Jesús Zayas, from
Abener, to the
1st Edition of the
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As with the previous year, in 2009 Abengoa conducted annual emissions accounting, which was submitted to a process of external verification by an independent third party, namely PricewaterhouseCoopers.

Based on the results obtained from the emissions analyses of 2008 and 2009, Abengoa is setting emission reduction targets in all of its activities through two types of related measures: low-cost steps, which have already been implemented, and those entailing investment plans, which will become part of budget planning for subsequent fiscal years. Work is also underway to determine the different methodologies for labeling Abengoa's products and services according to the GHG emissions associated with production.

Environmental Sustainability Indicators

Combating climate change is one of the main axes to Abengoa's commitment to sustainable development; however, there are other aspects that are not directly associated with greenhouse gas emissions but which nevertheless are part of the concept of sustainability.

For this reason, Abengoa has devised an Environmental Sustainability Indicator (ESI) system, which will be launched during the first quarter of 2010 in order to contribute to enhanced business management, enabling the company to measure and compare the sustainability of its activities and to establish future improvement targets.

This system covers the following indicator groups:

- **Biodiversity:** environmental response to the installations according to the sensitivity of their local surroundings.
- **Odors:** emission of bothersome odors beyond installation sites or areas of action.
- **Noise:** level of environmental noise produced by installations and their areas of action.
- **Water discharges:** discharge management related to the environmental quality of the receiving medium, reduction thereof, lowering resulting impact and control of administrative requirements.
- **Soil and aquifers:** degree of soil contamination of the site (proprietary or rented) and potential impact on nearby aquifers.
- **Products and services:** production recyclability, meaning reuse of materials consumed; adapting products for reuse depending on their structure; raw material applied more than once in the production process and reuse of means of production and transportation.
- **Water consumption:** sustainable installation performance in terms of water consumption.
- **Energy consumption:** sustainable installation performance in terms of energy consumption.
- **Atmospheric emissions:** sustainable installation performance with respect to air quality, with the exception of CO₂ and other GHG emissions that are treated as part of the GHG reporting system.

The main objectives of the system are as follows:

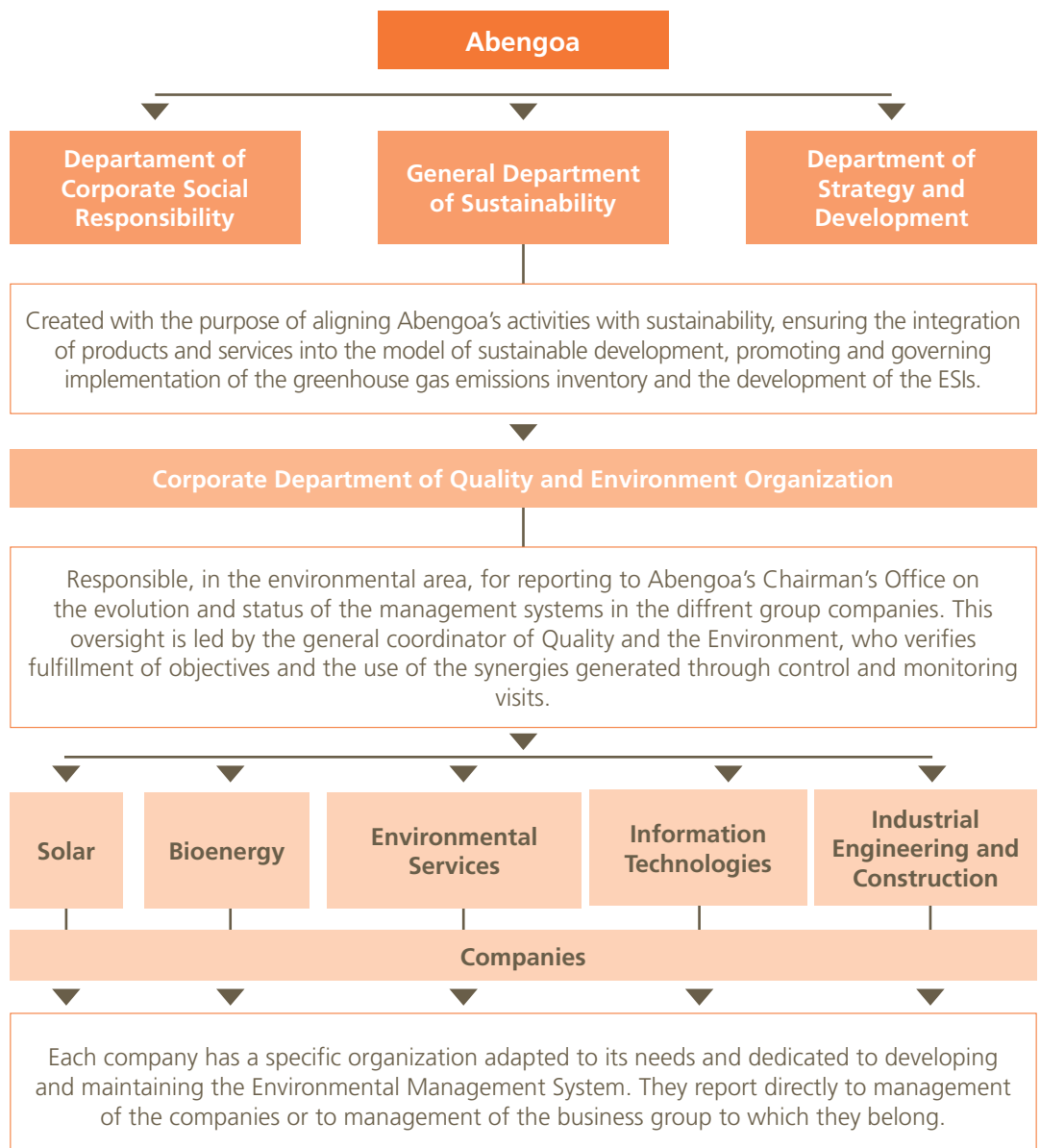
- ensure Abengoa's business;
- guarantee that the company is recognized as a business that strives to achieve sustainability by operating in a sustainable manner;

