To find more and better energy
SUSTAINABILITY REPORT 2008
GALP ENERGIA
In 2008, **Galp Energia** stepped up its contribution to sustainable development through a sizeable technological investment in the energy efficiency of its refining base, the discovery of new sources of oil and natural gas in the Brazilian offshore, a vigorous push towards new innovation frontiers in renewable energy, a fresh diversification of its business as it entered the electricity market and the expansion of scale of its operations.
The sustainable growth of a corporate project cannot be considered the work of one generation. Value creation and the creation of sustained return is not a management exercise that responds solely to the needs of the current stakeholders but is an action that aims at implementing a business concept that creates new opportunities for future generations to come.

It is with this strategic outlook that Galp Energia rests the development of its sustainably innovating activity.

Galp Energia made a significant investment effort in the expansion of the Exploration & Production of oil and gas in order to decisively contribute to the energy safety of the country. We are strongly investing in the conversion of our refining complex to make it one of the most modern in Europe and make it environmentally more sustainable, boosting the national economy and creating job positions at once.

We keep in sight the innovation in the electricity business and in renewable energy sources because we have the ambition to build a truly integrated energy operator. Galp Energia actively participates in the Ventiveste consortium to use wind energy and started several projects of innovation, biodiesel production, sustainable mobility, wave energy and assessment of the potential offshore in the Portuguese coast.

The environmental front is always considered in the decision-making processes of the investments we make and we are focused on our performance in terms of energy efficiency, CO2 emissions and other greenhouse gases and also on other components of the environment that may be affected by our activity, such as the soil and water.

Aware of the social impact of its activity, Galp Energia improved its corporate social responsibility by supporting the communities where it operates and organising social awareness campaigns to promote a healthy and positive lifestyle.

Francisco Murteira Nabo
Chairman of the board of directors
Galp Energia
Galp Energia has a unique history in our country. Throughout its existence, companies that currently are part of the Group have developed and created new opportunities and have contributed to Galp Energia’s current positioning as an integrated energy operator that aims at constantly satisfying its clients and the sustainability of its businesses. The diversification of its portfolio shows the investments and competences developed in the past. The history of the brands and companies that today are part of Galp Energia’s universe illustrates a remarkable set of accomplishments in the last years.

In these harsh economic times, Galp Energia continues diversifying and searching for new opportunities that challenge us to innovate with sustainability. The past year was a productive one for the expansion of our corporate activity on a sustainable basis, relentlessly searching for new technological solutions that allow the streamlining of current resources and the decrease of the environmental effects of our activity.

In Exploration & Production we are exploring new oil and gas sources in Brazil and Venezuela by developing projects that put us in the frontier of technological development. In Refining, we strongly invested in the modernisation of our refining complex in order to make it more competitive and more efficient at once. Galp Energia also participates in development clusters of energy and petrochemistry, chemistry and refining in order to create more competitive development clusters in our country through partnerships with other companies and entities of Portugal’s scientific and technological system. In biofuels, we are investing in sustainable energy cultures through projects developed with

Statement of the chairman of the executive committee

Aware of our economic, social and environmental impacts on every location we operate, we work every day to guarantee the company’s sustainability in the long run.
Portugal’s scientific and technological system. On the other hand, in retail, our distribution network increased in the Iberian Peninsula with the acquisition of Agip’s and Esso’s networks, expanding our operations internationally.

The third sustainability report corresponds to the need to communicate the strategy, the values and policies of Galp Energia group companies on a continuous basis, transparently integrating our sustainability practices with our business strategy and trying to fulfil the expectations of our stakeholders.

Galp Energia’s sustainability practice rests on the following values:

- Focus on the client
- Teamwork
- Entrepreneurship and orientation to results
- Individual development and advancement
- Innovation and continuous improvement
- Integrity and transparency

All our concerns are reflected in this document that we now present, showing the good practices and the Group’s commitment to all its stakeholders.

In order to ensure the quality and transparency of this report it was prepared in accordance with the Global Reporting Initiative’s (GRI) G3 guidelines. It was externally assured by an accredited party.

Manuel Ferreira De Oliveira
Chief executive officer
Galp Energia
Background

The third sustainability report includes economic, social and environmental indicators, according to the Global Reporting Initiative’s G3 guidelines.
Sustainability

Galp Energia’s third sustainability report aims at communicating to every stakeholder the company’s activities in 2008 on the economic, environmental and social dimensions compared with the sustainability commitments for 2008 and for years to come.

