Abengoa and the Environment

ABENGOA

Sustainable Development

In 1987, the UN-created Brundtland Commission, headed by the Swiss Gro Harlem Brundtland, published a document entitled "Our Common Future" following four years of study. The document contains the first recognised use of the term "sustainable development", understood to mean: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable development is, according to the Brundtland Report, a process of change in which the exploitation of resources, investment management, and the orientation of technological and institutional change are in harmony, thereby increasing current and future potential to address human needs and aspirations. This means that human development must take place in a way that proves compatible with the ecological processes that sustain the natural functioning of the biosphere.

Available natural resources on our planet are limited, meaning excessive consumption or irresponsible use thereof can give rise to unsustainable development. It therefore goes without saying that a new global focus for our society and local action involving the environment is of paramount importance. The business community, as an essential element of our social fabric, must contribute by providing innovative solutions that will help us to face the challenge of sustainable development.

In 2007, over 3,000 scientists from one hundred different countries belonging to the Intergovernmental Panel on Climate Change (IPCC) came to the conclusion that global warming due to greenhouse gas (GHG) emissions and their causes are a reality. Another of the most relevant studies, namely the Stern Report, commissioned by the British government and drafted by the eminent economist Nicholas Stern, concludes that an investment of approximately 1% of world GDP is needed in order to mitigate the effects of climate change, and that failure to do so would expose the world to the risk of a recession that could reach 20% of global GDP.

Abengoa, committed from its inception to sustainable development and the struggle against climate change, integrates into the attainment of its business goals a policy geared not only towards its own products and services contributing to sustainable development, but also towards ensuring that such products and services are obtained in a sustainable manner, thus contributing to economic progress and social equity while helping to protect the environment.

Abengoa and its contribution to environmental sustainability

Our current energy model is showing clear signs of depletion: experts predict that oil production will peak in approximately the year 2015. Therefore, it would seem that we need to come up with an alternative energy model based on clean, non-polluting energy sources that will meet our energy needs.

Rising energy consumption and the increase in the transportation sector have made CO_2 emissions one of today's most pressing problems, and one that must be tackled, given that these emissions are the chief cause of global warming. In 2007, CO_2 emissions exceeded 4 t annually, and it is anticipated that in 2030, they will surpass 8.5G[1]. The environmental fallout is already devastating.

Against this backdrop of environmental decay, Abengoa offers society clean and renewable energies, along with mechanisms for energy savings and efficiency:

- Abengoa Solar produces electrical energy from the Sun through thermoelectric and photovoltaic technologies.
- Abengoa Bioenergy produces biofuels and livestock feed from biomass.
- Befesa produces new materials by recycling them from waste, and treats and desalinates water.

(1) Giga (G): prefix of the international system of units that indicates a 10^9 factor or 1,000,000

- Telvent manages operational and business processes securely and efficiently using information technologies.
- Abeinsa builds and operates both conventional and renewable electrical power stations, power transmission systems and industrial infrastructures through engineering.

Within this context of change dominated by market societies, the innovative company represents an efficient and necessary instrument along the road to sustainable development. Abengoa promotes innovation as the key to its future development because it believes that research, development and technological innovation are the necessary tools for creating new ways of interacting with the world and replacing obsolete production processes, all thanks to the world-shaping power of innovation. Therefore, all efforts in innovation are focused on producing energy from renewable sources:

- More efficient production of solar-based energy, enabling us to replace conventional sources for renewable ones, and development of energy storage technologies.
- Production of more advanced biofuels to replace traditional fossil fuels, thereby reducing the environmental impact.
- Creation of new systems for producing hydrogen from renewable sources and mechanisms for efficient storage.
- Implementation of improvements in energy efficiency and CO_2 capture.
- Promotion, development and commercialization of carbon credits; strategic carbon consulting; voluntary emissions compensation; and innovation of technology for reducing greenhouse gases.
- Improvement in the efficiency of industrial waste management.
- Creation of new solutions spanning the entire water cycle.
- Quantification of the impact of our activities on the environment.

Promoting and implementing these energy-producing technologies based on renewable sources, energy efficiency and CO_2 storage form part of a new economy of sustainable development and will help to curb greenhouse gas emissions. The process also entails decentralizing traditional sources, releasing governments from the usual geopolitical pecking order imposed on them by the owners of these energy sources, which are closely pegged to prevailing causes of insecurity and supply shortages.