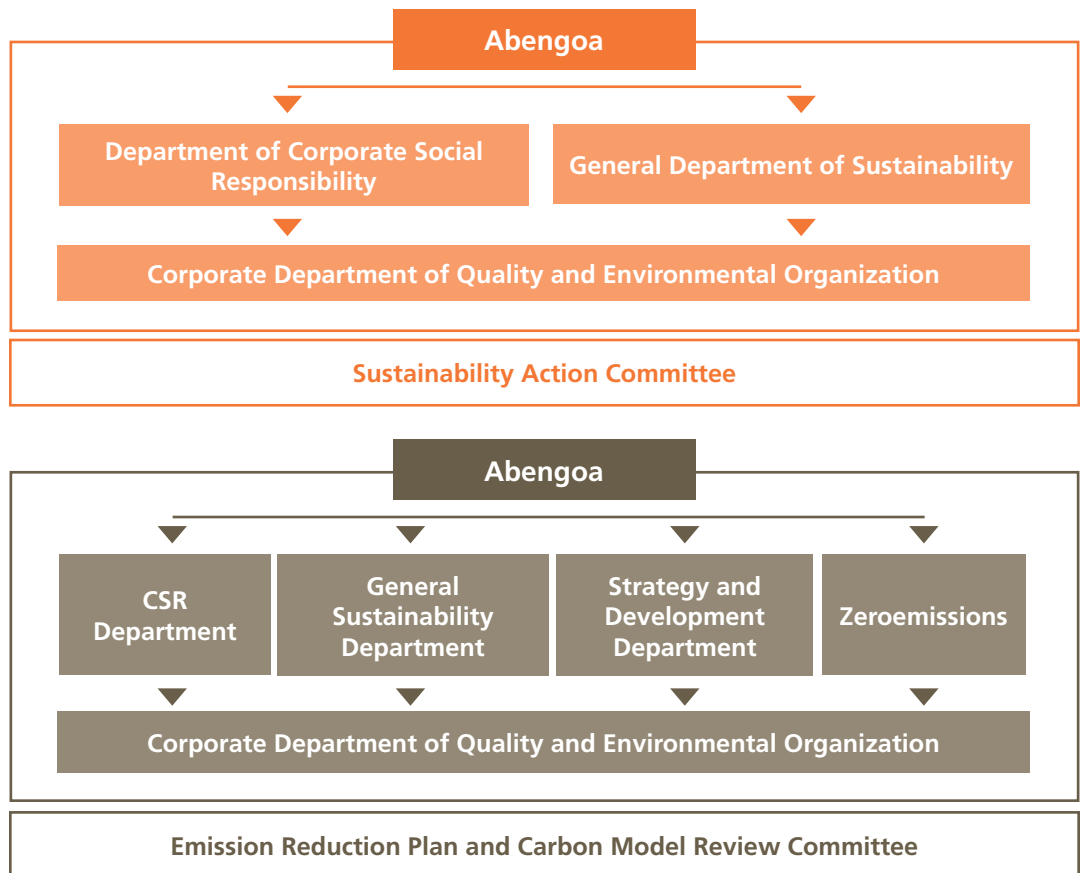
- enable persons in charge of the different companies to measure and compare the sustainability of their activities;
- and establish future improvement targets in executing activities.

The indicator system will facilitate environmental risk detection and coverage, determining aspects which have or could have significant environmental impact. It also enables planning of environmental issues required under Section 4.3.1 of the ISO 14001 standard. "The organization shall establish and maintain (a) procedure(s) to identify the environmental aspects of its activities, products, or services that it can control and over which it can be expected to have an influence".

Most importantly, the system provides companies with an integrated environmental reporting system for obtaining data on environmental impact, reporting when necessary (certification, GRI, etc.) and covering potential risks.

Organizational Structure with Regard to Environmental Sustainability





Training in Environmental Issue Management

For a complex and multifaceted organization like Abengoa to successfully meet all of its environmental targets and its commitment to sustainability, all company members must have received the right kind of training so as to ensure they are aware of the environmental impact of the activities they perform from their respective positions.

At Abengoa, training in environmental issue management is part of the group's general training process. Each company has an annual training plan, which is primarily based on Abengoa's competency-based management model, and which entails systematic assessment of its effectiveness.

In December 2009, **a course on Sustainable Development and Climate Change** was devised and will form part of Abengoa's 2010 corporate training program. The course will be offered online, in English and Spanish, for all company personnel.

Course objectives include the following:

- To analyze causes and effects of climate change on industrialized society
- To learn about Abengoa's business focus for promoting technologies aimed at sustainable development
- To foster greater personal engagement with Abengoa's policy and strategy concerning climate change

In 2009, 200 hours of in situ training were conducted, as well as 600 hours of webex courses in Spanish and English on the new GHG inventory computer application. In

addition to these attendance-based and webex courses, online training in Spanish and English is available for individuals who will be involved in the use of the new GHG application, and an online course is being developed on internal inventory norms.

Environmental Management System Certification

In accordance with its policy on environmental management and sustainable use of natural energy resources, Abengoa has established as a strategic objective for all its companies the implementation of environmental management systems in accordance with the requirements of the **ISO 14001** standard. This framework establishes a specific target: reducing the potential negative environmental impact of the products and services of each company, including the need to curb consumption of natural resources and waste and emission generation.

The environmental management systems in place at Abengoa are extremely demanding in terms of monitoring and measuring environmental impact and controlling associated operations, and therefore all activities with significant impact on the environmental aspects assessed must be covered under a measurement and monitoring plan and an operational control program.

Practically all of Abengoa's activities fall under the scope of an environmental management system in line with the ISO 14001 standard, and all significant environmental impacts are identified according to the internal procedures of each company.

In 2009, 84.96% of Abengoa's companies were certified.



Extension of the Environmental Principles to Include Suppliers

The internal norm upon which the GHG inventory is based, reflected in Abengoa's Common Management Systems, establishes the obligation to obtain emission reports from its suppliers. The norm specifies, therefore, a connection between purchasing systems and reporting of the emissions associated with goods and services acquired, which are then incorporated into the inventory.

In keeping with the obligations established under the internal regulations, all Abengoa suppliers are required to sign an Agreement to Implement a Greenhouse Gas Emissions Reporting System and the Abengoa Social Responsibility Code.

In 2009, Abengoa continued to strengthen this corporate policy on supplier relationships and has thus far signed 12,800 supplier agreements worldwide.

In the future, compatibility among supply-related emissions will enable us to optimize purchasing and lower the emissions linked to our activities.

Case Study Abengoa's Unified Information System

In tandem with the first greenhouse gas emission inventory conducted in 2008, development began on an IT application for automating Abengoa's greenhouse gas emission management and reporting.

Gradual implementation of the application was carried out throughout 2009. This application will constitute the main source of information for the company's GHG inventory, facilitating standardization of Abengoa company inventories, data consolidation and supplier comparability based on emissions levels.

The application incorporates all of the functionalities required for entering updated data and emission factors, along with computation and reporting systems configured to ensure the most suitable display structure, and data comparability, all of which will ensure a thorough and reliable inventory in accordance with the internal inventory standard integrated into Abengoa's Common Management Systems.

An external module has also been added to the application to enable Abengoa's suppliers of products and services to directly report the greenhouse gas emissions associated with the products they provide the company, which will lend a certain degree of automation when verifying the data provided.