The report includes economic, social and environmental indicators, allowing Galp Energia’s stakeholders to have knowledge of its performance and good sustainability practices as well of its technological development efforts and its activities to rise innovation. The most focused features will be strategy, energy efficiency, environmental impact, partnerships with universities and research centres, services and products offered to clients and the commitment to the well-being of employees and the communities where Galp Energia operates. Besides the social commitments reflected in the report, Galp Energia’s code of ethics will be drafted in 2009.

In order to avoid redundancies, the sustainability report is published at the same time of Galp Energia’s annual report and corporate governance report.

Galp Energia’s sustainability report is drafted every year since 2006 and is audited by an external accredited company. This report follows the Global Reporting Initiatives’s guidelines in its third version (GRI 3), according to which it achieved the B level.

The assurance method follows the structure of the International Framework for Assurance Engagements of the International Federation of Accountants in accordance with the ISAE 3000, the model for assurance engagements on subject matters other than historical financial information.

The assurance of the GRI self-declared application level and the analysis of the materiality of subjects considered in the sustainability report were evaluated in accordance with AA1000AS and GRI G3 in comparison with the benchmarked subjects. PricewaterhouseCoopers was in charge of this process.

Framework of the report

<table>
<thead>
<tr>
<th>Profile</th>
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<td>3.1-3.13</td>
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<td>4.1-4.17</td>
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<table>
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<tr>
<th>Management approach</th>
<th>Management approach disclosed for each indicator category</th>
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<table>
<thead>
<tr>
<th>Performance indicators and performance indicators of sectoral supplements</th>
<th>Answers to at least 20 performance indicators, at least one of each category: economic activity, the environment, human rights, society and product responsibility</th>
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Self-declared and assured GRI level

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<tr>
<th>Mandatory</th>
<th>2002 IN ACCORDANCE</th>
<th>C</th>
<th>C+</th>
<th>B</th>
<th>B+</th>
<th>A</th>
<th>A+</th>
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<td></td>
<td>Self Declared</td>
<td>✓</td>
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Optional

| Third party checked | ✓ |
|                    |   |

GRI checked
Relevant events in 2008

In 2008, Galp Energia acquired Eni’s and ExxonMobil’s operations for marketing oil products in the Iberian Peninsula through the subsidiaries Agip and Esso. These acquisitions allowed the company to double the market share and the number of service stations in Spain. The two operations are part of Galp Energia’s strategy, aimed at increasing the size of the Iberian operations in its core downstream market.

In April, Galp Energia acquired the Royal Dutch Shell’s oil product distribution business in Gambia, Swaziland and Mozambique. This acquisition was part of Galp Energia’s strategy to reinforce its presence in Africa capitalising on the excellent relationships in Africa in exploration and production and allowing future partnerships in biofuels.

The operation allowed an increase in the volumes of oil product distribution and a larger geographical diversification in Africa and market shares as well as the development of its businesses in Mozambique - Swaziland and Cape Verde -Guinea-Bissau - Gambia axis.
Major events in 2008

- **7 January**
  Acquisition of the first natural gas client in Spain

- **16 January**
  Entry in the market of electricity

- **21 January**
  New discovery of natural gas and condensates in the Santos Basin’s pre-salt cluster

- **30 January**
  Signing of an agreement to develop business in small hydro centres in Portugal

- **3 April**
  Signing of concession contract with the Portugal state to distribute natural gas

- **11 April**
  Opening of the first urban network of piped propane gas in Portugal

- **27 June**
  Approval of the concession contract of Port of Sines’s liquid bulk terminal by the competition authorities

- **14 March**
  Joining of the Business & Biodiversity Initiative

- **24 March**
  Signing of a cooperation agreement with Visabeira Moçambique in biofuels

- **6 May**
  Acquisition of Royal Dutch Shell’s fuel distribution businesses in Mozambique, Swaziland and Gambia

- **13 May**
  Signing of cooperation agreements in the energy area with Petróleos de Venezuela, S.A. (PDVSA)

- **6 August**
  Acquisition of Eni’s and ExxonMobil’s operations in the Iberian oil product distribution market

- **September**
  Discovery of gas and light crude in the Santos Basin’s pre-salt cluster in the blocks BM-S-24 (Júpiter), BM-S-8 (Bem-te-vi) and BM-S-11 (Iara)
  Celebration of the 30 years of Sines refinery

- **24 November**
  Signing of a partnership contract related to wave energy with the Wave Energy Centre

- **18 December**
  Acquisition of eight blocks in the tenth bidding round of exploration blocks in Brazil
Prizes

International prizes

Best of European Business prize
In February, Galp Energia was awarded the Best of European Business prize in the Growth with Return category, a distinction awarded by Roland Berger Strategy Consultants that elects the best European companies in three categories.