Management of environmental sustainability

Abengoa, as a responsible technological company committed to society and the environment, seeks to ascertain the impact of its activity on the environment. With this goal in mind, the company initiated a system for reporting greenhouse gas (GHG) emissions in 2008. In 2009, it will likewise develop a reporting system for environmental sustainability indicators. The combination of both initiatives affords Abengoa a position of world leadership in sustainability management.

Climate change and greenhouse gas emissions

Climate change is an undeniable scientific fact and its cause is human activity. Thus, the Kyoto Protocol set the target of attaining a 5% reduction in greenhouse gas emissions by 2012, with respect to the levels of developed countries in 1990.

GHG emissions are related to the industrial activities of each country. This is the reason why more industrialized countries have the highest levels of GHG emissions. In order to lower emissions without affecting GDP, it is necessary, among other things, to develop clean industrial technologies, replace consumption of fossil energies with renewables, and modify citizens' consumption habits. This poses a challenge, not only for governments, but for businesses and citizens as well. Agenda21 of the United Nations sets forth the framework for action in order to meet the challenges of the new century through the integration of development and the environment.

The role of the business community in the struggle against climate change encompasses managing clean production and promoting responsible business, which can take the following forms:

- Managing knowledge of one's own emissions: emissions reporting and balance sheet, tracing the different inputs.
- Plan for reducing and minimizing these emissions, as well as the raw materials and inputs employed, and waste and discharges, all achieved through proper management thereof.
- Labeling products.
- Assessing the life cycles of products and businesses, including assessments on potential for improvement.
- Innovation.
- Aligning new businesses with sustainable development.
- A company can voluntarily become a neutral emitter by purchasing carbon funds to offset its emission balance.

In line with the foregoing, Abengoa has created an inventory of its greenhouse gas emissions in order to gain in-depth knowledge of the direct and indirect GHG emissions created by each of the company's lines of business, and to appraise the situation and identify possible improvements. In addition, this inventory will enable Abengoa to

label its products and services after identifying the GHG emissions associated with the production of each product or service, and to evaluate its suppliers based on the GHGs they emit in order to produce the products and services acquired by the company.

The scope of the initiative encompasses the following:

- Scope 1. Direct emissions: these are the greenhouse gas emissions associated with sources that are under a company's control, such as emissions from combustion in boilers, furnaces, machinery or vehicles; process emissions and fugitive emissions from equipment or installation.
- 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.

Environmental sustainability indicators

Even though the fight against climate change is one of the cornerstones of Abengoa's commitment to sustainability, there are numerous other aspects that are not directly related to greenhouse gas emissions, but which are

also important for the company in terms of sustainability. Along these lines, Abengoa is designing a system of environmental sustainability indicators that will aid in improving business management, enabling the company to quantify and compare the sustainability of its activities and set future goals for improvement.

The indicator categories covered under the system are the following:

- Biodiversity: environmental response of the facilities based on the sensitivity of their surrounding environment.
- Odors: emission of bothersome odors by Abengoa beyond its premises or areas of activity.
- Noise: level of ambient noise produced by Abengoa's facilities and areas of activity.
- Water discharges: discharge management in terms of the environmental quality of the receiving environment, reduction thereof and lowering the impact, including control of administrative requirements.
- Soil and aquifers: degree of contamination of the soil at the location (owned or leased) and the potential impact on nearby aquifers.
- Products and services: recyclability of Abengoa's production, that is, making use of the materials we consume; adapting products to be used again depending on their structure; applying raw materials more than once during production, and reuse of production and transportation resources.
- Water consumption: sustainable performance of facilities in terms of water consumption.
- Energy consumption: sustainable performance of facilities in terms of energy consumption.
- Atmospheric emissions: sustainable performance of facilities in terms of air quality, with the exception of CO_2 and other GHG emissions, which are dealt with as part of the GHG reporting system.

Organizational structure

Each Abengoa company has the power to structure and organize itself according to its needs, with the Management being responsible for determining the resources required to uphold the company's commitment to environmental sustainability.

As an instrument for fulfilling this commitment, each company has a specific organization suited to its needs and dedicated to the development and maintenance of the Environmental Management System. These organizations answer directly to the Management teams of the company involved, or to Management of the Business Unit to which they belong. In all cases, the organization is made up of fully skilled and suitably qualified professionals with the required academic and vocational background in their chosen field.