The computer application will also permit compilation of the information linked to the GRI and ESI indicators, thereby rendering an environmental information system that is unified throughout Abengoa, thus ensuring traceability, consolidation, disclosure and transparency.

2009 Milestones

- Second annual GHG accounting with independent external verification.
- Implementation of the GHG emission inventory IT application.
- Definition and coordination of reduction plans.
- Start-up of a labeling work group to determine methodologies enabling emission allocation of Abengoa products and services, and reporting thereon to the market via GHG labeling.
- Abengoa was ratified as a component member of the FTSE4Good Ibex, the index of responsible investments managed by the global index provider FTSE Group (Financial Times Stock Exchange) in coordination with the Spanish Stock Market (BME).
- For the second year in a row, Abengoa participated in the Carbon Disclosure Project (CDP7).

Environmental Performance and Eco-Efficiency

The term eco-efficiency was first coined by the World Business Council for Sustainable Development (WBCSD) in its 1992 publication entitled "Changing Course", and is based on the concept of creating goods and services while using fewer resources and lowering their impact on the environment.

Along these lines, the Environmental Sustainability Indicator (ESI) system incorporates a set of variables for measuring the eco-efficiency of Abengoa's activities, related to the life cycle assessment of both the raw materials employed as well as the end products.

The indicators involved in developing eco-efficiency total 22 and encompass the percentage analysis of the following elements: recycled paper, recycled steel, recycled aluminum, recycled zinc, recycled copper, hazardous substances in raw materials, hazardous substances in manufacturing, renewable energy, energy/production consumption, recycled water, water/production consumption, scrap wood purchased, scrap wood utilized, recycled cardboard purchased, recycled cardboard utilized, recycled plastic purchased, recycled plastic utilized, recyclable wood, recyclable cardboard, recyclable plastic, recoverable packaging and biofuel use.

Abengoa strives to boost the eco-efficiency of its activities through life cycle assessment of its products, using accurate indicators that enable improvement target-setting to minimize production impact and enhance the recyclability of the company's products.

Abengoa's Main Environmental Indicators

The task of calculating the environmental indicators takes into account Abengoa's work centers, associated activities, and all projects promoted directly by the company, with the exception of those companies that have yet to implement an environmental management system within the Telvent business group. All other projects take into consideration the main figures deriving from our operations, excluding raw materials, consumption or waste attributable to the promoters of said projects. Likewise excluded are maintenance and operation activities conducted at customer facilities and procurement between Abengoa companies.

To illustrate the wide range of initiatives undertaken, and while not intended to be an exhaustive list, noteworthy is the application in all business units of policies to reduce paper, toner, water and office electricity consumption, in addition to waste collection for subsequent treatment or recycling.

Prime examples of activities geared towards greater control, awareness and minimization of environmental impact include environmental prevention and management, conducted through management systems, dumping and waste inspections, internal and external audits, certification by pertinent authorities, suitable employee training and the use of clean technologies.

In the Industrial Engineering and Construction group, environmental programs are carried out for the work sites, as well as reforestation in areas adjacent to projects under execution and the coordination of subcontracted transportation with the aim of adapting the type of transportation to the size and quantity of the materials to be transported.

Environmental Services takes steps to reduce waste generation, including the sale of certain projects in bulk tanks, in order to prevent the generation of container waste, reutilization and recovery of containers, etc. In order to reduce water consumption, systems for capturing rainwater and raw water supply networks have been built for process water, among other initiatives. In addition to numerous R&D projects, including the development of advanced wastewater treatment and desalination systems, Environmental Services minimizes the potential environmental impact of brine through the study of the brine dissolution and carries out desalination through renewable energies, etc.

The Bioenergy business group conducts activities such as the reuse of water from wastewater and collection of rainwater, among others.

With the aim of improving the reliability of the environmental indicators, improvements have been made to the process of compiling and aggregating data. Some figures from previous years have been rectified according to revised estimation and calculation criteria.

All of the indicators described above have been calculated on the basis of specific protocols for measurement and calculation, with the aim of standardizing application criteria.

Raw Materials

Due to the nature and sheer variety of Abengoa's activities, it is practically impossible to list each and every one of the raw materials it employs. Available data has therefore been aggregated and consolidated so as to give a real and adjusted picture of our environmental impact.

Agricultural products, including grain, sugar cane, vegetable oil and alcohol surpluses for bioethanol production, are an important group of raw materials utilized in Abengoa's activities as a whole. Gasoline blended with bioethanol (85% bioethanol and 15% gasoline) is also used to obtain E85 fuel.

Biofuel Production	2007	2008	2009
Grain (1) (t)	2,219,273	2,278,281	3,153,237
Sugar cane (t)	5,119,775	5,168,809	4,111,150
Biomass (2) (t)	5,119,775	7	1,029
Vegetable oil (t)	-	-	70,360
Alcohols (3) (m ³)	60,157	29,303	18,678
Gasoline for E85 (m ³)	-	101	553

(1) Barley, wheat, corn and sorghum

(2) Corn husks and grain straw

(3) Wine alcohol and methanol

Vegetable oil and gasoline are reported from the year in which consumption began.

A wide range of raw materials is used in the field of industrial construction, although particular importance is attached to metal products. Iron is used mainly in manufacturing metal structures for electrical power transmission lines, and zinc is used in galvanizing these structures.

We have no available data for 2007, having since reclassified our materials.

Construction Materials (t)	2007	2008	2009
Aggregates	-	117,265	559,778
Cement and concrete	-	155,726	188,224
Bricks	-	277	2,594
Insulators	-	-	622
Others	-	-	101

Metals (t)	2007	2008	2009
Iron and steel	11,090	73,608	69,222
Zinc	1,233	2,094	2,051
Aluminum	-	3,289	1,098
Copper	195	620	215
Bronze	-	50	144
Brass	-	54	107

In a group with significant activity in the field of engineering, paper has traditionally been the chosen means of conveying information. In order to reduce paper consumption, different strategies have been approached in recent years: use of recycled paper, printing on both sides of the page and, above all, the extensive use of a corporate network so that all personnel from the different companies spanning more than seventy countries around the world may exchange information.

Other Materials (t)	2007	2008	2009
Paper and cardboard	540	440	678
Recycled Paper	73	108	53
Smelting aggregates	-	42,594	24,621
Oils and fats	-	64,456	5,883
Wood	1,152	1,533	2,466
Polymers and plastics	-	788	1,635
Glass and ceramics	-	590	2,391

Consumption of recycled paper in comparison to normal paper stood at 8%.

Companies in the Environmental Services area specialize in recycling industrial waste by means of treatment, valorization and recovery, obtaining products such as plastic chippings, secondary aluminum, Waeltz oxide with a 65% zinc content, and secondary zinc. This is the area with the highest potential for recovering products sold, which in practice totals 100% in most cases.

In addition, most consumption of plastic as the raw material is derived from the recycling of the film used in greenhouse enclosures.