Investor Relations Global Rankings 2008
In the 10th edition of the Investor Relations Global Rankings, Galp Energia was awarded for Best Financial Disclosure Practice and was awarded the fourth place in Europe and the sixth place worldwide in the Oil & Gas Industry, which involved 160 companies from 32 countries. The Best Financial Disclosure Practice evaluates the quality of the information provided to investors and financial markets.

The 2008 Leading European Companies and Executives for Investor Relations
Galp Energia was acknowledged at the 2008 Leading European Companies and Executives for Investor Relations, a competition staged by the Institutional Investor, which distinguishes the best practices and the best investor relations professionals in Europe. Galp Energia was awarded the prize for Most Improved Investor Relations for the Oil & Gas industry.

National prizes

Investor Relations & Governance Awards 2008
Galp Energia was awarded at the Investor Relations & Governance Awards 2008, a competition hosted by Deloitte that acknowledges the best practices and the best investor relations professionals in Portugal. Galp Energia’s investor relations officer was awarded the Best Investor Relations Office prize.

COTEC-UNICER Innovation Product prize
COTEC and Unicer awarded the Pluma, the gas bottle created by Galp Energia, with the Innovation Product prize, which awards and publicly announces innovating products developed in Portugal but sold in the global market.

Nominations

Petroleum Economist Awards
Galp Energia was one of the finalists of the Petroleum Economist Awards, a competition hosted by the Petroleum Economist magazine that distinguished the best Oil & Gas companies in 2007. Galp Energia was nominated for Energy Executive of the Year, Enterprising E&P Company of the Year and Stakeholder Communication Award categories.

2008 Global Energy Awards
Galp Energia was chosen as finalist of the 2008 Global Energy Awards, a competition hosted by Platts. Galp Energia was also nominated for CEO of the Year and Rising Star Award categories.
The replacement cost adjusted net profit, which excludes the inventory effect, was up 14.2% from 2007.

Economic indicators and interpretation

Galp Energia’s IFRS-based net profit was 117 million euros in 2008, down 83.8% when compared with 2007. This change was essentially caused by accounting effect from inventory rightdown. In spite of the records of Brent oil prices in mid-2008, the price of each barrel of Brent crude oil fell to 36.5 dollars at the end of the year, or 62%. In 2007, the barrel of Brent had rose 37.1 dollars, or 63%. The inventory effect on IFRS-based net profit was –355 million euros. In 2007 there had been a 280 million euros gain.

The replacement cost adjusted net profit, which excludes the inventory effect, was up 14.2% from 2007. In operating terms, there was a 11.8% rise with the improvement of the performance of Refining & Marketing business segment offsetting a profit shortfall in Gas & Power and Exploration & Production. Financial losses were due to the rise in the average interest rate payable on the debt and to the lesser contribution of subsidiary companies.

For further information, Galp Energia’s 2008 annual report is available at www.galpenergia.com.