Similarly, companies involved in Industrial Engineering and Construction have a decentralized structure carrying out activities at the work or project site, at their permanent office (Regional Office or Department) and also at their headquarters, the latter of which reports to General Management.

On a corporate level, the company has a General Secretary's Office for Sustainability Management, which was established in January 2008 and reports directly to Abengoa's Chairmanship, and also a Corporate Department for Organization, Quality and the Environment.

The objective of the General Secretary's Office for Sustainability Management is to gear Abengoa's activities toward sustainability, ensuring the integration of products and services into the model of sustainable development. The Secretary's Office promotes and manages implementation of the greenhouse gas emission inventory and the development of indicator systems for evaluating and improving the alignment of Abengoa's activities with sustainability.

For environmental matters, the Corporate department for Organization, Quality and the Environment has been entrusted with the task of reporting to the Abengoa Chairmanship on the progress and status of the Management Systems in the different group companies. This supervisory role is headed by the General Coordinator for Quality and the Environment, who verifies fulfillment of objectives and proper use of generated synergies through control and follow-up visits.

The duties of the Quality and the Environment organizations of the various companies are, essentially, to manage and develop System documentation by keeping it up to date in accordance with applicable national and international regulations; to put forward and implement the annual internal audit plan; to act as secretary to the Committee on Quality and the Environment, where objectives, indicators and goals are proposed for the company, areas and departments; to handle consultations from and offer consultancy to the different areas and departments; to collaborate on training programs and supplier evaluations; to act as supervisor when applying troubleshooting reports (TSR) and improvement actions (IA); and to work with the General Management during the annual System review in order to formulate proposals for improvement.

In reference to environmental structuring and organization, all Abengoa companies have the following obligations stemming from their duty to develop internal management rules:

- To set up a Committee on Quality and the Environment presided over by the company Management and comprising representatives from the entire organization. Its duty is to act as the governing body of the Environmental Management System.
- To provide the environmental structure and organization necessary to fulfill the environmental commitment prescribed by the internal rules, which confer this responsibility on the Management. Implementation must be proportional to the needs of the company.

In order for a complex and multi-faceted organization like Abengoa to be successful in all of its environmental objectives and in its commitment to sustainability, it is indispensable that all component members are fully aware of the environmental impact of the activities they carry out from their workstations, and that they have successfully completed the necessary training. At Abengoa, all training in environmental management falls within the group's general training process. Each company has an annual Training Plan that is generally based on Abengoa's competency management model and entails systematic assessment of its effectiveness.

In accordance with our Policy on Environmental Management and sustainable use of energy and natural resources, Abengoa has set all of its companies the strategic target of implementing Environmental Management Systems in compliance with the requirements of the ISO 14001 standard. It is within this general framework that more specific objectives are established to reduce the potential negative environmental impact of the products and services of each company. These objectives include a reduction in the consumption of natural resources and in the generation of waste and emissions.

The environmental management systems implemented at Abengoa are very demanding in terms of Monitoring and Quantification of environmental impact and Controlling associated operations. All activities associated with environmental aspects and considered significant must be reflected in the corresponding Monitoring and Quantification Plan and in an Operational Control Program.

Abengoa's main environmental indicators

In order to calculate the environmental indicators, the company has taken into account work centers, their associated activities and all projects directly promoted by Abengoa, except those of Telvent Matchmind. For remaining projects, we have included the part attributable to our activities. Raw materials, consumption or waste attributable to the promoters of said projects are therefore excluded, as are maintenance or operating activities carried out at customers' facilities.

To illustrate the wide range of initiatives undertaken, and, while not intended to be an exhaustive list, we would highlight the application in all business units of policies aimed at reducing the consumption of paper, toner, water and office electricity, while also improving waste collection for treatment or recycling.

Among the most noteworthy of our raft of activities geared towards obtaining results focused on greater control, awareness and minimization of environmental impact, we would include environmental protection and management, developed through the Management Systems, dumping and waste inspections, internal and external auditing, certification by official bodies, appropriate employee training and the use of clean technologies.

In the Industrial Engineering and Construction group, initiatives include environmental program application to works, reforestation of areas adjacent to the places where projects are being executed, and coordination of subcontracted transport needs with the aim of adapting the type of vehicle to the size and quantity of the materials to be transported.