The following is a list of the main wastes treated:

Recycling (t)	2007	2008	2009
Steelwork and smelting dust	190,733	307,078	255,148
Waste containing zinc	317,790	311,232	217,347
Waste containing sulfur	98,559	95,612	83,000
Waste containing aluminum	104,833	182,472	81,055
Salt slag	190,733	62,078	76,055
Plastics	11,507	12,800	8,689

This area also encompasses companies dedicated to tank, centrifuge, etc. management, waste treatment and industrial cleaning. Another activity is the management of PCB-contaminated equipment, consisting of the treatment and cleaning of transformers and condensers, both solid and liquid, and the recovery of metals.

The waste in question is listed according to its classification as hazardous or non-hazardous and in terms of the treatment it undergoes.

Waste for Management and Treatment (t)	2007	2008	2009
Hazardous			
Waste for inertization treatment	258,924	304,377	128,913
Waste for hazardous waste disposal treatment	73,649	76,231	47,702
Waste for recovery-regeneration treatment	32,482	20,815	37,643
Waste for physico-chemical treatment	32,918	37,163	28,596
Waste for energy valorization treatment	50,555	34,887	20,831
Waste for evapo-condensation treatment	8,941	15,670	12,543
Waste containing PCBs	337	4,904	4,137
Waste for thermal treatment	4,886	1,546	1,209
Waste for reactant segregation treatment	721	667	513
PCB-free oil transformers	109	461	275
Sub-total	463,521	496,722	282,361
Non-Hazardous			
Waste for non-hazardous dumping	636,550	638,870	558,823
Waste for reuse/recycling treatment	21,430	24,713	18,991
Waste for physico-chemical treatment	8,270	3,255	7,835
Waste for energy valorization treatment	1,143	2,404	3,044
Waste for thermal treatment	-	-	39
Sub-total	667,393	669,243	588,730
Total (hazardous and non-hazardous)	1,130,914	1,165,965	871,091

Livestock waste, including purines, is a further type of raw material we treat.

Treatment of Waste from Agricultural Activity (t)	2007	2008	2009
Purines (1)	63,548	75,045	75,749

(1) Are a type of waste deriving from livestock farming activity

The following table lists some of the most extensively used chemical substances in the different productive processes. It should be pointed out that the number of substances is wide-ranging, with most involving non-representative quantities.

We have no available data for 2007, having since reclassified our materials.

Different Chemical Substances Used in Productive Processes	2007	2008	2009
Lime (t)	55,072	58,781	40,238
Fertilizers (t)	-	4,785	27,203
Oxygen (t)	686	24,174	13,439
Sodium hydroxide (t)	527	6,827	12,001
Sulfuric acid (t)	1,425	8,665	11,693
Sodium bicarbonate (t)	3,125	3,827	4,103
Enzymes (t)	1,892	2,297	2,811
Hydrochloric acid (t)	552	1,135	1,839
Sodium methylate (t)	-	-	1,241
Sodium hypochlorite (t)	399	540	1,190
Hydrogen peroxide (t)	-	144	1,017
Nitrogen (t)	-	825	851
Phosphoric acid (t)	-	35	612
Ammonia (t)	-	603	473
Active carbon (t)	-	545	430
Sodium bisulfite (t)	-	304	365
Ammonium hydroxide (t)	-	222	357
Other chemicals (t)	-	54,412	28,553
Other chemicals (m ³)	-	9,311	8,173

Energy

Data on the amount of electrical power consumed from the grid correspond to permanent work centers, both production sites as well as offices, and to those projects promoted directly by Abengoa.

Grid Electricity Consumption (GJ)	2007	2008	2009
Grid electricity	2,733,704	2,796,857	2,254,454

Data on electrical power consumption in 2007 and 2008 were modified due to an error in calculating units.

By applying this power consumption to the primary sources utilized for generation, in accordance with IEA data for the different countries where Abengoa operates, we can ascertain the following:

Indirect energy consumption by primary sources (GJ)	2007	2008	2009
Coal	-	1,436,579	1,178,669
Fuel oil	-	267,157	282,304
Gas	-	1,058,804	1,110,174
Biomass	-	154,560	107,487
Waste	-	41,764	32,707
Rest (1)	-	1,795,015	1,246,558
Total	-	4,753,880	3,957,898

(1) Nuclear, hydraulic, geothermal, photovoltaic, solar thermal, wind and tidal power combined

Due to changes in calculation methodology, there is no comparable data available for 2007.

In terms of direct energy consumption, the fuels consumed in the different industrial processes, such as grain dryers, smelting furnaces, machinery, etc., are listed as important elements, as well as in the production of electrical power at cogeneration plants.

Energy (GJ)	2007	2008	2009
Fossil Fuels			
Gasoline	55,804	37,111	66,227
Fuel oil	1,106,333	2,029,294	851,235
Gas	23,064,886	15,921,311	16,712,243
Other petroleum derivatives	3,272,785	5,820,449	5,305,322
Biofuels			
Bioethanol	-	12,835	8,648
Sugar cane bagasse	-	8,574,250	9,437,830
Total Energy	27,499,808	32,395,250	32,381,505

Part of the energy consumed is recovered in the form of electrical power. It should be noted that 6.4% of the production of this energy comes from solar sources.

Energy Production (GJ)	2007	2008	2009
Electricity	-	12,800,623	12,015,626
Solar origin	-	615	769,863
Steam	-	5,855,318	6,235,899

Water

According to Abengoa's information system, none of the sources used to collect water features on the Ramsar list of wetlands, or may otherwise be considered especially sensitive, nor is there any record of cases in which annual consumption accounts for 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 reusing water for activities in which potability is not a priority.

Water Capture (m ³)	2007	2008	2009
Capture Sources			
Surface water	7,306,785	10,242,367	36,132,735
Underground water	3,182,184	5,961,884	6,648,537
Rainwater	161,461	166,210	162,506
Third-party supplied water	5,169,122	5,276,099	42,943,778

The increase in surface water capture over 2009 can be put down to the operation of the desalination plant in Skikda (Algeria), where seawater is captured to generate desalinated water.

Discharges and Spills

Companies that negatively alter the state of the water they utilize due to the nature of their business activities must implement suitable water treatment processes, thereby ensuring that final quality falling within the limits prescribed by applicable law prior to discharge into a public watercourse.

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

Discharges (m ³)	2007	2008	2009
Discharges to sewage networks	1,024,015	978,804	827,055
Discharges to internal treatment facilities	-	56,955	3,868
Discharges to surface water bodies	3,736,954	5,275,438	5,374,111
Soil infiltration discharges	4,786	8,774	4,438
Dispersed or non-defined land discharges	-	3,382,376	4,509,987
Discharges to external treatment facilities	-	257,285	420,340

In the last three years, accidental spills from Abengoa's activity as recorded through the information channels were irrelevant in terms of magnitude and impact.