Core economic indicators

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (M€)</td>
<td>12,560</td>
<td>15,086</td>
<td>+20.1%</td>
</tr>
<tr>
<td>Staff costs (M€)</td>
<td>281</td>
<td>292</td>
<td>+3.8%</td>
</tr>
<tr>
<td>Retained economic value (M€)</td>
<td>610</td>
<td>28</td>
<td>-95.4%</td>
</tr>
<tr>
<td>Tax paid to the state (M€)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income tax</td>
<td>280</td>
<td>186</td>
<td>-50.5%</td>
</tr>
<tr>
<td>Tax on oil products (M€)</td>
<td>2,560</td>
<td>2,484</td>
<td>-3.0%</td>
</tr>
<tr>
<td>Purchase of products and services (M€)</td>
<td>630</td>
<td>680</td>
<td>+7.9%</td>
</tr>
<tr>
<td>Accounts payable (average number of days) (das)</td>
<td>26</td>
<td>19</td>
<td>(36.8%)</td>
</tr>
<tr>
<td>Net profit (M€)</td>
<td>720</td>
<td>117</td>
<td>(83.8%)</td>
</tr>
<tr>
<td>Adjusted net profit (M€)</td>
<td>418</td>
<td>478</td>
<td>+14.2%</td>
</tr>
<tr>
<td>Capital expenditure (M€)</td>
<td>466</td>
<td>1,560</td>
<td>+234.9%</td>
</tr>
<tr>
<td>Net assets (M€)</td>
<td>5,678</td>
<td>6,623</td>
<td>+16.6%</td>
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<tr>
<td>Net debt (M€)</td>
<td>734</td>
<td>1,864</td>
<td>+153.9%</td>
</tr>
<tr>
<td>EBITDA (M€)</td>
<td>1,213</td>
<td>449</td>
<td>(63.0%)</td>
</tr>
<tr>
<td>Adjusted EBITDA (M€)</td>
<td>891</td>
<td>975</td>
<td>+9.4%</td>
</tr>
<tr>
<td>EBIT</td>
<td>936</td>
<td>167</td>
<td>(82.1%)</td>
</tr>
<tr>
<td>Adjusted EBIT (M€)</td>
<td>620</td>
<td>693</td>
<td>+11.8%</td>
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<tr>
<td>R&amp;D costs (M€)</td>
<td>8.5</td>
<td>10.1</td>
<td>+18.9%</td>
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<tr>
<td>Investment spending and current expenses on environment, quality and safety (M€)</td>
<td>43.2</td>
<td>50.9</td>
<td>+17.8%</td>
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<tr>
<td>Sold volumes in E&amp;P (Mbbl)</td>
<td>4.8</td>
<td>3.8</td>
<td>(19.7%)</td>
</tr>
<tr>
<td>Probable and proven reserves of crude oil (Mbbl)</td>
<td>31</td>
<td>28</td>
<td>(11.1%)</td>
</tr>
<tr>
<td>Sold volumes of refined products (Mton)</td>
<td>16.0</td>
<td>16.0</td>
<td>0.5%</td>
</tr>
<tr>
<td>Sold volumes of natural gas (Mm³)</td>
<td>5,377</td>
<td>5,638</td>
<td>+4.8%</td>
</tr>
</tbody>
</table>

(1) Estimated value of the group’s Research and Development
(2) Includes the most relevant investments
Risk management

Galp Energia’s activities and results are submitted to the risk of competition, economic, political, legal, regulatory, social, sectorial, financial and business conditions changing. Investors must carefully consider these risks since they may have a substantive negative effect, whether separately or jointly, on the results of Galp Energia’s activities and its financial situation.

Measures implemented by the company’s management to mitigate some of these risks are identified when deemed appropriate. In addition, Galp Energia may also be negatively affected by market risks, such as the fluctuation of oil prices, natural gas and oil products, by changes in exchange rates and competitive conditions, by operational risks such as completion of projects, growth and estimates of reserves and resources, reserve development, dependency on third parties, among others.

Financial incentives

Galp Energia has applied for funds aimed at several oil and gas projects.

The set-up of an infrastructure network for the transportation and distribution of natural gas, integrated in the Iberian transportation system with land and sea connections to world markets, provides Portugal with a new source of primary energy as an alternative to the traditional ones. This will contribute to diversified forms and sources of energy supply, lower environmental impact, a more flexible and competitive production sector and more rational options for energy use by end consumers. The natural gas infrastructure has from 1993 benefited from financial support under successive EU programmes.

In 2008, Galp Energia received close to 8 million euros in subsidies from the European Union Third Framework Programme for natural gas companies and 148 thousand euros from the European Union Seventh Framework Programme for research and technological development related to the GINSENG project – Performance Control in Sensor Network developed in association with the Faculty of Sciences and Technology of Coimbra University and six international partners.

To the Seventh Framework Programme for research and technological development, Galp Energia also applied the COMET - Integrated Infrastructure for CO₂, Transport and Storage in the West Mediterranean, which is in the second approval phase.

In March 2008, Galp Energia signed tax incentive contracts related to the application to the refinery conversion project submitted in 2007 by Petrogal under the Tax Relief regulated by the Government decree Decreto-Lei n.º 409/99. It is a large project that involves Sines refinery and Porto refinery and will have an important impact on the increase of production and productive efficiency, the operational fit between both refineries and the impulse of the Port of Sines through the significant increase of transactions between the refineries.

This project will have a significant impact on the national industry – metalomechanics, electricity and construction – particularly on the construction phase, creating employment.