Environmental Services undertakes initiatives to reduce the generation of waste, such as bulk tanker sale of certain products in order to prevent the generation of container waste, container reuse and recovery, etc. To reduce water consumption, networks have been constructed to supply raw water as process water, among other initiatives.
In addition to numerous R&D projects, such as the development of advanced wastewater treatment systems or desalination systems, Environmental Services also minimizes the potential environmental impact of brine by studying the concept of brine dilution, and advances desalination processes through renewable energies, etc.

The Bioenergy business unit carries out activities such as the reuse of water using wastewater and collected rainwater, among others.

With the aim of enhancing the reliability of the environmental indicators, improvements have been made to the process of collecting and pooling data. Some of the figures from previous years have been rectified in accordance with revised estimation and calculation criteria.

All the indicators described above have been defined and calculated with the idea of being able to monitor their evolution in successive years.

Raw Materials

Given the nature and variety of Abengoa's activities, it is practically impossible to give an exhaustive list of all the raw materials employed. Available data has therefore been pooled and consolidated in such a way as to provide an accurate and real impression of our environmental impact.

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 tested in recent years: use of recycled paper, printing on both sides of the page and, above all, extensive use of a corporate network so that all our personnel from the different companies distributed among seventy countries worldwide can share information.

Office Paper Consumption (t)

	2006	%	2007	%	2008	%
Total paper consumption	260	-	336	-	332	-
Recycled paper consumption	102	39	73	22	107	32
Consumption of paper for packaging (1)	339	-	130	-	140	-

(1) 100% recycled paper

An important group of raw materials used in Abengoa's overall activity comes from livestock and farming. On the one hand, purines for treatment and transformation, and, on the other, grain, sugar cane and surplus wine alcohol are used to produce bioethanol as a component of ecological fuels. Moreover, diverse chemical substances are used in this latter process.

Purine Treatment (t)

	2006	2007	2008
Purines (1)	53,196	63,548	75,200

(1) Purines are a by-product of livestock activity.

Bioethanol Production

	2006	2007	2008
Raw materials of agricultural origin			
Grain: wheat, corn and barley (t)	2,026,630	2,219,273	2,460,884
Sugar cane (t) (1)	-	5,119,775	5 168 809
100%-concentration wine alcohol (m^3)	58,872	60,157	27,621
Chemical substances used (t)			
Enzymes	1,677	1,892	2,368
Antibiotics	8.98	6.97	5.83
Other chemicals (2)	17,551	94,586	56,050

(1) Sugar cane was not used as a raw material for bioethanol production in 2006.
(2) Caustic solution, sulfuric acid, phosphoric acid, sulfamic acid, ammonia, etc.

A wide range of raw materials are used in the field of industrial construction and in industrial waste recycling, although metal product are of particular importance.

In the area of industrial construction, iron is the main material in manufacturing metal structures for electrical power transmission lines. Zinc is used to galvanize metal structures.

Main Metals in the Area of Industrial Engineering and Construction (t)

	2006	2007	2008
Iron	20,971	11,090	19,984
Zinc	840	1,233	2,079
Copper	117	195	118

Other Materials (t)

	2006	2007	2008
Cement	20,749	17,012	26,349
Wood	715	1,152	2,350
Other metal products (1)	0	908	4,956

(1) Brass, bronze, etc.

Within the realm of Environmental Services, companies involved in recycling industrial waste by means of treatment, valorization and recovery, obtain products such as secondary aluminum, concentrated blocks of aluminum, Waelz oxide with a 65% zinc content, secondary zinc and zinc oxide.

This is the area with the greatest potential for recovering sold products, which, in practice, can be achieved 100% in most cases.

The following table details the main types of industrial waste treated and the additives used:

Recycled Industrial Waste (t)

	2006	2007	2008
Salt slag	176,025	190,733	179,357
Smelting and steelworks dust	95,273	277,613	307,115
Desulfurization waste (sulfur)	105,064	98,559	97,251
Aluminum metal waste	107,116	104,833	85,582
Aluminum dross	27,656	36,709	40,081
Sundry zinc waste	20,802	317,790	311,542
Additive elements (Si, Cu, Mg, Mn)	6,392	8,645	6,693

The Environmental Services division also includes companies dedicated to management, waste treatment and industrial cleaning of tanks, centrifuges, etc.

The waste described above is classified according to whether it is hazardous or not, and depending on the treatment it is to receive.

