

PROCESOS ECOLOGICOS VILCHES







This Environmental Declaration, corresponding to 2008 and the first half of 2009, has been carried out in accordance with the terms of Annex III of EC Regulation 761/2001 of 19 March, allowing voluntary participation by organisations in a Community Eco-Management and Audit Scheme, with the aim of serving as a reference to satisfy the need for public information regarding the performance of the company in relation to environmental management.

This declaration has been certified in accordance with the terms of article 3 of EC Regulation 761/2001, by an environmental verifier accredited by the Spanish Association for Standardisation and Certification (AENOR).

(Data: 2008 and first half of 2009)



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# 1. Presentation

In an increasingly demanding society from an environmental point of view, where sustainable development plays a fundamental role in the maintenance of our natural resources, Procesos Ecológicos Vilches has committed itself to the establishment of an Environmental Management System certified by external auditors based on the ISO 14001:2004 standard and EMAS regulations.

As a consequence, environmental management is one of the fundamental pillars of the company's activities and is understood as a commitment to society.

A new development this year is the preparation and publication by Procesos Ecológicos Vilches of an Environmental

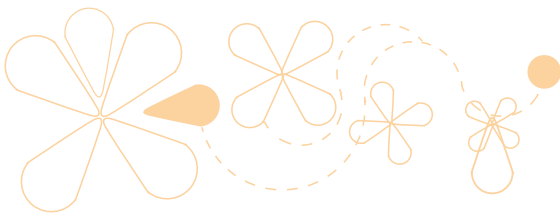
Declaration corresponding to 2008 and the first half of 2009, which sets out the environmental actions undertaken during this period with a clear objective: to carry out our activities in accordance with principles of sustainable development whilst also providing a quality service to our clients.

This in turn assists us in achieving the continuous improvement of our work activities. It also provides an opportunity to consider the evolution of our activities such as the use of natural resources, recycling of waste and the search for alternatives with reduced environmental impact, among others.

We are committed to our objective of continuous environmental improvement,

in the knowledge that our clients and the general public recognise our efforts and value the same when considering the possibility of engaging our services.

Manuel Neila Matas  
General Manager of Procesos Ecológicos Vilches



## 1.1. Presentation of Procesos Ecológicos Vilches

Procesos Ecológicos Vilches, S.A. is jointly owned by the companies Befesa Agua S.A.U. y PROECSA.

Befesa Agua S.A.U., is an international technological company constituted in September 1993 which specialises in water generation and management through the promotion, design, construction and operation of infrastructures for all aspects of this natural resource. It is wholly owned by Befesa Medio Ambiente, S.A. (Befesa), which in turn comprises the Environmental Services business group of the Abengoa company group, the majority shareholder

of the same with more than 90% of the shares.

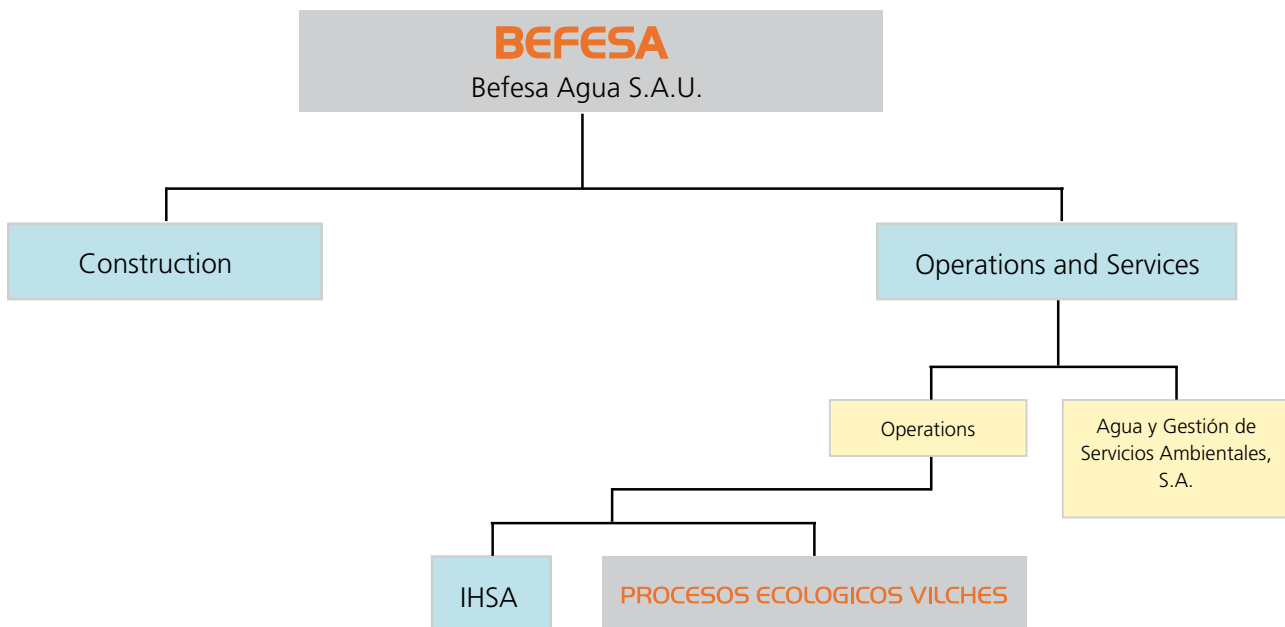
Procesos Ecológicos Vilches is located in the municipal district of Vilches (Jaén). The company has as its object the recycling of livestock waste through the production of fertiliser and electrical energy using a treatment and purification plant for pig waste (a mixture of excrement, urine, water, feed scraps and other foreign bodies), combined with a cogeneration plant for the generation of electrical energy.

The pig waste treatment plant and its

associated technology provide a solution to the serious environmental problem posed by the pig farming sector in the zone. The potential for contamination from the organic waste generated by a pig is five times greater than that generated by humans. The environmental impact in question is caused mainly through the following contaminating agents:

- atmospheric pollution
- soil contamination
- water contamination

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Using the technology applied in the treatment plant, this waste is essentially converted into:

- fertiliser
- water

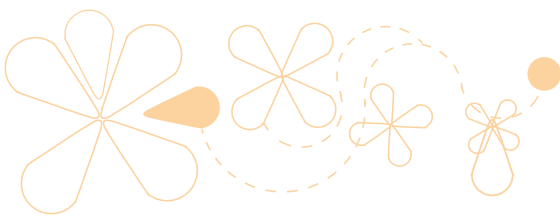
All the water of the plant is treated for its subsequent reuse in the processes of the organisation.

The plant at Vilches is one of the first pig waste treatment plants in Spain and the only one of its kind in Andalusia.

Ever since its inception, Procesos Ecológicos Vilches has been committed to the use of management systems as a tool for the continuous improvement and competitiveness of organisations. It is certified under the OHSAS 18001:2007 standard since 2005, and recently received

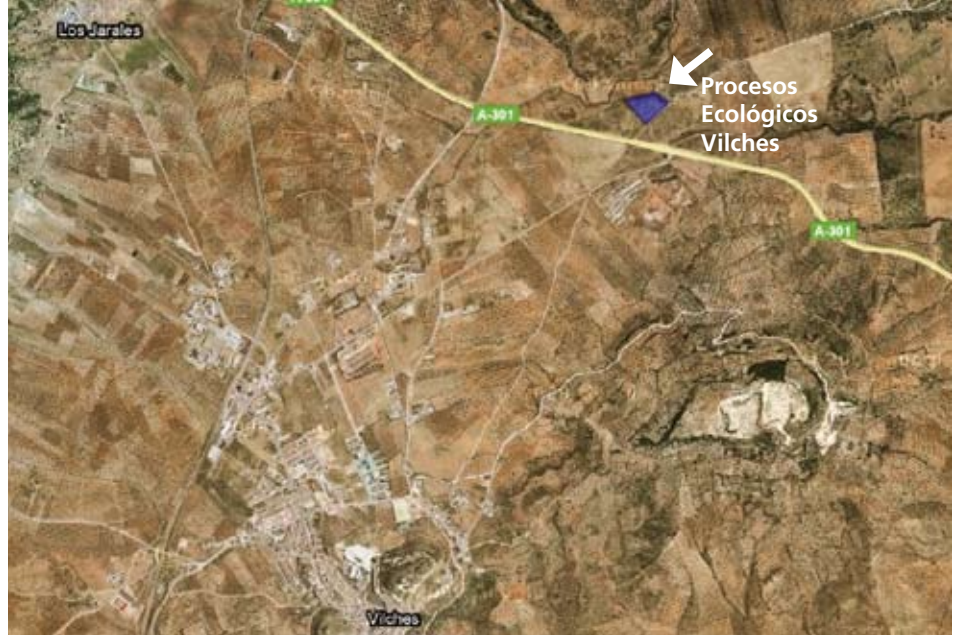
certification of its Quality and Environmental Management System according to the ISO 9001:2008 and ISO 14001:2004 standards and EMAS Regulations.