This project received the PIN + status, the only project in Portugal to receive this score. The application was submitted to the European Commission. Currently, the analysis and approval process is under way.

Galp Energia made two applications for the System of Tax Incentives to Research and Development in the amount of 8.5 million euros in research and development expenditures, which corresponded to an estimated deduction from income tax of 2.8 million euros. These applications are being analysed by the Innovation Agency.
In 2008, the Lisbon Energy Forum aimed to encourage reflection on the strategy of the gas industry in the context of the low-carbon economy and the development of renewable energy sources.
In order to discuss the issues related to Oil & Gas, the Lisbon Energy Forum promoted a reflection about new and more demanding challenges involving some of the main geostrategic players in the world.

Lisbon Energy Forum

Due to its total dependency on the international market, Portugal is one of the countries of the European Union where fossil fuel, such as oil and natural gas, has more weight as a conditioning factor of the economic activity. Hence, the country must diversify energy sources, investing in alternative energies, and raw material suppliers.

This was the concern at the root of the Lisbon Energy Forum, a forum series supported by Fundação Mário Soares from the outset.

The second edition of the event was an opportunity to discuss some of the most challenging energy issues of our time, such as the future of fossil fuel and challenges brought about by the Kyoto Protocol, the emissions of greenhouse gases and the subsequent global warming and alternative energies. The forecast is that fossil fuel will continue having a big weight on the consumption structure of developed countries and developing countries.

In 2008, the Lisbon Energy Forum aimed to encourage reflection on energy and environment issues and was devoted to “The strategy of the Oil & Gas industry in the framework for a low-carbon economy and the development of renewable energy.”

Some of the world’s major oil companies and four internationally renowned experts and speakers in energy and environmental matters participated in the Lisbon Energy Forum 2008.

http://www2.petrobras.com.br/
The speakers were the following:

- Maria da Graça Carvalho: University professor at Instituto Superior Técnico and currently main adviser in the European Commission’s Bureau of European Policy Advisers;

- Jeffrey E. Garten: Teacher at Yale University. He has previously worked in banking and held political positions in the Nixon, Ford, Carter and Clinton administrations;

- Claudia Kemfert: Head of the Energy, Transportation and Environment Department at the German Institute of Economic Research (DIW Berlin) and professor at Humboldt University in Berlin. She is an adviser to the president of the European Commission and an external consultant to the World Bank, the United Nations and the Intergovernmental Panel on Climate Change;

- Edward Glab: He worked at ExxonMobil over 25 years. Currently, he is a teacher and a director of the Knight Ridder Center for Excellence in Management and the Business and Energy Center of the College of Business Administration;

A number of distinguished personalities participated in the event: former Portuguese President Mário Soares, the Portuguese Economy Minister Manuel Pinho, in the place of Portugal Prime Minister José Sócrates, the Portuguese Parliament speaker Jaime Gama, in the place of the Portuguese President Cavaco Silva, and Galp Energia’s chief executive officer Manuel Ferreira De Oliveira, who summarised the speeches.

Aware of the importance of safe, reliable and accessible energy sources for sustainable economic development, participants discussed the transformation of current energy systems, with a view to a better use of technologies and an investment in innovation and in the development of new energy sources.
An integrated multi-energy operator

Our vision is to be the reference energy operator in the markets where we compete.
Galp Energia in the world

We are an energy company. We explore, develop and produce oil and natural gas in four continents. We supply energy every day to millions of people.

We make the world walk a little more.

Galp Energia is in several businesses through several affiliates. In this report, published information is limited to businesses operated by affiliates whose share of ownership is equal to or larger than 50%.

Exploration & Production

44 portfolio of solutions

The Exploration & Production business segment has projects all over the world. The exploration activity is fastly growing, especially in Angola and Brazil with the recent relevant discoveries in the Santos Basin. Production is currently made in Angola.

Main assets, activities and markets

Galp Energia’s exploration and production activities have a high profile in the world. In two years Galp Energia was able to increase 18 times its reserves and contingent resources, which currently amount to 2,141 million boe. This resource base has enough capacity to support production for 388 years at the levels of 2008. Its portfolio of 44 projects is the backup of the ambitious long-term goal of achieving a 150 thousand barrels of oil a day.