Below is a list of spills that occurred in 2009.

Discharges (m ³)				
Substances spilled accidentally with significant impact	Date of Spill	Total Volume (m ³)	Spill Description	Other Comments
Biodiesel+water	07/04/2009	10,00	Tank overflow	Collected using a 10-m ³ tank
Biodiesel+water	15/04/2009	10,00	Tank overflow	Collected using a 10-m ³ tank
Biodiesel+water	20/08/2009	8,00	Tank overflow	Collected using a 10-m ³ tank
Biodiesel+water	12/12/2009	5,00	Biodiesel storage overflow	Use of tank unnecessary

No water resources or habitats affected by the company's activity were identified through Abengoa's information system.

Waste

In 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. The following table depicts the most significant based on volume.

The waste treated by the Environmental Services business group included in the section on raw materials above is not included here.

Non-Hazardous Waste (t)	2007	2008	2009	Treatment
Paper and Cardboard	608	539	327	Recycling
Scrap Metal	50,855	14,936	10,394	Recycling
Plastics	1,081	1,126	115	Recycling/valorization/dumping site
Wood	681	4,853	1,255	Valorization/dumping site
Rubble	25,421	30,763	11,390	Dumping site
Surplus Soil and Topsoil	580,792	58,989	37,390	Valorization/dumping site
Rejected DDGS-pre-clean dust	5,307	1,907	10,591	Valorization
Urban Waste	2,889	1,577	5,773	Valorization/dumping site
Dirt from Washing Plastic	-	426	957	Dumping site
Salt	-	5,750	7,198	Dumping site

Hazardous Waste (t)	2007	2008	2009	Treatment
Slag	271,690	269,672	187,270	Dumping site
Aluminum Slag	2,700	2,002	1,000	Recycling
Liquids Containing PCBs	943	1,245	965	Valorization/ inertization
PCB-contaminated Solids	305	218	239	Valorization/ inertization
Contaminated Hazardous Waste	2,445	4,298	3,174	Valorization/ dumping site
Oils	573	163	356	Valorization/ dumping site
Filter Dust	34,231	16,792	4,610	Valorization/ dumping site
Sludge	19,103	10,060	12,307	Valorization/ dumping site
Lixiviates	9,372	15,997	11,296	Valorization
Other Waste	1,426	3,212	2,442	Valorization

Data from 2008 was updated according to the new interpretation criteria established under the protocol.

In accordance with our Environmental Management Policy, all companies that generate hazardous waste conduct an exhaustive process to identify and monitor these types of waste and their quantities in all operations involving transportation to the authorized waste managers, whether they belong to Abengoa or to outside companies.

Hazardous Waste transported by Abengoa or under the Direction of Abengoa (t)

	Europe	America	Total
Waste transported from other organizations external to Abengoa (companies dedicated to waste management) (all within the same country)	517,756	81,244	598,999
Waste transported from other Abengoa facilities (companies dedicated to waste management) (all within the same country)	15,444	3,386	18,830
Waste transported to other facilities external to Abengoa (all within the same country)	18,570	15,989	34,558
Waste transported to other Abengoa facilities (all within the same country)	28,802	1,106	29,908

There are also companies which, due to the nature of the equipment they produce (electrical and electronic), adhere to integrated waste recovery systems in order to ensure proper recovery and valorization of their equipment at the end of its useful life. Telvent GIT has an agreement in effect with the ECOTIC Foundation on behalf of Telvent Traffic and Transportation and Telvent Energy and Telvent Environment.

Climate Change and Other Emissions into the Atmosphere

Greenhouse gas emissions stem from the use of fossil fuels and no meaningful reduction in GHG emissions will be possible without changing the energy model that gives rise to them

Climate change is undoubtedly the greatest challenge facing humanity for the coming years. It is already causing physical changes and the consequences are affecting productive systems, resource availability and the social balance of the planet. Climate change therefore affects the security and viability of human society.

There is therefore a clear need to take steps to reduce GHG emissions, with a view to maintaining GHG atmospheric concentration at levels which, while still producing inevitable climate changes on Earth, keep these changes at levels that are compatible with today's living conditions.

Thus, one of the conclusions of the UN Climate Change Conference held in Copenhagen last December is the need to maintain the Earth's rise in temperature at below 2°C.

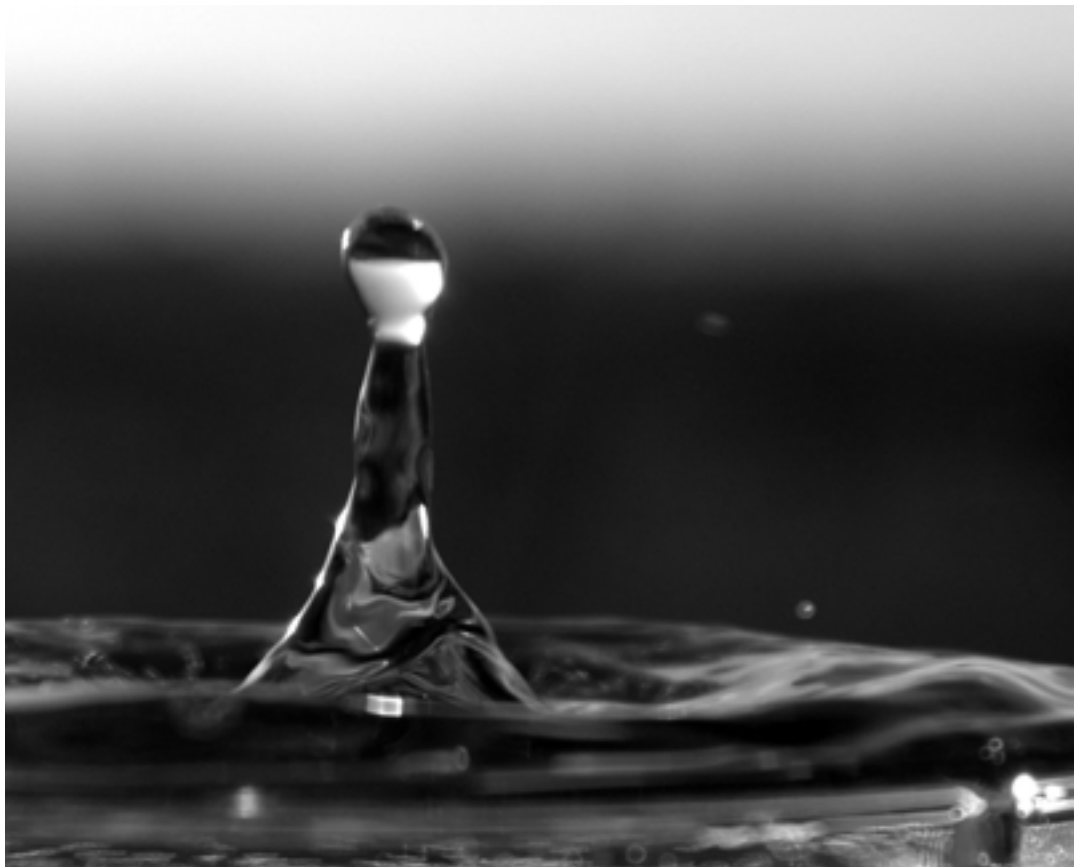


Photo taken by **Manuel Javier Vázquez**, from Telvent, to the 1st Edition of the Abengoa Sustainability Photography Contest