## 1.2. Location of the Installations

The facilities of Procesos Ecológicos Vilches are located in the municipal district of Vilches, in the northern zone of the Province of Jaén in the county of El Condado.



### 1.3. Activities, products and services

The plant is dedicated to the treatment and exploitation of waste produced by pig farms located in the municipal district of Vilches (Jaén) and the surrounding area. This waste is a mixture of excrement, urine, water, feed scraps and other matter which is known as purín.

The result of this process is an organic product which is used to improve agricultural soil.

The facilities are structured into two main parts:

- Power Generation Plant.
- Physical-Chemical Plant.

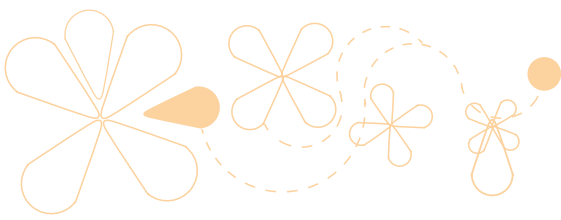
Power Generation Plant:

Electric and thermal energy production plant (cogeneration plant), the fundamental purpose of which is to supply the energy necessary for

the functioning of the physical-chemical plant. It consists of three generators powered by natural gas and auxiliary units and equipment for the recovery and use of the thermal energy generated.

Recovery of the thermal energy deriving from the exhaust gases and from the cooling water circuit is also carried out. This is done using indirect contact exchangers, which comprise the interface with the physical-chemical plant.





### Physical-chemical plant:

This plant is used to treat the pig waste and consists of a combination of chemical, physical and thermal treatments according to the different stages of the process:

- Receipt and storage of the pig waste for its initial filtering.
- Decanting. Separation of the product into liquids (clarification) and solids (sludge) which is followed by different treatment phases for each of the same.
- Deaeration. At this stage different gases are eliminated.

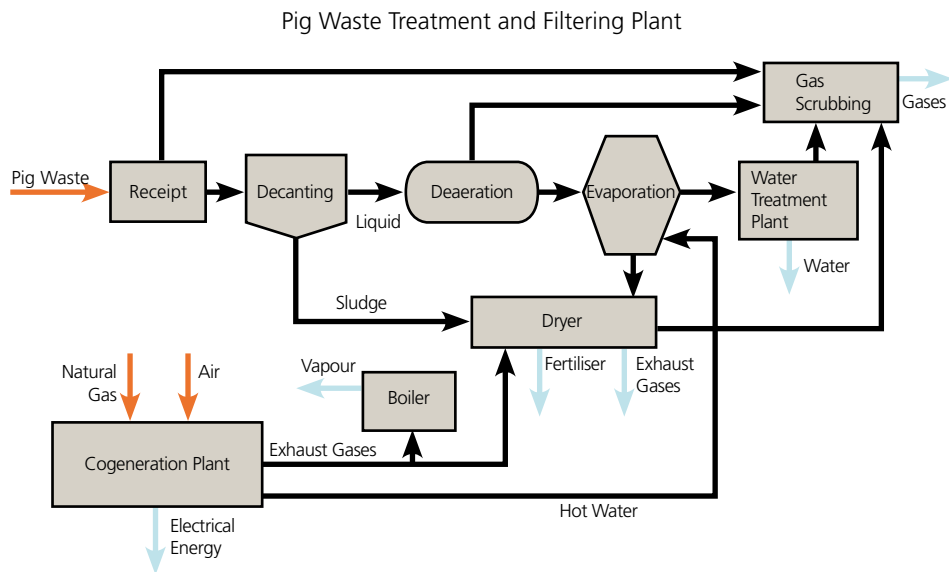
- Evaporation. Recovery of water obtained from the decanting process through the water treatment plant.
- Counter-current thermal drying of the solid fractions obtained in the decanting stage, along with salts from the evaporation process. The result is a disinfected product (fertiliser) with a humidity content of around 10% and a high content of stabilised organic matter which is suitable for use as a nutrient for agricultural soils.

The drying air is kept recirculating, without entering into contact with the atmosphere, and is heated using

an indirect contact exchanger with the exhaust gases deriving from the cogeneration plant.

- Gas scrubbing system. A gas scrubbing system is used for treatment of the air currents which are in contact with the product at its different stages.





Procesos Ecológicos Vilches is registered in the Industrial Registry with nº 23017333.

The company has authorisation for the exploitation of non-hazardous waste, more specifically for pig waste, from the Department of Environmental Prevention and Quality of the Ministry of the Environment of the Andalusian Regional Government. It is also registered in the Registry of Small Producers of Hazardous Wastes, with number 23-2239.

On 24 April 2008 it was granted Integrated Environmental Authorisation.

Fig. 3.- Diagram of Procesos Ecológicos Vilches

1.4. Organisational Chart

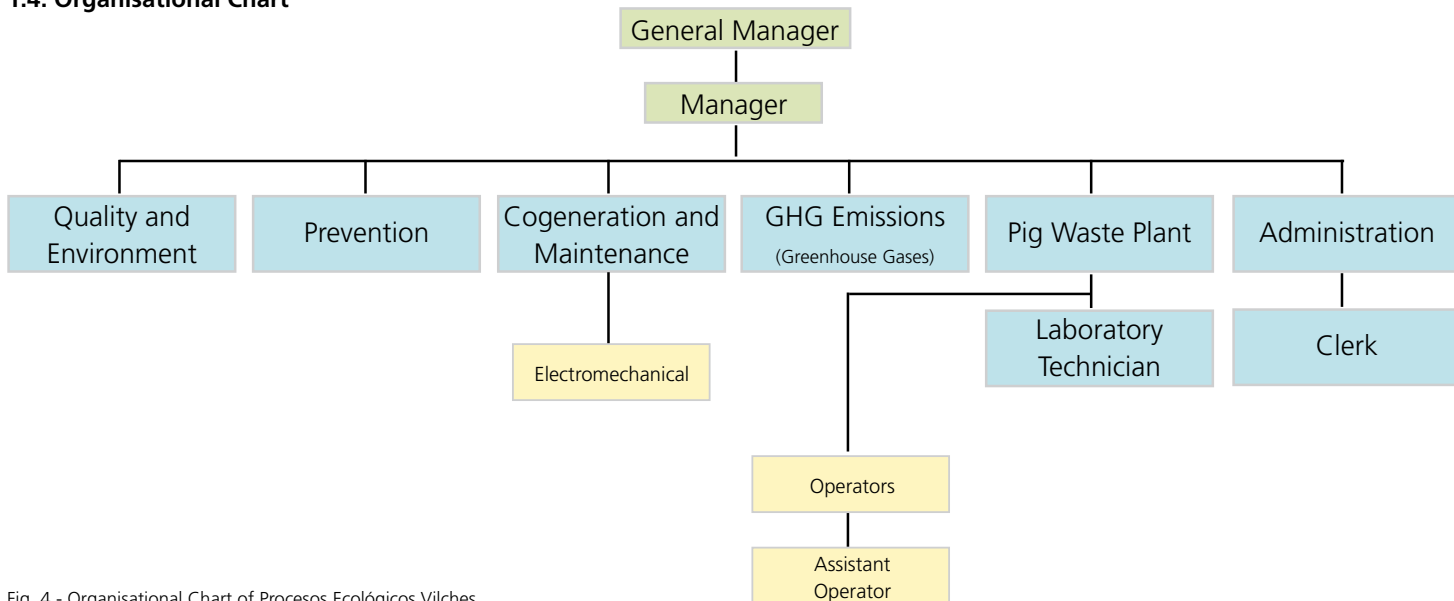
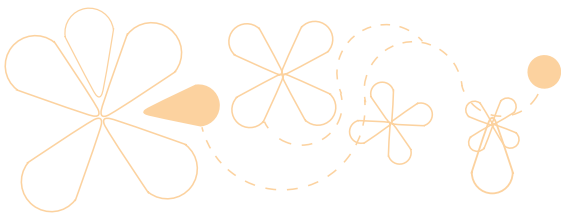


Fig. 4.- Organisational Chart of Procesos Ecológicos Vilches



## 2. Presentation of the Management System

### 2.1. Environmental Quality and Management Policy

#### PROCESOS ECOLOGICOS VILCHES

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##### Management Policy

**Procesos Ecológicos Vilches** contributes to sustainable development by removing waste from livestock farms and treating it so that it is suitable for reuse, in addition making use of the combustion gases and other consumables produced in the cogeneration of electrical energy, and all in a manner which is respectful to the environment.