Waste for Management and Treatment (t)

Hazardous	2006	2007	2008
Waste for physicochemical treatment	24,442	32,918	39,369
Waste for energy valorization treatment	42,170	50,555	35,373
Waste for inertization treatment	260,866	258,924	320,531
Waste for recovery-regeneration treatment	5,376	32,482	18,519
Waste for hazardous waste disposal treatment	64,512	73,649	94,906
Waste for thermal treatment	897	4,886	7,881
Waste for evapo-condensation treatment	12,790	8,941	15,843
Waste for PCB treatment	285	337	296
Waste for waste separation treatment	951	721	632
Subtotal	**412,288**	**463,412**	**533,350**
Non-hazardous	**2006**	**2007**	**2008**
Waste for non-hazardous disposal treatment	577,804	636,550	645,750
Waste for inert disposal treatment	1,232	865	371
Waste for non-hazardous energy valorization treatment	2,869	1,143	2,577
Waste for non-hazardous physicochemical treatment	7,363	8,270	3,394
Waste for non-hazardous reuse/recycling treatment	15,504	21,430	25,163
Subtotal	**604,771**	**668,258**	**677,255**
Total	**1,017,059**	**1,131,669**	**1,210,605**

Another activity within the Environmental Services division involves management of PCB-contaminated equipment, which consists of the treatment and cleaning of transformers, condensers, solids and liquids, recovering any materials that can be reused.

PCBs (t)

	2006	2007	2008
PCB-contaminated electrical equipment	4,102	3,765	4,918

Most of the consumption of plastic as a raw material comes from the recycling of film that has been used to cover greenhouses.

Plastic (t)

	2006	2007	2008
Plastic waste from agricultural activities	11,739	11,507	12,800

Below is a list containing some of the chemical substances consumed most during the different production processes within the framework of industrial construction, environmental services and solar activities. Bear in mind that the number of substances used is wide-ranging, with most showing non-representative quantities.

Different Chemical Substances used in Production Processes (t)

	2006	2007	2008
Sodium bicarbonate	2,569	3,125	3,287
Sulfuric acid	2,780	1425	1,188
Hydrochloric acid	130	552	1,054
Caustic solution (25%)	1,063	159	229
Sodium hypochlorite	380	399	289
Sodium hydroxide	559	527	668
Calcium hydroxide	1,646	295	368
Fluxing salts	39,631	42,468	34,921
Lime	10,576	55,072	51,437
Anti-foaming agents	15	15,602	17,320
Nitrogen	34,127	16,116	19,686
Oxygen	15,155,052	14,625,674	12,524,913

Energy

Figures on the amount of electrical power consumed from the grid correspond to our permanent work centers, both for production as well as offices, and also to those projects that have been developed directly by Abengoa.

On our energy balance sheet, important elements include fuels consumed in the different production processes, grain dryers, smelting furnaces, machinery, etc. Also worthy of mention is consumption associated with cogeneration activities. Finally, the energy contribution of our vehicle fleet is also reflected.

In line with our drive towards environmental protection, the use of alternative fuels is encouraged, examples being bioethanol and biodiesel for the vehicle fleet.

Indirect energy consumption in the form of grid electricity would be as follows in accordance with IEA data for the different countries where Abengoa operates:

Energy (GJ)

	2006	2007	2008
Grid electricity	943,910	7,685,486	8,065,898
Electrical self-consumption	126,672	122,555	118,562

Energy (GJ)

Fossil fuels (GJ)	2006	2007	2008
Gasoline	56,455	55,804	36,784
Diesel	314,741	1,106,333	884,720
Gas	35,292,145	23,064,886	15,771,700
Other petroleum derivatives	1,962,221	3,272,785	3,813,638
Biofuels (GJ) (1)			
Bioethanol	-	63,275	11,570
Biodiesel	-	224,795	367,192
Sugar cane bagasse	-	8,338,651	8,556,741
Total Energy	37,627,569	36,126,528	29,442,345

(1) Biofuels were not used in 2006.

With the aim of carrying out activities with the lowest possible energy cost, Abengoa has undertaken a series of initiatives involving the different business units.