The problem affects the entire world and requires global solutions. It is not enough for one country to lower its emissions, but rather all nations worldwide must make a concerted effort to control and reduce their emissions. It is essential that decisions be made at a global level to enable economic development in the coming years in concert with a global reduction in greenhouse gas emissions. In short, the decision-making process must enable sustainable development.

In this area, the role of governments across the world is twofold; on the one hand, it requires them to have the capacity to reach international agreements to enable a GHG emission reduction that is gradual, balanced and fair, given that levels vary significantly from country to country. It is essential that countries with higher standards of living and which therefore generate more emissions be the ones to undertake greater reduction levels. It also demands that those that are furthest behind tread a different path towards development, carefully avoiding the profit and convenience-oriented paths followed in the past.

On the other hand, the world's governments must promote, each within their own countries, a legal framework leading to the corresponding emissions reduction. This necessitates assessment of the GHG emissions generated by citizens and businesses and internalization of the negative effects of these emissions into the costs of the different products and services. Current systems of emission rights trading are but a fledgling mechanism in this direction, which requires a profound change in order for it to be effective.

Greenhouse gas emissions stem from the use of fossil fuels and no meaningful reduction in GHG emissions will be possible without changing the energy model that gives rise to them. Maintaining the present model, which is based on more than 80% of the energy consumed in the world being of fossil origin, is simply incompatible with halting climate change.

Renewable energies must play a key role in this new model. Solar and wind power and biofuels represent a viable alternative that is already available commercially today. Hydrogen as an energy vector could also play a significant role in the medium term.



Solar radiation cast down onto the Earth is on the order of ten thousand times our current energy consumption. Solar radiation is thus a source that can meet our needs even if we are only able to capture just a minimal proportion. At present, the costs of producing photovoltaic and solar thermal-based electrical power are nearing those of fossil fuel production. Widespread development and deployment of this kind of energy coupled with internalization of emissions costs associated with fossil energies would make it both environmentally and economically profitable almost instantly with respect to fossil fuels. Solar thermal energy also enables thermal storage systems, which make it easier to manage integration into the power grid.

Wind power, in turn, also represents an energy source which in a limited but significant way may contribute to a totally or fundamentally renewable mix.

In the transportation sector, the cause of approximately a quarter of all GHG emissions, energy sources must be transportable. The use of batteries poses significant limitations to autonomy, features and prices. In this field, biofuels are a currently available solution allowing hybrid cars or vehicles with a conventional internal combustion engine to reduce their emissions quite significantly. In the case of automobiles running on E85 (85% bioethanol, 15% gasoline) of average environmental quality, emission reduction would be more substantial than for electric cars with the same power output running on the European electrical mix. The use of biofuels enables us to maintain all of the features of today's vehicles, while maintaining their autonomy, and they do not require any significant modification to the current supply network or any increase in vehicle cost. Flexi-fuel vehicles that run on biofuel, as well as biofuels that enable a GHG reduction of between 35% and 50%, are commercialized today in different parts of the world. More widespread use of second-generation lignocellulosic biofuels, currently at the demonstration plant stage, will lead to an even greater reduction in the GHG emissions produced by transportation.



The change in the energy model is not only necessary, but represents a tremendous opportunity for taking the leap towards economic development by generating wealth and employment in a way that is environmentally and socially sustainable. This new model will lead not only to development, but to energy independence and security in the Western world.

The GHG emissions inventory conducted in 2009 by all of Abengoa's companies and Business groups constitutes a complete overview of the company's activities and commitment to preserving our climate.

Emissions

Calculation of greenhouse gas (GHG) emissions takes into account the direct emissions of all sources that are owned by Abengoa (combustion, process, transportation and fugitive emissions), indirect emissions from acquired electrical power, thermal energy and steam and the indirect emissions resulting from work-related travel, 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. Likewise, the emissions involved in biomass combustion and processing are reported separately.

Emissions were calculated on the basis of the IPCC and GHG Protocol methodologies, using, whenever possible, specific fuel emission factors; in other cases, national GHG inventory values of the countries in which our activities are carried out, and, as a last resort, generic figures published by the IPCC.

Greenhouse Gas Emissions (t CO ₂ equivalents)	2007	2008	2009
Direct Emissions	1,452,014	1,659,422	1,352,951
Direct Emissions from Biomass (1)	-	1,280,132	1,843,259
Indirect Emissions (2)	493,142	422,921	392,363
Other Indirect missions (3)	-	197,461	113,243
Total Emissions	1,945,155	3,559,936	3,701,816

(1) According to the standard of the Corporate GHG Protocol

(2) Including emissions from acquired electrical, thermal and steam energy

(3) Including emissions associated with work-related travel, work commutes, losses in the transmission of electrical power and emissions in the value chain of fuels consumed for the generation of acquired electrical power

The rise in emissions in 2008 can be put down to the increased number of companies included within the scope of consolidation and the implementation of emissions calculation methodologies.

For Abengoa, the greenhouse gas emissions inventory is a complete and mature instrument for ensuring responsibility with respect to climate change.

With respect to other techniques for footprint analysis of local scope, complete accounting of emissions commits all Abengoa companies, in all territories, to integrating the supply value chain into the process of calculating emissions.

Emission measurement through the inventory of Abengoa has comparative advantages over other instruments: it is thorough, both in terms of its scope of consolidation and other 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.

Initiatives aimed at lowering GHG emissions*			
Initiative	Brief description of the initiative upon which the case study is based	Description of the method for determining consumption using the measure adopted	Reductions achieved (t CO ₂)
Reduce fuel consumption in irrigation water transfer (from subterranean wells in Chilca) through access channel improvement	A paved segment was put in place using calcium chloride (600 m), thereby reducing water consumption by 20%	A paved segment was put in place using Calcium Chloride (600 m), thereby reducing water consumption by 20%	0.13
Substitution of 33 diesel-fuelled vehicles for vehicles running on E85 (85% ethanol-15% gasoline)	Progressive replacement of the vehicle fleet with bioethanol (E85)-powered vehicles	Emissions comparison for 434,791 km in E85 vehicles vs. diesel vehicles	49.35
Reduction in emissions associated with business-related travel	Reduction of emissions due to work-related travel by means of encouraging videoconferences and webex for committee meetings and remote meetings	Estimation of emissions prevented for each webex session	131

* Examples of reduction initiatives.