The principles which govern our management policy are as follows:

- Quality and efficiency in the operation of the plant:
  - Provision of a complete service to livestock farmers with the availability and capacity necessary to meet all their needs.
  - Efficiency of operations in the entire process, from the collection of waste through to delivery of the end product (fertiliser and electricity) with minimum consumption and positive economic results.
  - Control of the process and of all the activities carried out, avoiding deviations.
  - Prevention and avoidance of environmental incidents.
- Promotion of innovation and development of efficient and safe technology which contributes to the rational use of resources, increasing our competitiveness and improving our environmental performance.
- Promotion of teamwork, internal communication, sharing of information and application of new technological advances, in addition to providing permanent training of the highest level.

This declaration manifests the commitment on the part of the management of **Procesos Ecológicos Vilches** to the development and implementation of a quality and environmental management system and to carry out continuous improvements to its efficiency, and highlights to all its staff the importance of complying with and exceeding the requirements of our clients and the legal requirements and regulations which govern our activity.

The management is committed to ensuring that this policy is a coherent and faithful reflection of our activities, reviewing it and adapting it to the extent necessary. In addition, it also undertakes to ensure that it is notified to and understood by all persons working for our organisation.

Vilches, 25th of March 2009

Manuel Neila Mata  
General Manager of the Company

## 2.2. Description of the Environmental Management System

Procesos Ecológicos Vilches has initiated the implementation of an Environmental Management System based on the ISO 14001:2004 standard and EMAS regulations. In addition, as part of its commitment to the continuous improvement and efficiency of the Environmental Management System, it is also integrated with the Quality Management System.

In the implementation phase of the environmental management system, the processes were identified and the associated environmental aspects were evaluated, with the necessary measures being taken to control the same. In addition, all the processes undergo continuous updating to keep pace with the changes taking place within the organisation.

The Management System has an established organisational structure and focuses on processes which describe the functions and responsibilities of all the staff in relation to the Environmental Management System established.

Each year the management, through the quality and environment committee, approves the Environmental Management Programme, which is directed towards achieving the environmental goals and objectives established. This programme includes the assignment of responsibilities

for the achievement of objectives and goals, and the resources and time frames allocated to the same.

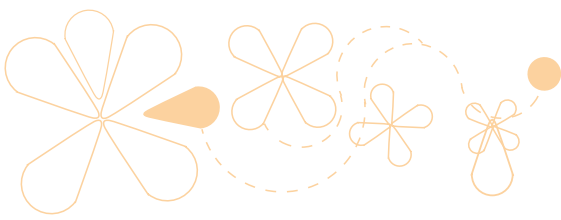
The documentary support of the Environmental Management System for Procesos Ecológicos Vilches consists of the following documents:

- System manual: The main reference document for the implementation and maintenance of the Management System, consisting of a guide which provides an overview of the entire system.
- Procedures: Develops the processes which Procesos Ecológicos Vilches has to carry out in order to comply with the requirements established by the regulations.
- Technical Instructions: Describes in a clear and detailed manner the actions involved in the execution of a specific job or task.
- Records: records the actions carried out as documented in the management system.
- Other system documents: Documents which contribute to a better understanding of the main system documents.

Operational control is established over the environmental actions carried out at Procesos Ecológicos Vilches to ensure their correct execution.

The Environmental Management System is considered as a process of continuous improvement, with the periodic establishment of environmental objectives which are continuously adapted to the evolution of the organisation and its environs.

The system establishes mechanisms in various of its processes to detect deviations which may arise and the treatment of the same, along with periodic reviews on the part of the management of Procesos Ecológicos Vilches and internal audits to evaluate the efficiency of the System in complying with the policies and objectives established.



## 3. Environmental Aspects and Associated Impacts

### 3.1. Applicable legal requirements

Procesos Ecológicos Vilches is aware of the importance of complying with the requirements of environmental law and other requirements applicable to its activity. Accordingly, when drafting its Quality and Environmental Management Policy one of the fundamental pillars included was that of continuous compliance with all laws and regulations at a local, regional, national and European level.

Procesos Ecológicos Vilches has a documented procedure for monitoring and checks on new legislative developments in the environmental field, POG-M-05-110 "Identification and recording of legal requirements and other applicable requirements", which establishes the guidelines for periodic review of legislation and timely incorporation in the list of regulations of the requirements of new laws or amendments to existing laws, as well as evaluations of compliance with their terms.

### 3.2. Identification and evaluation of environmental aspects

The term 'environmental aspect' is related to environmental impacts, as it refers to any element of the activities of the organisation or its products or services which may interact with the environment and accordingly may cause an impact upon it.

The relationship between human activities and the environment involves an impact, whether positive or negative, upon the environment.

The identification and evaluation of each of these environmental aspects deriving from the execution of operations at Procesos Ecológicos Vilches is a fundamental aspect of our policy and the efficiency of the Management System, as it forms the basis for the planning of environmental improvements, monitoring and control within the organisation.

#### 3.2.1. Identification system

An environmental aspect is defined as being any element of the activities and services of Procesos Ecológicos Vilches which may interact with the Environment. An environmental impact is any action involving transformation or change directly or indirectly resulting, whether the change is damaging or beneficial.

Procesos Ecológicos Vilches has established in its procedure POG-M-05-100 "Identification and recording of environmental aspects. Evaluation of environmental impacts" the methodology used to identify the environmental aspects deriving from the normal execution of activities by the organisation (direct), emergency situations (potential) and aspects over which the organisation does not have full control (indirect).

Once these have been identified an evaluation is carried out to determine to what extent they may be compared, as well as identifying those which have a significant impact on the environment.

These aspects are classified as follows:

- Direct environmental aspects, originating from the normal functioning of the associated processes, facilities and equipment.
- Indirect environmental aspects, namely those over which the organisation has no direct control,

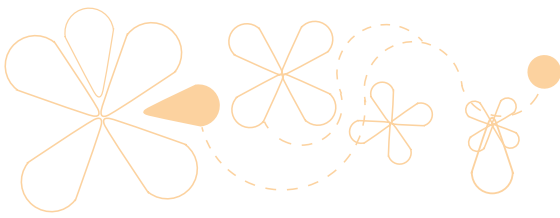
although it is possible to take steps to control the possible environmental impact resulting from the same.

- Potential direct environmental aspects originate from uncontrolled situations not related to the normal functioning of the processes of the company, either due to incidents, accidents or emergency situations.

A periodic review is carried out of the aspects identified, the evaluation and the criteria applied for the same, which are adapted in the event of any variation in the circumstances.

Following this, it is necessary to determine which environmental aspects of our activities produce an impact upon the environment in the surrounding area.