Indirect,energy consumption by primary sources (GJ)

	2006	2007	2008
Coal	1,214	5,735	6,140
Natural gas	825	3,544	3,752
Petroleum products	161	768	829
Total	**2,200**	**10,047**	**10,721**

Bioenergy has rolled out initiatives such as improvements to gas installations by replacing burners with other more efficient ones, investments in maintenance operations in order to eliminate network outages and losses, optimizing the use of biogas, installation of softstarts, expanding VOC capture mechanisms and the implementation of processes such as desalination or obtaining hydrogen through the use of renewable energies. It is also promoting the use of less contaminating fuels, such as E-diesel, (a blend of diesel fuel and ethanol which cuts the use of non-renewable energies by between 5% and 15% in those vehicles that use them).

The Solar business unit has allocated R&D&i budgets to research on alternative sources of energy.

In the area of Industrial Engineering and Construction, an Environment and Renewable Energies Division has been established to develop supply opportunities in the fields of solar energy and desalination. In northern Africa, ISCC (Integrated Solar Combined Cycle) operations are under way, where the accumulated experience in combined-cycle and thermosolar plant maintenance is being put to good use.

Environmental Services has been working to save energy in processes requiring greater input. Work over 2008 focused on improvements to storage sites to ensure the materials remain dry, thereby curbing our plants' electrical energy consumption by 8%. Without these enhancements, the materials would have a water content amounting to 10% of their total weight.

The most widely implemented initiatives undertaken to reduce indirect energy consumption included modification of the lighting system in work centers and an employee awareness campaign, of which we would highlight the replacement of conventional light bulbs with low-consumption types, sectorization of electrical circuits to enable lighting by different areas, installation of movement sensors, modification of facilities in order to make the most of natural light, etc.

Water

The main capture sources are surface, underground and third-party-supplied water.

Processing, cooling and sanitary use represent the most significant sources of water consumption.

In accordance with Abengoa's information and reporting system, none of the sources the company uses to collect water appears 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 total volume of the sources in question.

Given the tremendous importance of this natural resource, all companies must prepare a detailed study of the sources they use, their purpose and current state, as well as available options for recycling and/or reuse.

Water Consumption (m^3)

	2006	2007	2008
Capture Sources			
Surface water	1,710,717	7,306,785	26,955,114
Underground water	1,924,952	3,182,184	4,641,812
Rainwater	9,613	161,461	153,969
Water supplied by third parties	2,360,430	5,169,122	5,541,547
Wastewater supplied by third parties	-	3,380,855	3,409,846
Consumption			
Process/cooling	5,993,140	17,178,580	35,629,295
Sanitary	3111	721,894	719,472

The guiding priority is, above all, reduction at source by minimizing the amount used or reusing the resource for activities in which drinkability is not a requirement.

Companies which, due to their nature, negatively alter the state of the water they use, must treat the water accordingly to ensure that the final quality of the water falls within the legally prescribed limits prior to discharge into public watercourses. Similarly, all discharges are duly authorized and controlled by the relevant authorities.

According to established policy, the quantities of water reused or recycled are maintained or increased over time to take new technologies into account. Likewise, reduced consumption, more efficient consumption and improvements to final quality are considered key objectives in any of the activities carried out by each Abengoa company.