Exploration: Angola, Brazil, Venezuela, Mozambique, East Timor and Portugal
Development: Brazil e Angola
Production: Angola

Performance

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
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<tbody>
<tr>
<td>Production net entitlement (Mbbl)</td>
<td>4.6</td>
<td>773</td>
</tr>
<tr>
<td>Reserves and contingent resources (Mbbl)</td>
<td>3.7</td>
<td>2,141</td>
</tr>
</tbody>
</table>

Goals:

- Increase crude oil production;
- EBITDA growth

Refining & Marketing

1,509 service stations

The Refining & Marketing business segment transforms crude oil into refined products that Galp Energia predominantly distributes in its own network, mainly in the Iberian Peninsula. Galp Energia also has a growing presence in the biofuels area, an activity considered perfectly integrated in its current core business.
Our activities reach over 50 countries

Angola:
Present in this country since 1982. The only country actually in production with a cumulated production of 28 millions of barrels.

Nigeria:
Major oil and gas supplier of Galp Energia.

Mozambique:
One exploration and production project. Oil products distribution throw a network of 28 service stations.

East-Timor:
Five exploration and production projects.

Gas & Power

5,638 Mm³

Sales of natural gas

The activities of Galp Energia’s Gas & Power business segment are focused on the importation, distribution and sale of natural gas and the production of electricity through cogeneration plants.

Main assets, activities and markets

The sale activities of natural gas are focused on markets with high growth where Galp Energia hopes to double its sales from 6 bcm to 12 bcm, based on projects of natural gas consumption of the power area.

Natural gas supply: Algeria and Nigeria
Distribution of natural gas: Portugal
Sale of natural gas: Portugal and Spain
Electricity production: Portugal

Performance

Main countries

Crude oil supply: Nigeria, Brazil, Arábia Saudita, Algeria and Líbia
Product export: Spain, USA, Great Britain, Greece and Netherlands
Refining: Portugal
Marketing of oil products: Portugal, Spain, Angola, Mozambique, Swaziland, Cape Verde, Guinea-Bissau and Gambia

Goals:

- Increase energy generation;
- Increase of natural gas sales

Main assets, activities and markets

The only refining company in Portugal, with a refining company of 310 thousand barrels per day. Soon, the refinery conversion project will allow Galp Energia to have a better response to diesel demand in the Iberian Peninsula and to upgrade its production profile. The marketing network reached over 1,500 service stations at the end of 2008 after the acquisition of Agip’s and ExxonMobil’s Iberian operations and is an important connection of refining and marketing businesses.

Performance

Sales to direct clients (Mton)
Refining coverage (%)

Nigeria:
Major oil and gas supplier of Galp Energia.

Sustainability report    Galp Energia
05

Renewable energy and biofuels

Our mission is to create value for clients, employees and shareholders operating in the energy markets with ambition, innovation and competitiveness and promoting the respect for ethical principles and sustainability.
At the same time, Galp Energia has been evaluating the potential and opportunities for investment in hydro, wave and solar sectors. The company’s goal is to gradually build a portfolio of electric power generation designed to consolidate its solid and environmentally friendly presence in the sector. In this respect, Galp Energia plans to add negotiable capacity and flexibility to organised negotiation markets, thereby raising economic use and contributing to a growing share of endogenous primary energy in the domestic energy mix.

**Business portfolio diversification**

Galp Energia committed in 2008 to incorporating renewable energy in its business portfolio contributing to national and European goals of energy autonomy and reduction of pollutant emissions.

Ventinveste, SA, where Galp Energia holds a 34% stake, made a capital expenditure of close to 535 million euros until 2013 in the construction of eight wind farms with a capacity of 400 MW. An equipment of 80 MW may be added. In 2008 support activities of park licencing and connections to the electricity distribution network were made as well as activities of acquisition and set-up of wind turbines.

**Wind@sea**

The Wind@Sea project’s main objective is to evaluate the wind energy potential of the Portuguese west coast with a view to identify, select and characterise positions to install offshore wind parks. This action was developed by the consortium composed of Galp Energia, the main promoter, INETI, Instituto Hidrográfico (Portugal’s oceanographic laboratory) and Instituto Nacional de Engenharia e Gestão Industrial (Portugal’s research and development body in mechanical engineering and industrial management).

An evaluation of technical and environmental constraints to the installation of offshore wind parks will be made to define possible areas. Current and planned uses of the coast will be taken into account.

**Wave energy**

The conditions of the Portuguese west coast and the existence of the electricity distribution network near the coast enable Galp Energia to be successful in the development of wave energy projects. Believing that the Portuguese coast has potential to produce energy from waves, Galp Energia made studies that allowed strategy formulation.