### 3.2.2. Direct environmental aspects

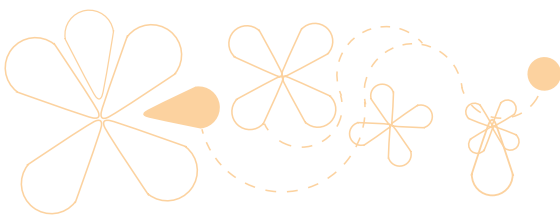
The direct environmental aspects identified and their associated impacts and significance are indicated below:

Environmental aspect	Environmental impact	Significance
Consumption		
Power consumption	Exhaustion of natural resources	No
Water consumption	Exhaustion of natural resources	No
Consumption of ground water	Exhaustion of natural resources	No
Consumption of chemical reagents	Exhaustion of natural resources and soil and surface/ground water contamination	No
Paper consumption	Exhaustion of natural resources	No
Natural gas consumption	Air pollution and exhaustion of raw materials	Yes
Diesel	Air pollution and exhaustion of raw materials	No
Waste		
Toner and ink cartridges	Soil contamination and surface/ground water contamination	No
Plastic	Soil contamination and surface/ground water contamination	No
Paper and cardboard.	Soil contamination and surface/ground water contamination	No
Fluorescent materials	Soil contamination and surface/ground water contamination	No
Medical products	Soil contamination and surface/ground water contamination	No
Computer equipment	Soil contamination and surface/ground water contamination	No
Organic material.	Soil contamination and surface/ground water contamination	No
Batteries	Soil contamination and surface/ground water contamination	No
Wood	Soil contamination and surface/ground water contamination	No
Contaminated plastic containers	Soil contamination and surface/ground water contamination	Yes

Environmental aspect	Environmental impact	Significance
Contaminated metallic containers	Soil contamination and surface/ground water contamination	No
Empty aerosols	Soil contamination and surface/ground water contamination	No
Contaminated absorbents	Soil contamination and surface/ground water contamination	No
Evaporating concentrate	Soil contamination and surface/ground water contamination	No
Filters of the cooling towers	Soil contamination and surface/ground water contamination	No
Laboratory reagents	Soil contamination and surface/ground water contamination	No
Scrap metal	Soil contamination and surface/ground water contamination	No
Used oils	Soil contamination and surface/ground water contamination	Yes
Used filters	Soil contamination and surface/ground water contamination	No
Hydrocarbon sludge	Soil contamination and surface/ground water contamination	No
Out-of-use batteries	Soil contamination and surface/ground water contamination	No
Out-of-use vehicles	Soil contamination and surface/ground water contamination	No

Emissions

Noise emissions	Contamination of atmospheric quality	No
H <sub>2</sub> S Emissions	Contamination of atmospheric quality	No
CO <sub>2</sub> Emissions (GHG equivalent)	Contamination of atmospheric quality	Yes
NOx Emissions	Contamination of atmospheric quality	No
CO Emissions	Contamination of atmospheric quality	Yes
COT Emissions	Contamination of atmospheric quality	No
HAP Emissions	Contamination of atmospheric quality	No
SOx Emissions	Contamination of atmospheric quality	No
Total particulate emissions	Contamination of atmospheric quality	No
NH <sub>3</sub> Emissions	Contamination of atmospheric quality	No



Environmental aspect	Environmental impact	Significance
Biodiversity		
Biodiversity	Effect on birdlife	No
Visual impact		
Visual impact	Visual and light pollution	No
Effect on soil		
Effect on soil	Soil contamination	No

### 3.2.3. Potential environmental aspects

The potential environmental aspects identified are not significant. They are displayed with the accidents, incidents or emergency situations which would be generated if they were to arise.

Aspects, incidents and emergency situations	Potential environmental aspects	Environmental impacts
Fire	Spillage of fire extinction water	Soil contamination and surface/ground water contamination
	Emission of smoke from the fire	Decrease in air quality
	Generation of solid waste	Soil contamination and surface/ground water contamination
Accidental spillage	Spillage of chemical products	Soil contamination and surface/ground water contamination
	Generation of hazardous waste	Soil contamination and surface/ground water contamination
Waste water spillage	Waste water spillage	Soil contamination and surface/ground water contamination
Greenhouse gas leak	Generation of contaminating gases	Contamination of atmospheric quality

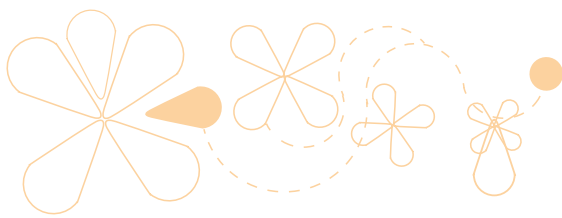
### 3.2.4. Indirect environmental aspects

The indirect environmental aspects identified (which have been evaluated as insignificant) are related with the environmental performance and the practices of suppliers and subcontractors.

For example: generation of plastic and cardboard waste in relation to subcontracting and product acquisition, along with emissions of greenhouse gases (suppliers, travel to work, losses during

transport and distribution and the value chain of the fuel used to produce energy).





## 4. Objectives, Goals and Operational Control Variables

Procesos Ecológicos Vilches has formulated environmental objectives and goals in order to improve its environmental performance. Each of these consist of activities and resources provided in order to improve a specific aspect of the activities of our organisation.

These environmental objectives, and the goals into which they are broken down, are reflected in the plant's policy, which

is defined on an annual basis by the quality and environment committee and is subsequently notified to all the staff who may be involved in achieving these objectives. When defining these objectives an effort is made to quantify them where possible, in order to enable evaluation of compliance with the same in a clear manner. Also included are the necessary resources, both economic and human, and the responsibilities deriving from the planning

of each of these objectives are established. In this way execution, monitoring and evaluation of compliance with the objectives is improved, and they may be modified where necessary.

The following is a list of the environmental objectives proposed for 2009 and an analysis of the degree of compliance with these objectives.

OBJ 2009/01 Certification according to ISO 9001 and 14001 and EMAS Regulations at PE Vilches

	Goals	Phases	Deadlines	Responsible party	Human resources	Material resources	Financial resources
1	Initial presentation to all plant personnel (own employees and subcontractors).	- Initial meeting. - Constitution of the Committee. - General training session.	March 2009	- PE Vilches. - IMP Consultores. - Quality and Environmental Management.	- PE Vilches. - IMP Consultores. - Quality and Environmental Management. (120 hrs)	Electronic Equipment	Approx. €10,000
2	Drafting, review and approval of the Management Systems Documentation.	- Review and updating of the existing documentation. - Drafting of new documents. - Review and approval of all the system documentation.	June 2009	- PE Vilches. - IMP Consultores. - Quality and Environmental Management.	- PE Vilches. - IMP Consultores. - Quality and Environmental Management. (736 hrs)	Document management computer applications.	
3	Internal audit.	- Verification of all the points covered in the standard. - Drafting of the report. - Resolution of nonconformities.	July 2009	- PE Vilches. - IMP Consultores. - Quality and Environmental Management.	- PE Vilches. - IMP Consultores. - Quality and Environmental Management. (16 hrs)	Document management computer applications.	
4	Certification.	Certification Audit by Certifying Company.	Sep.-Oct. 2009	- PE Vilches. - IMP Consultores. - Quality and Environmental Management.	- PE Vilches. - IMP Consultores. - Quality and Environmental Management. (32 hrs)	Document management computer applications.	Approx. €11,000
Conclusion: Result obtained		Certification obtained? Yes / No			Deadline: September – October 2009		

Degree of compliance:

The publication of this declaration shall signify that the company has passed the certification audit, and accordingly, total achievement of this objective.

OBJ 2009/03 1% reduction of greenhouse gases by 2010 and an electrical yield of 41%.