There was no record in 2007 and 2008 via the Abengoa information channels of significant emissions of ozone layer-depleting substances deriving from company activity over the last three years.

Emissions recorded in 2009 are listed below.

Ozone Layer-Depleting Substances (kg)	2007	2008	2009
HCFC-22	-	-	444
HCFC-32 / HCFC-125	-	-	28

NOx, SOx and other Atmospheric Emissions (t)	2007	2008	2009
CO	17,488	38,206	28,840
VOCs	855	5,756	4,682
NOx	6,248	20,796	8,668
SOx	562	782	333
Particles	4,298	7,247	2,962

Diversity Management

Biodiversity

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

Photo taken by **José Avilés**, from Telvent, to the 1st Edition of the Abengoa Sustainability Photography Contest



Always bearing this in mind, environmental impact studies and monitoring tasks were carried out on the activities conducted on land adjacent to or within protected areas (Table 1). Furthermore, affected species were identified and the resulting impacts measured and assessed (Tables II and III).

Preserving these habitats requires an objective that encompasses recovery plans and reforestation, strategies geared towards protecting plant and animal species, training in forest fire prevention, etc. (Tables IV and V).

Land located adjacent to or within protected or high-biodiversity areas (Table I)						
Protected or highly biodiverse areas affected by installations	Geographical location of the installation	Location of the installation with respect to the protected area	Protection aspect	Type of area affected	Installation area (km ²)	Area of the installation included within the protected or high-biodiversity area (km ²)
Bargoa Camorim located adjacent to the "Pedra Branca State Park"	Camorim Highway, 633. Geographical coordinates of the well: 7,458.886 mS / 661.941 mE	Adjacent to	Subsurface layers of fresh water	Indicate data source	0.01	0.00
Mata do Godoy State Park (675.7 ha)	Londrina - Araraquara TL	Adjacent to, at 4.9 km	Partial Protection	Combination of various types	21.76	n/a
Éguas Paradas Municipal Protected Area (1,803 ha)	Londrina - Araraquara TL	Intersected by the TL	Sustainable Use	Combination of various types	21.76	0.33
Rio Batalha Municipal Protected Area (3,168 ha)	Londrina - Araraquara TL	Adjacent to, at 1.4 km	Sustainable Use	Combination of various types	21.76	n/a
Sebastião Aleixo da Silva Ecological Station (287.98 ha)	Londrina - Araraquara TL	Adjacent to, at 2.3 km	Global Protection	Combination of various types	21.76	n/a
Fazenda Limeira Nature Reserve (800 ha)	Itacaiúnas - Colinas TL	Adjacent to, at 0.35 km	Sustainable Use	Combination of various types	19.76	n/a
Fazenda e Castanhal Sororó Nature Reserve (100 ha)	Itacaiúnas - Colinas TL	Adjacent to, at 1.5 km	Sustainable Use	Combination of various types	19.76	n/a
Carajás National Forest (ID: 198,360) - (411,948 ha)	Marabá - Carajás TL	Adjacent to, at 5.5 km	Sustainable Use	Combination of various types	2.04	n/a
Rio Passaúna Protected Area (ID: 351,891) - (15,478.34 ha)	Curitiba - Bateias TL	Intersected by the TL	Sustainable Use	Combination of various types	2.22	0.27
Rio Verde Protected Area (ID: 351,894) - (14,756 ha)	Curitiba - Bateias TL	Intersected by the TL	Sustainable Use	Combination of various types	2.22	0.48
Escarpa Devoniana Protected Area (ID: 351879) - (415,595.03 ha)	Itararé - Jaguariaíva TL	Intersected by the TL	Sustainable Use	Combination of various types	1.72	0.6
Iguaçu National Park (185,262.2 ha)	Foz do Iguaçu - Cascavél TL	Intersected by the TL	Global Protection	Combination of various types	4.67	0.98
Rainwater Basin Wetlands - approximately 30 acres	Nebraska	Adjacent to		Indicate data source	0.38	0.00
Capture - ABSL 1	UTM X - 258861.73; Y - 7574370.45	UTM X - 258861.73; Y - 7574370.45	Department of the Environment		0.01	0.01
Capture - ABSL 2	UTM X - 260735.25; Y - 7577572.04	UTM X - 260735.25; Y - 7577572.04	Department of the Environment		0.03	0.03
Capture - ABSJ	UTM X - 301035.80; Y - 7574429.00	UTM X - 301035.80; Y - 7574429.00	Department of the Environment		0.00	0.00
Cane cultivation areas (Pirassununga)	Pirassununga	Cane cultivation area within permanent protection areas	Department of the Environment		296.63	37.75

Most significant impacts on biodiversity in protected or high-biodiversity areas (Table II)					
Protected or highly biodiverse areas affected by installations	Critically endangered (CR)	Endangered (EN)	Vulnerable (VU)	Near threatened (NT)	Least concern (LC)
Otis Tarda (Avutarda)			X		
Leontopithecus chrysopygus		X			
Aniba rosaeodora		X			
Leopardus tigrinus			X		
Caryocar coriaceum		X			
Ocotea puberula					X
Cedrela fissilis		X			
Ilex paraguariensis					X
Araucaria angustifolia	X				
Tinamus solitarius				X	
Accipiter poliogaster					X
Harpyhaliaetus coronatus		X			
Amazona vinacea		X			
Biatas nigropectus			X		
Culicivora caudacuta			X		
Piprites pileata			X		
Anthus nattereri			X		
Sporophila melanogaster				X	

Most significant impacts on biodiversity in protected or high-biodiversity areas (Table III)