Biodiversity

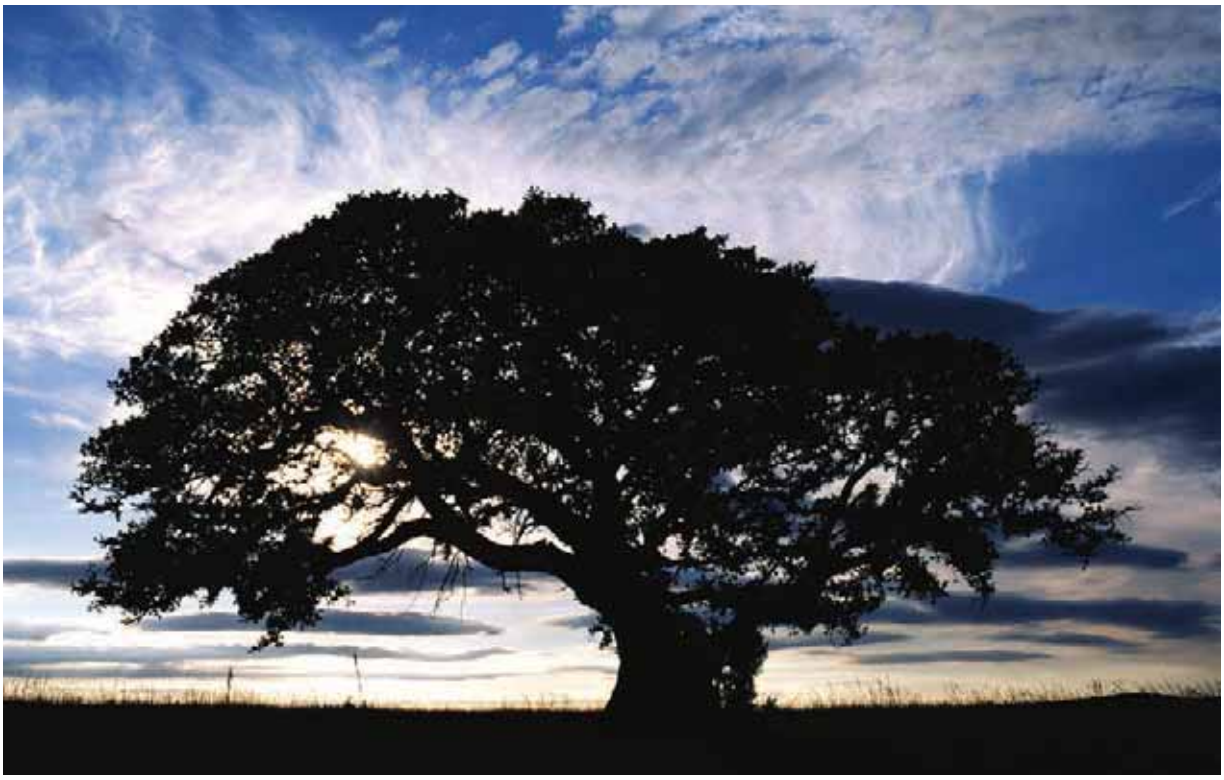
Abengoa is aware that the loss of biological diversity is one of the most significant problems it faces due to the sheer variety of its activities.

With this concern always in mind, the company has implemented a range of different strategies and action plans in order to protect biodiversity, such as reforestation plans, strategies geared towards protecting flora and fauna, hunting bans, prohibitions on discharges into natural watercourses, forest fire prevention training, etc.

Abengoa has also drawn up plans to monitor and control its activities, the receiving environment and the impact of its activities thereon. Waste treatment activities are handled by authorized agents. Suppliers and subcontractors have been informed of applicable environmental procedures and requirements depending on the service they provide, and the company has received from them an environmental commitment to comply with these rules and procedures.

There is no evidence to the effect that the company owns, administers or leases any land within biodiversity-rich habitats, nor do any endangered species live in habitats that might be affected by the group's activities.

In accordance with available information systems, there is no evidence suggesting company business has had any verifiably major impact on biodiversity.



Emissions, Discharges and Waste

Computation of greenhouse gas (GHG) emissions takes into account the direct emissions from all sources that are owned or possessed by Abengoa (combustion, process, transportation and fugitive emissions), indirect emissions from acquired electrical power, thermal energy and steam and 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 energy. Biomass emissions from combustion or processing are reported separately.

Emissions have been calculated in accordance with IPCC and GHG Protocol methodologies, using specific fuel emission factors whenever possible, or otherwise national GHG inventory values for the countries in which we operate, or, as a last resort, generic figures published by the IPCC.

The 2007 Annual Report contained an error in the reported figures on greenhouse gas emissions by taking the emissions of a company without converting the units in which the data was communicated. This error has been duly remedied in this report and readers can check that the figures are now in line with those reported for 2006.

Greenhouse Gas Emissions (CO_2 equivalent/t)

	2006	2007	2008
Direct Emissions	1,394,305	1,452,014	2,564,221
Direct emissions from Biomass (1)	-	-	934,535
Indirect Emissions (2)	388,759	493,142	422,921
Other Indirect Emissions (3)	-	-	197,461
Total Emissions	**1,783,063**	**1,945,155**	**4,119,137**

(1) In accordance with the GHG Protocol Corporate standard
(2) Including acquired electrical power, thermal energy and steam emissions
(3) Including emissions associated with work-related travel, work commutes, losses in the transmission of electrical power and emissions in the value chain for fuels consumed for generation of acquired electrical power

The increase in emissions over 2008 can be put down to the higher number of companies included within our scope of consolidation, coupled with the decision to implement methods for calculating direct and indirect emissions throughout all companies.

Among all the measurements, calculations and estimations made to date, no ozone layer-depleting substances have been identified.