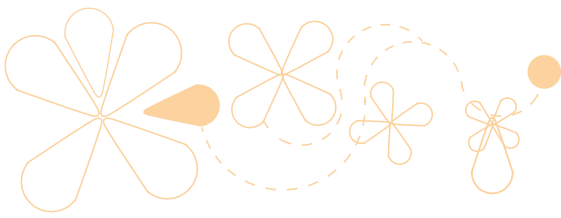
	Goals	Phases	Deadlines	Responsible party	Human resources	Material resources	Financial resources
1	Processing and management of the subsidy for the implementation of an energy efficiency Plan (cogeneration engine maintenance plan).	- External adviser for processing. - Provision of data to adviser and Administration. - Search for references. - Analysis and study of results.	May 2009	Management.	Management (80 hrs)	- Computer applications. - Prechamber purchase.	Approx. €250,000
2	Overhaul of generators.	- Contracting of technician. - Detailed analysis of overhaul with client and manufacturer. - Detailed inspection of the work carried out by the maintenance company.	January 2009	Cogeneration and Maintenance.	Management (100 hrs)	- Computer applications. - Assistance by supervisor.	
3	Development of the energy efficiency plan.	Prechamber purchase.	Feb.-Dec. 2009	Cogeneration and Maintenance.	- Head of Cogeneration and Maintenance. - Management. (80 hrs)	- Installation of prechamber engines.	
4	Implementation of the plan.	Prechamber installation.	December 2010	Quality and Environmental Management.	- Head of Cogeneration and Maintenance. - Management. - Quality and Environmental Management. (200 hrs)	- Computer applications. - Technical assistance by specialist company.	
5	Data analysis.	Analysis of results and checks of warranties.		Quality and Environmental Management.	- Head of Cogeneration and Maintenance. - Management. - Quality and Environmental Management. (200 hrs)	- Computer applications. - Gas Meter.	Approx. €1,500
Conclusion: Result obtained		1 % Reduction of Greenhouse Gases			Deadline: January 2011		

Degree of compliance: The data is currently being sent to administration and an external adviser for processing of the subsidy, and the execution of the Energy Efficiency Plan is still pending.  
The electrical performance within the first semester of 2009 was 41.4%

OBJ 2009/07 1% reduction to the kilograms of plastic containers and used oil (first half of 2010 compared to first half of 2009).

	Goals	Deadlines	Responsible party	Human resources	Material resources	Financial resources
1	Definition of a minimisation plan.	October 2009	Quality and Environmental Management.	Quality and Environmental Management. (20 hrs)	Computer applications.	0 €
2	Publication of the minimisation plan.	Nov.-Dec. 2009	Quality and Environmental Management.	Quality and Environmental Management. (20 hrs)	Computer applications.	0 €
3	Implementation of the minimisation plan.	January-June 2009	Quality and Environmental Management.	Quality and Environmental Management. (20 hrs)	Computer applications.	0 €
Conclusion: Result obtained		Decrease of 1% (first half of 2010 compared to first half of 2009)		Deadline: June 2010		

Degree of compliance: Objective seven was identified and arose in the first review of objectives and accordingly it is still pending commencement.



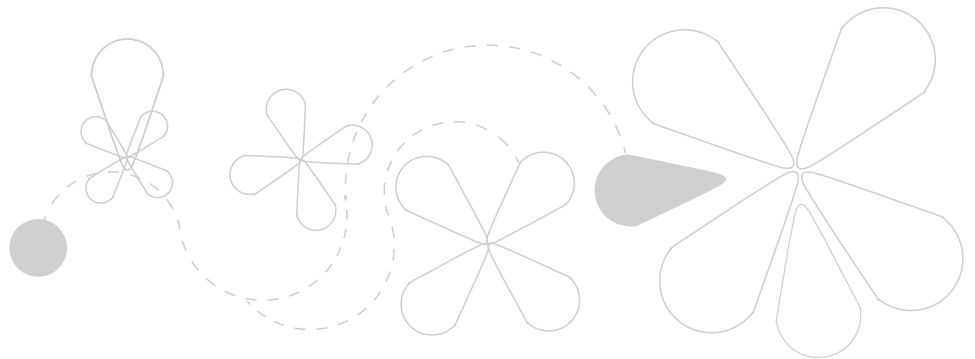
## 5. Operational Control Variables. Environmental Variables

Through the quantitative data on the environmental performance of the company corresponding to 2007, 2008 and the first half of 2009, it is possible to evaluate its performance with respect to the legal requirements governing the environmental aspects of the organisation. Where deemed convenient, indicators have been used to facilitate an understanding of the above results and their comparison with previous years.

There are two types of indicators:

- Operational performance indicators.
- Management performance indicators.

Set out below are the results obtained during 2007, 2008 and the first half of 2009 in terms of environmental ratios or indicators, both for significant environmental aspects and for those related with environmental and other objectives which are considered to be of interest.



### 5.1. Operational performance indicators

#### 5.1.1. Efficient electrical yield

The equivalent electrical yield (hereafter, EEY) quantifies the efficiency of the Plant in terms of its exploitation of the electrical and heat energy deriving from cogeneration.

More specifically, in the case of pig waste treatment plants the EEY is based on three main factors:

- Amount of waste treated, plant treatment capacity (greater than 85%) (according to design).
- Consumption of natural gas in cogeneration, and
- Electrical energy generated.

RD 661/2007 estimates an acceptable efficiency for pig waste treatment plants where the EEY value is a minimum of 55 per cent.

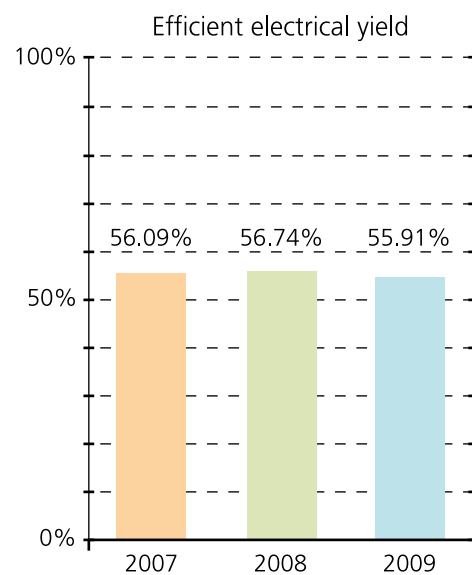
As can be seen in the previous data, over the course of these three years the EEY value for Procesos Ecológicos Vilches has been constant. This is due to the fact that the factors considered for the calculation are invariable.

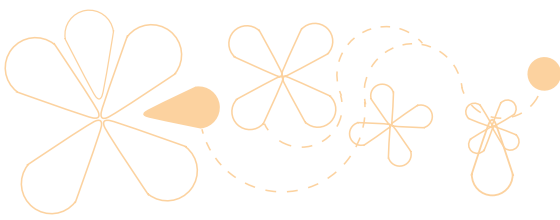
Nonetheless, during the current year various objectives have been considered in relation to improvement of the treatment capacity of the plant.

The construction of a water treatment plant will enable greater quality of the water recirculated in the process, bringing

with it a decrease of drainages of the cooling towers, and accordingly greater treatment capacity using the same design.

Year	EEY
2007	56.09%
2008	56.74%
2009	55.91%





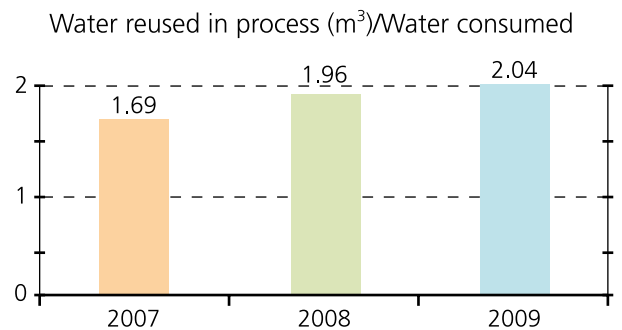
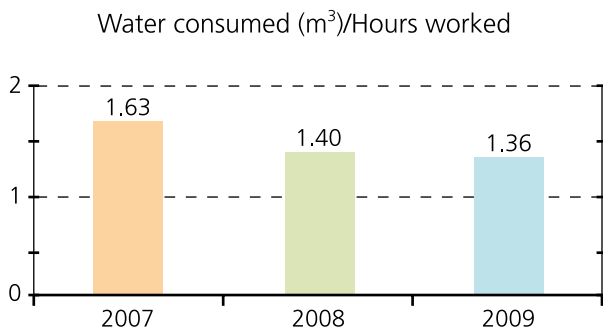
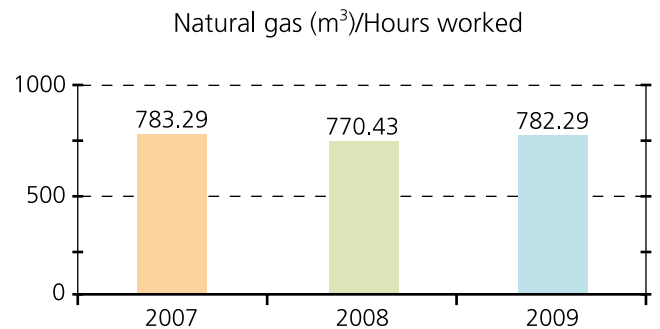
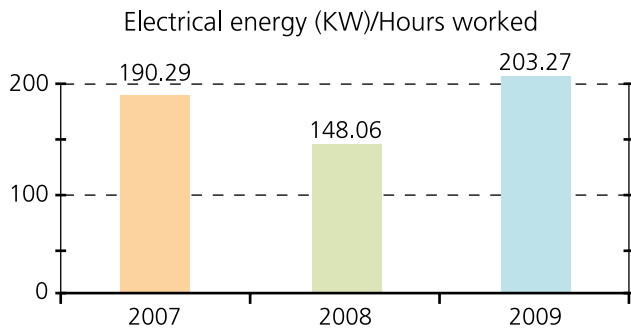
### 5.1.2. Consumption