Protected or highly biodiverse areas affected by installations	Type of impact generated	Other impact generated	Impact assessment in terms of protecting affected species	Partial assessment	Evaluation in terms of the size of the area affected	Partial assessment	Evaluation in terms of impact duration	Partial assessment	Evaluation in terms of reversibility	Final assessment
Use of aquifer water permitted totals 5.0 m ³ /h, and we used the following during the period of January-December, 2009: 2.53 m ³ /h, in other words, practically half of the amount allowed.	Reduction in the water level		Measurement	We have a well output flow meter	In 2009, average consumption totaled 2.53 m ³ /h (but we have only taken 8.8 hours/day into consideration. In previous years the total was 17.6 hours/day), as compared to consumption of 0.90 m ³ /h in 2008, and 1.2 m ³ /h in 2007.	We are gradually utilizing rainwater capture, which reduces use of water from this well.	Limited duration	Low	Naturally reversible	Low
Matã do Godoy State Park (675.7 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	No affected area	Low	Limited duration	Low	Naturally reversible	Medium
Êguas Paradas Municipal APA (1,803 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	Above 10,000 m ²	High	Limited duration	Low	Naturally reversible	High
Rio Batalha Municipal Protected Area (3,168 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	No affected area	Low	Limited duration	Low	Naturally reversible	Medium
Sebastião Aleixo da Silva Ecological Station (287.98 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	No affected area	Low	Limited duration	Low	Naturally reversible	Medium
Fazenda Limeira Nature Reserve (800 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	No affected area	Low	Limited duration	Low	Naturally reversible	Medium
Fazenda e Casarão SororQ Nature Reserve (100 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	No affected area	Low	Limited duration	Low	Naturally reversible	Medium
Carajás National Forest (ID: 198360) - (411948 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	No affected area	Low	Limited duration	Low	Naturally reversible	Medium
Rio Passaúna Protected Area (ID: 351891) - (15,478.34 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	Above 10,000 m ²	High	Limited duration	Low	Naturally reversible	High
Rio Verde Protected Area (ID: 351894) - (14,756 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	Above 10,000 m ²	High	Limited duration	Low	Naturally reversible	High
Escarpa Devoniana Protected Area (ID: 351879) - (415595.03 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	Above 10,000 m ²	High	Limited duration	Low	Naturally reversible	High
Iguaçu National Park (185,262.2 ha)	Changes in ecological processes	n/a	Species included in IUCN lists	Low	Above 10,000 m ²	High	Limited duration	Low	Naturally reversible	High
Capture - ABSL 1	Transformation of habitats	-			Below 10,000 m ²	High	Permanent	Medium	Reversible with measures	High
Capture - ABSL 2	Transformation of habitats	-			Below 10,000 m ²	High	Permanent	Medium	Reversible with measures	High
Capture - ABSJ	Transformation of habitats	-			Below 10,000 m ²	High	Permanent	Medium	Reversible with measures	High
Cane cultivation areas (Prassununga)	Transformation of habitats	-			Below 10,000 m ²	High	Limited duration	Medium	Reversible with measures	High

Strategies and initiatives implemented and planned for managing impact on biodiversity (Table IV)

Protected or highly biodiverse areas affected by installations	Assessment of impact on biodiversity	Areas included under a restoration plan	If necessary, clarification on measurement, computation or estimation process	Pertinent notes regarding scope
Bargoa Camorim situado junto a "Parque Estadual Pedra Branca"	Low	No	Rainwater capture raptation to mitigate the reduction of the water table	Rainwater capture raptation in recent construction works
Mata do Godoy State Park (675.7 ha)	Medium	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Águas Paradas Municipal Protected Area (1803 ha)	High	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Rio Batalha Municipal Protected Area (3168 ha)	Medium	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Sebastião Aleixo da Silva Ecological Station (287.98 ha)	Medium	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Fazenda Limeira Nature Reserve (800 ha)	Medium	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Fazenda e Castanhal Sororó Nature Reserve (100 ha)	Medium	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Carajás National Forest (ID: 198,360)(411,948 ha)	Medium	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Rio Passaúna Protected Area (ID: 351,891) - (15,478.34 ha)	High	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Rio Verde Protected Area (ID: 351,894) - (14,756 ha)	High	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Escarpa Devoniana Protected Area (ID: 351,879) - (415,595.03 ha)	High	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Iguaçu National Park (185,262.2 ha)	High	Reforestation of 100% of the area		Abengoa Brazil and its conglomerates (UN Construção and UN Concessão)
Cane cultivation areas (Pirassununga)	High	APP deviation	APP deviation	GIS-based estimation of potential areas of encroachment into Permanent Preservation Areas. Field assessments are needed for confirmation.

Protected or restored habitats (Table V)							
Areas where restoration or protection efforts are being conducted	Area affected by the activity during the year (km2)	Area included under the restoration plans	% of the area in which recovery or maintaining the original state has been achieved	% of the area in which a functional ecosystem has been achieved (while not the original state)	% of the area in which none of the previous objectives have been achieved	Company in charge of implementing measures	Pertinent notes regarding scope
Águas Paradas Municipal Protected Area (1803 ha)	0.33	0.33	0%	100%	0%	ATE Transmissora de Energia S.A.	
Rio Passaúna Protected Area (ID: 351891) - (15,478.34 ha)	0.27	0.27	0%	100%	0%	ATE IV - São Mateus Transmissora de Energia de Energia S.A.	
Rio Verde Protected Area (ID: 351894) - (14,756 ha)	0.48	0.48	0%	100%	0%	ATE IV - São Mateus Transmissora de Energia de Energia S.A.	
Escarpa Devoniana Protected Area (ID: 351879) - (415595.03 ha)	0.6	0.6	0%	100%	0%	ATE V - Londrina Transmissora de Energia S.A.	
Iguaçu National Park (185,262.2 ha)	0.98	0.98	0%	100%	0%	ATE VII - Foz do Iguaçu Transmissora de Energia S.A.	
The facility property includes protected wetlands - approximately 30 acres.	0.12	0.0	0%	0%	0%	External	ABC-York utilizes the "Comprehensive Conservation Plan and Environmental Assessment" manual in regards to maintaining our rainwater basin wetland area.
Cane cultivation areas (Pirassununga)	2.64	2.64	0%	44.60	0%	Abengoa	GIS-based estimation of potential areas of encroachment into Permanent Preservation Areas, calculated at the time of cane cutting and deducted from the initial nº of Permanent Preservation Areas encroached upon.

Abengoa is fully aware of how important it is for its activities to contribute positively to maintaining biodiversity, while minimizing impact and establishing a positive correlation between the habitats and the flora and fauna that are most sensitive to human activity. The system incorporates the following indicators into the biodiversity factor:

The first environmental factor analyzed within the ESI system is biodiversity.

1.1. Sensitivity of the environment

The potential impact of pressure exerted on the environment, based on the environmental quality of the areas surrounding installation sites.

1.2. Installations in protected areas

Awareness of the environmental sensitivity of the installation's surroundings enables specific scaling of the environmental policies for the installations.

1.3. Formal complaints and claims

1.4. Confirmed sanctions

Indicators associated with complaints, claims and sanctions determine the evolution of business activities in terms of their acceptability and conformity with the environment and the capability to respond to social sensitivity processes and instrumental activity in relation to biodiversity.

1.5. Environmental management systems

1.6. Environmental measures

1.7. Environmental protection expenditure

These indicators are directly related to the company's commitment to analyzing the evolution of the biodiversity factor and to integrating environmental and social values into its costs structure.

Environmental Compliance

In 2009, two environmental incidents occurred in Spain involving resolution through payment of fines totaling 120,000€. Abengoa has no knowledge of any other incidents.