NOx, SOx and other Atmospheric Emissions (t)

	2006	2007	2008
CO	1,173	17,488	34,950
VOCs (1)	1,216	855	6,512
NOX	6,301	6,248	20,242
Particles	1,364	4,298	6,928
SOX	427	562	920

(1) Figures on NMVOC. CH4, which encompasses the VOC family, is already covered under GHG emissions

Without taking into account the waste treated by the Environmental Services division, which has been included in the raw materials section, Abengoa produces a wide variety of waste in the course of its normal activity, the majority of which is monitored by the different Environmental Management Systems implemented in each company. Below is a list of the most significant in terms of quantity and impact:

Non-hazardous Waste (t)

	2006	2007	2008	Destination
Paper and cardboard	461	608	468	Recycling
Scrap metal	9,849	50,855	15,637	Recycling
Plastic	518	1,081	1,030	Recycling
Wood	1,019	681	778	Recycling
Rubble	7,198	25,421	24,874	Treatment/Dump
Surplus soil and topsoil	7,319	580,792	56,763	Dump
Syrup	8,332	2,285	68	Treatment
Rejected DDGS - pre-cleaned powder	1,055	5,307	1,907	Treatment
Vinasse waste	-	1,271,229	1,031,465	Sugar cane plantation irrigation
Urban waste	3,057	2,889	2,812	Treatment

Hazardous Waste (t)

	2006	2007	2008	Destination
Slag	120	271,690	267,250	Recycling
Salt slag	184,304	80,614	60,868	Recycling
Aluminum dross	29,719	2,700	2,102	Treatment
PCB-containing liquid	985	943	1,245	Incineration
PCB-contaminated solids	329	305	220	Incineration
Contaminated hazardous waste	2,216	2,445	3,588	Treatment
Oils	257	573	316	Treatment
Filter dust	15,444	34,231	32,407	Treatment
Sludge	13,853	19,103	8,699	Treatment/Dump
Contaminated water	2851	1,108	90	Treatment
Lixiviates	10,394	9,372	12,706	Treatment
Aluminum oxide	12,600	35	37	Recycling
Other waste	3,616	1,426	1,708	Treatment

In accordance with our Policy on Environmental Management, all companies that generate hazardous waste must follow an extensive process of identifying and monitoring the waste and the amount thereof for all national and international transportation operations for transit to the authorized agents, regardless of whether they belong to Abengoa or to outside businesses.

Bear in mind that this hazardous waste, salt slag and aluminum dross generated from the secondary aluminum production process are recovered for reuse within the aluminum waste recycling unit of the Environmental Services business unit. This activity enables us to complete the recycling cycle and use the waste to its full potential.

There are also companies which, due to the nature of the equipment they produce (electrical and electronic), are attached to waste recovery Integration Systems in order to ensure proper recovery and valorization of their equipment at the end of its useful life. Telvent GIT currently has a contract in force with the ECOTIC Foundation on behalf of the companies Telvent Traffic and Transportation, Telvent Energy and Telvent Environment.

Over the last three years, accidental spills stemming from Abengoa activities reported through our information systems have been irrelevant in terms of both scope and impact.

Discharges (m^3)

	2006	2007	2008
Public network	101,227	1,024,015	1,141,923
Surface waters	28,391,235	3,736,954	1,479,073
Discharges due to soil infiltration	3,672	4,786	4,965

Abengoa has no evidence that any water resources or habitats have been affected in any way by water spills resulting from corporate activities.

Products and Services

Practically all Abengoa activities are covered by some form of environmental management system in compliance with the ISO 14001 standard. As a core requirement of these systems, any significant environmental impact is duly identified in accordance with each company's internal procedures. Significant environmental impacts are described at the beginning of the chapter.

Transportation

Nowadays, higher levels of both noise and air pollution are mainly the result of land and air transportation. The acceleration in transportation growth has had a significant bearing on climate change.

At Abengoa, controlling and measuring transportation levels is yet another of our tasks, in accordance with our environmental sustainability indicators and Management Systems.

As a result, the initiatives we undertake to reduce emissions center on the use of renewable fuels, encouraging the use of public transportation and controlling the emissions generated by transportation.

Compliance

Three environmental incidents were resolved in 2008 through payment of the applicable fines. They accounted for 203,341.64€ and occurred in Spain, the United States, and Argentina. Abengoa is unaware of any other incidents.