Generally speaking, the trend of consumption over the course of the last three years has been constant, with the exception of electricity consumption in 2008, which decreased by 25% with respect to other years. The reason behind this is being studied.

Another aspect worth mentioning is that the availability of the Plant has been improved, thereby obtaining greater quantities of treated water for its subsequent re-use, as a consequence of which less water is required from external sources.



Year	Electrical energy (KW)/Hours worked	Natural gas (m <sup>3</sup> )/Hours worked	Water consumed (m <sup>3</sup> )/Hours worked	Water reused in the process (m <sup>3</sup> )/Water consumed
2007	190.29	783.29	1.63	1.69
2008	148.06	770.43	1.40	1.96
2009	203.27	782.29	1.36	2.04



### 5.1.3. Emissions

Procesos Ecológicos Vilches has three physical sources of emissions of gases into the atmosphere:

- Chimney for the evacuation of engine exhaust fumes, prior to the heat exchanger of the dryer.
- Chimney for the evacuation of gases deriving from the gas scrubbing system.
- Chimney of the boiler for recovery of engine exhaust fumes.

Of these three physical sources, the two which evacuate engine exhaust fumes are considered here, as the flow rate evacuated is considerably greater than that of the gas scrubbing system. The gases of these two sources correspond to the gases generated from the combustion of natural gas in the engines of the cogeneration plant.

These gases do not enter into contact with any of the process currents of the chemical plant, which takes place upon recovery of the heat for the physical-chemical plant in an exchanger without contact between the two fluids.

Of all the anthropogenic greenhouse gases (GHGs), CO<sub>2</sub> is the one which contributes to the greatest extent. With the application to Procesos Ecológicos Vilches of Directive 2003/87/EC of the European Parliament and

of the Council of 13 October, establishing a scheme for greenhouse gas emission allowance trading, every installation must comply with a specific objective according to its allowance. We currently have an allowance of 56,655 tonnes of CO<sub>2</sub>. In 2008 the CO<sub>2</sub> emissions were 60,267 tonnes, and so it will be necessary for us to purchase allowances on the market.

A strict monitoring regime has been established to keep a record of the emissions by the installations affected by the directive, with annual notification by the competent body which is required to be previously checked by an independent body which is accredited as a verifier. Once the verification report has been validated by the environmental body of the autonomous community, the data on the emissions is included in the National Registry of Emission Allowances.

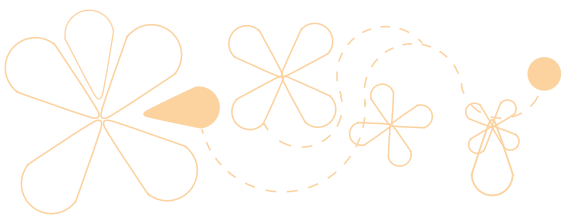
The commitment to sustainable development and the fight against climate change at Abengoa, and by extension at Procesos Ecológicos Vilches, is directed towards the development of a Sustainability System to ensure complete and reliable measurement of the global impact of our activity upon the environment, thereby enabling us to set objectives for change and improvement.

The intention is for our products and services to be not only directed towards

sustainable development, but also carried out in a sustainable manner, and that the degree of sustainability is assured through measurement and validation using transparent instruments which are recognisable by the market and society.

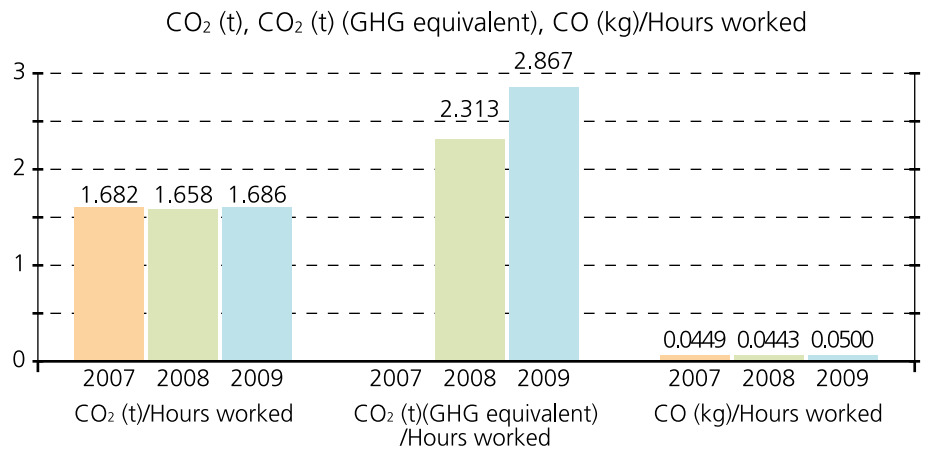
The key instrument of our Sustainability System is an inventory of our greenhouse gas emissions, with an internal standard associated for this purpose which defines a company-specific methodology for measurement, monitoring and notification of GHG emissions by the companies of the Abengoa group. In order to carry out this inventory Procesos Ecológicos Vilches takes into account the CO<sub>2</sub> due to administration demands and also the direct emissions (those which are measured for the competent body) and indirect emissions. The GHGs the object of the inventory are those included in the Kyoto Protocol, but expressed in tonnes of CO<sub>2</sub> equivalent:

- Carbon dioxide
- Methane
- Nitrous oxide
- Hydrofluorocarbons
- Perfluorocarbons
- Sulphur Hexafluoride



As can be seen in the graph, the emissions of both CO<sub>2</sub> and CO have not varied, as these are direct consequences of the combustion of natural gas, the same amount of which has been consumed over the last three years. This is not the case with emissions of CO<sub>2</sub> equivalent GHGs, for in addition to measuring direct emissions to the atmosphere, indirect emissions are also taken into account (suppliers, travel to work, losses during transport and distribution and the value chain of the fuels used to produce energy). The increase in this area is due to the fact that the GHG inventory has been improved in 2009.

Year	CO <sub>2</sub> (t)/Hours worked	CO <sub>2</sub> (t) (GHG equivalent) /Hours worked	CO (kg)/Hours worked
2007	1.682		0.0449
2008	1.658	2.313	0.0443
2009	1.686	2.867	0.0500



5.1.4. Waste

As a consequence of the activities carried out in the Plant, various types of waste are generated according to each of the activities: treatment of pig waste, cogeneration, maintenance, water treatment and office.

Both hazardous and non-hazardous waste is generated, each of which is

managed accordingly. The non-hazardous waste generated is mainly similar to urban waste and paper-cardboard. This waste is separated and deposited in municipal containers or delivered to waste management entities authorised to recover the same. As regards the hazardous waste, it is separated and treated like any other waste of this nature, being sent to an

authorised waste management entity for its correct treatment.

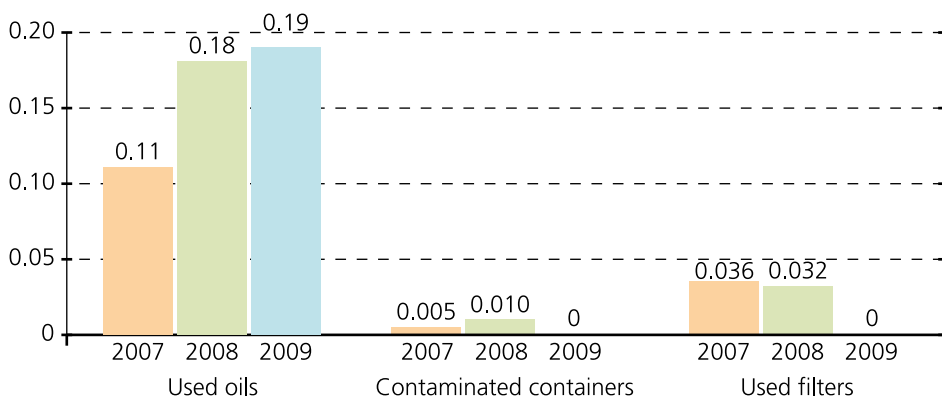
The amounts generated are specified in the following table:

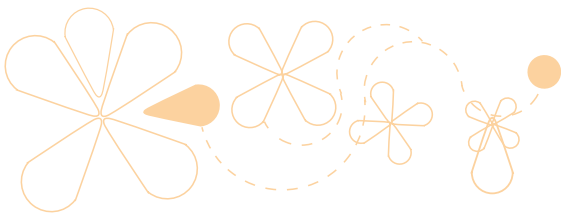
Year	Used oils (kg)/Hours worked	Contaminated containers (kg)/Hours worked	Used filters (kg)/Hours worked
2007	0.11	0.05	0.036
2008	0.18	0.010	0.032
2009	0.19	0	0

The increase in used oil waste in 2009 is due to the execution of a greater number of scheduled maintenance checks for the cogeneration engines.

In relation to the waste generated, the objectives defined for the company have been reviewed, with the incorporation of a new objective in relation to reductions in the amount of hazardous waste generated, more specifically "used oils" and "contaminated containers" (see objectives 07/2009).

Used oils, contaminated containers and used filters (kg)/Hours worked

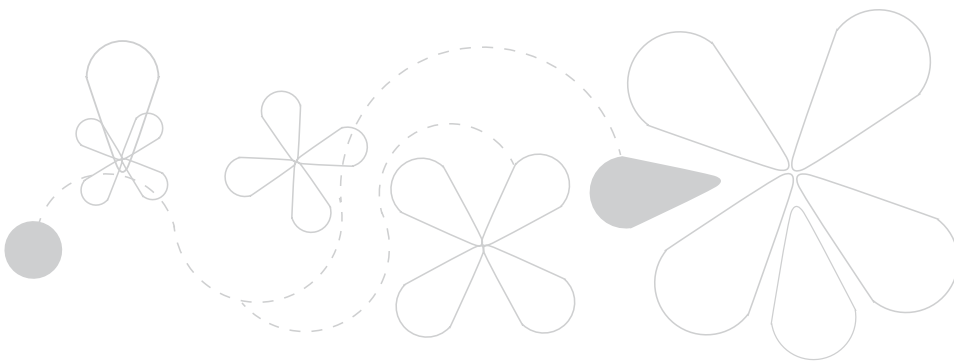




## 5.2. Management performance indicators

The results of the management performance indicators are as follows:

- Number of requests for environmental information or environmental communications by external interested parties: None.
- Environmental suggestions by staff of the organisation: None.



### 5.3. Other actions related with sustainability

In the current context of change and global competition, Abengoa believes that an innovative company is an effective and necessary instrument in order to advance towards a society of sustainable development. To do so, the values of corporate social responsibility have been incorporated into our everyday activities, integrated in a natural manner into the strategy, culture and organisation of the Company. We seek to contribute to an

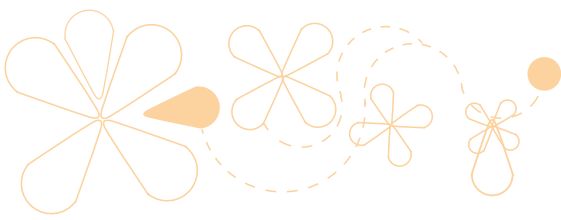
improvement to our surroundings not only in an economic sense, but also in social and environmental terms, which is therefore in the common interest of all persons.

Using solar energy, biomass, waste materials, information technology and engineering, Abengoa develops technological and innovative solutions for sustainable development. Parallel to these activities, it is also firmly committed

to society through the Focus-Abengoa Foundation.

The annual report for Abengoa reflects the data on the values in terms of social responsibility of all the companies in the Abengoa group, and one of those companies is Procesos Ecológicos Vilches.

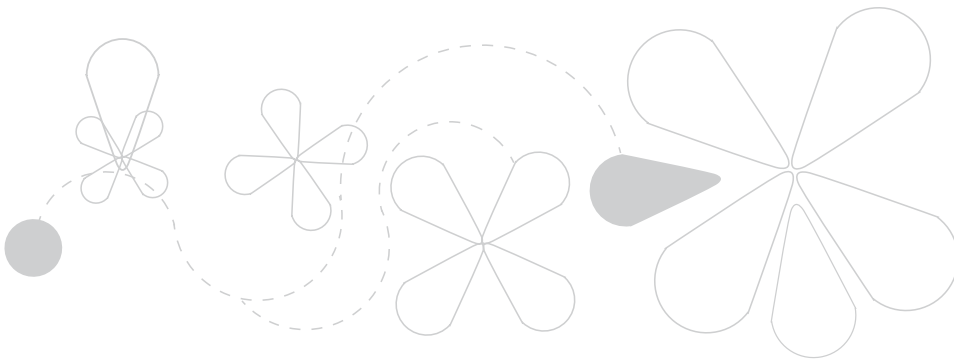




## 6. Conclusions

This first declaration reflects the data calculated and analysed from the years prior to the establishment of the environmental management system. Year after year, we will seek to demonstrate our efforts to carry out correct environmental management, complying with the objectives set in an effort towards continued improvement and all within the framework of sustainability and protection of the environment in which we carry out our activities.

Procesos Ecológicos Vilches will continue in its efforts to provide an adequate and positive response in environmental terms.



Date of next environmental declaration: September 2010.

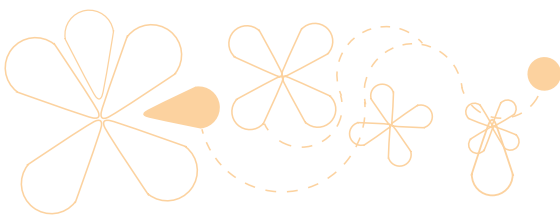


Manuel Neila Matas

General Manager

Date: September 2009.





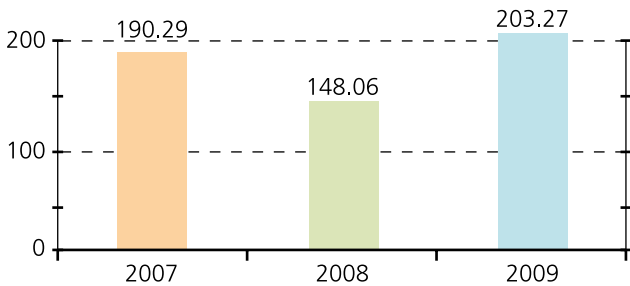
## 7. Annexes. Tables of Environmental Indicators

Consumption at Procesos Ecológicos Vilches

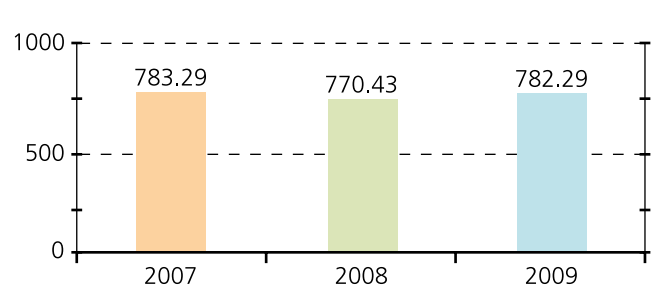
Year	Electrical energy (KW)/Hours worked	Natural gas (m <sup>3</sup> )/Hours worked	Water consumed (m <sup>3</sup> )/Hours worked	Water reused in the process (m <sup>3</sup> )/Water consumed	Hours worked/Year	Breakdown of hours	
2007	19,380.00	27,885,816.00	58,015.00	60,000.00	35,601.00	27,894.00	AMS
	6,754,969.00					7,707.00	PEV
	6,774,349.00						
2008	190.2853572	770.4335131	1.629589056	1.685345917	36,338.00		
	36,700.00					27,858.00	AMS
	5,343,351.00					8,480.00	PEV
2009	148.0557818	14,203,223.00	24,656.00	36,961.00	18,156.00		
	12,770.00					13,758.00	AMS
	3,677,836.00					4,398.00	PEV
1 <sup>st</sup> half 2009	3,690,606.00	782.2881141	1.358008372	2.035745759			

Year	Electrical energy (KW)/Hours worked	Natural gas (m <sup>3</sup> )/Hours worked	Water consumed (m <sup>3</sup> )/Hours worked	Water reused in the process (m <sup>3</sup> )/Water consumed
2007	190.29	783.29	1.63	1.69
2008	148.06	770.43	1.40	1.96
2009	203.27	782.29	1.36	2.04

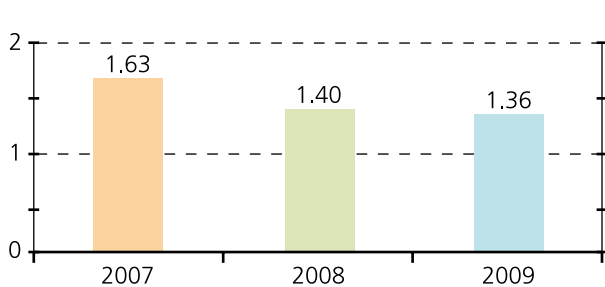
Electrical energy (KW)/Hours worked



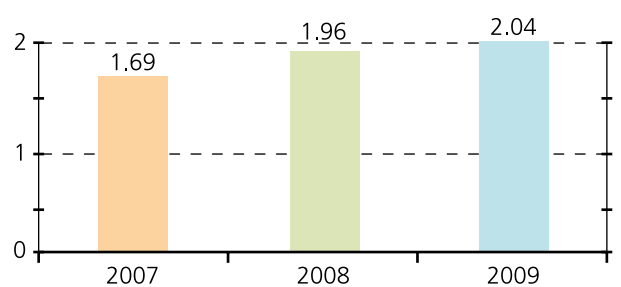
Natural gas (m<sup>3</sup>)/Hours worked



Water consumed (m<sup>3</sup>)/Hours worked



Water reused in process (m<sup>3</sup>)/Water consumed

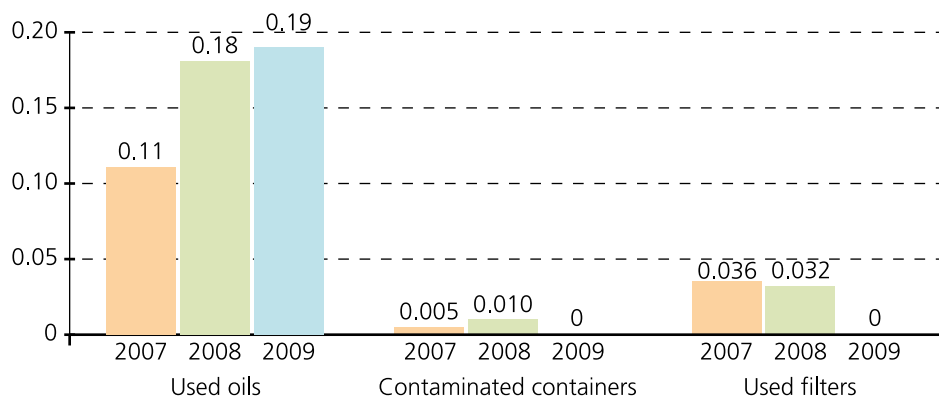


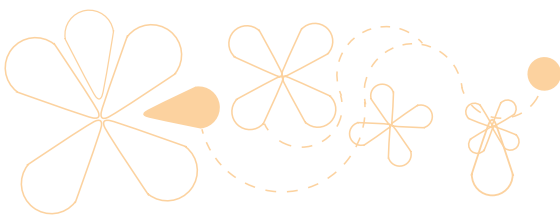
Waste at Procesos Ecológicos Vilches

Year	Used oils (kg)	Contaminated containers (kg)	Used filters (kg)	Hours worked	Breakdown of hours	
	4,070.00	170.00	1,290.00	35,601.00	27,894	AMS
					7,707	PEV
2007	0.11	0.00	3.6 %			
	6,500.00	370.00	1,180.00	36,338.00	27,858	AMS
					8,480	PEV
2008	0.18	0.01	0.032			
	3,500.00	0.00	0.00	18,156.00	13,758	AMS
					4,398	PEV
1 <sup>st</sup> half 2009	0.19	0.00	0.000			

Year	Used oils (kg)/Hours worked	Contaminated containers (kg)/Hours worked	Used filters (kg)/Hours worked
2007	0.11	0.05	0.036
2008	0.18	0.010	0.032
2009	0.19	0	0

Used oils, contaminated containers and used filters (kg)/Hours worked



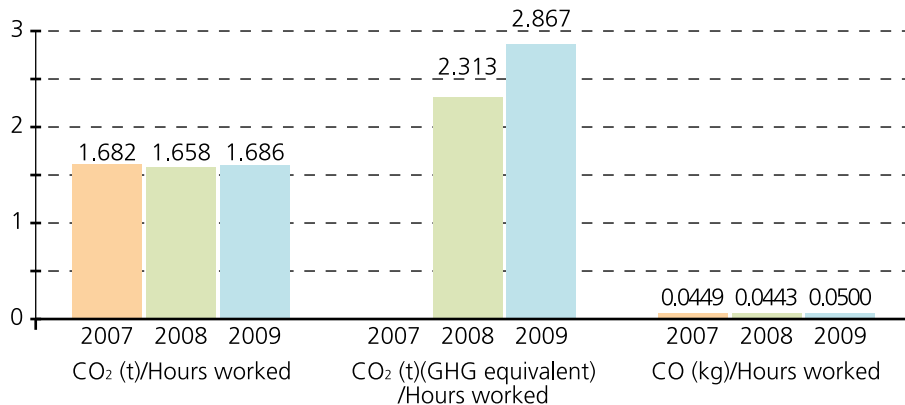


### Emissions at Procesos Ecológicos Vilches

Year	CO <sub>2</sub> (t)/Hours worked	CO <sub>2</sub> (t) (GHG equivalent) /Hours worked	CO (kg)/Hours worked	Hours worked	Breakdown of hours	
2007	59,892.00		1,600.00	35,601.00	27,894	AMS
					7,707	PEV
2007	1.682312295	0	0.044942558			
2008	60,266.00	84,033.00	1,610.00	36,338.00	27,858	AMS
					8,480	PEV
2008	1.658	2.313	0.044			
1 <sup>st</sup> half 2009	30,604.00	52,049.00	907.00	18,156.00	13,758	AMS
					4,398	PEV
1 <sup>st</sup> half 2009	1.686	2.867	0.050			

Year	CO <sub>2</sub> (t)/Hours worked	CO <sub>2</sub> (t) (GHG equivalent) /Hours worked	CO (kg)/Hours worked
2007	1.682		0.0449
2008	1.658	2.313	0.0443
2009	1.686	2.867	0.0500

CO<sub>2</sub> (t), CO<sub>2</sub> (t) (GHG equivalent), CO (kg)/Hours worked



Year	CO <sub>2</sub> (t equivalent GHG)	CO (t)	COT (t)	NO <sub>x</sub> (t)	SO <sub>x</sub> (t)	Total particles (t)	HAPs (t)	NH <sub>3</sub> (t)
2007		16	213	1,060	4	11.70	0.076	1.39
2008	84,033	16	215	1,070	4	12	0.07	1.4
2009	50,851.96	8	109	546	2	6	0.038	0.713

**Efficient electrical yield**

Año	EEY
2007	56.09%
2008	56.74%
2009	55.91%