Galp Energia has engineering expertise, operation of offshore systems and partnerships with experienced oil companies.

Galp Energia signed a partnership contract with the Wave Energy Centre whose subject was wave power. With this contract, Galp Energia aims at choosing and sourcing a technology under development to implement a pilot project in the Portuguese coast. This project’s goal is to produce electricity through a renewable energy source.

**Small hydropower plants**

Concerning small hydropower plants, Galp Energia signed a business development agreement with CasaisInvest, Conduril, Sofomil and Coba through SDMH, the Development Society of small hydropower Plants. This agreement’s goal is to study the possibility of licencing, building and exploring mini-hydropower plants in Portugal.
The Biofuel Project at Galp Energia

In 2008 Galp Energia set up the Biofuel Development Unit, whose structure is divided into two areas: Production, Supply and Distribution, and Agronomy Planning. This unit’s mission is to implement Galp Energia’s biofuel project developing the agroindustrial production with partner companies throughout the production chain, that is, from the raw material until the sale of second-generation biodiesel.

The formulated strategy rests on sustainability in the environmental, social and economic fronts of the project, a condition imposed by Galp Energia since the beginning. This strategy aims at decreasing the emissions throughout the product life cycle by choosing the most adequate oil seeds and by using innovating fuel production technologies with the same goal. Galp Energia is able to fulfil the sustainability demands required by the European legislation recently approved in Brussels attaining the goal of producing a sustainable fuel to be distributed in Portugal, forcing future generations to decrease carbon dioxide emissions at least 50% throughout the product life cycle in comparison with fossil fuel.

To follow the efforts to implement this future directive, essentially the regulatory work under preparation in the European Union, Galp Energia offered its services to the Portuguese Quality Institute / Technological Institute of Gas to help the European Committee for Standardization. In cooperation with the European Commission, the recently created technical commission TC383 is drafting a standard applicable to the sustainable production of biomass for energy use, participating in the development of calculation methods of greenhouse gases in production and biomass conversion and a fossil fuel comparator for each product’s life cycle.

Economic and social sustainability of projects in Africa

The formulated strategy rests on sustainability in the environmental, social and economic fronts of the project, a condition imposed by Galp Energia since the beginning.
**Major events**

### 2007
- Formulation of Galp Energia’s strategy for the biofuel sector;
- Memorandum of understanding signed with Petrobras to study the feasibility of joint biodiesel production, marketing and distribution projects;
- Development of the technological project for the construction of a second-generation biodiesel production unit;
- Strategic study to define a business model that aims at the joint production of raw material in Brazil for second-generation biodiesel production through a joint venture with Petrobras;
- Allocation of equipments and human resources to Mozambique’s agroindustrial companies;
- Development of farming models and Life Cycle Assessment for Jatropha Curcas Linn plantations;
- Agreement for a research and development project that aims at building a pilot unit of vegetable oil production for biodiesel from microalgae in Sines refinery;
- Agreement of technical and scientific cooperation signed with several universities and research centres to support the Biofuel Development Unit.

### 2008
- Start of farming activity at Galpbuzi with the first crops of Jatropha and sowing of food crops;
- Start of the research and development project for vegetable oil production from microalgae with preliminary studies at Sines refinery;
- Micro-location of Moçamgalp’s first production cluster in Chimolo, Manica province;
- Investment agreement signed with Petrobras and study of the micro-location of the Belém project is completed;
- Set-up of Galpbuzi and Moçamgalp, agroindustrial companies in Mozambique;
- Negotiations and development of partnerships to produce raw material in Mozambique and Angola (vegetable oils);
- Start of research and development project that aims at building a pilot unit of vegetable oil production for biodiesel from microalgae in Sines refinery;
- Continuation of technical studies and FEED to build a second-generation biodiesel production unit;
- First tenders and sourcing of equipments and other production factors for Galpbuzi;
- Studies and efforts to set up Moçamgalp’s first production site;
- Agreement for a research and development project for the production of vegetable oil in Mozambique.

### 2009
- Start of the research and development project for vegetable oil production from microalgae with preliminary studies at Sines refinery;
- Micro-location of Moçamgalp’s first production cluster in Chimolo, Manica province;
- Investment agreement signed with Petrobras and study of the micro-location of the Belém project is completed;
- Continuation of technical studies and FEED to build a second-generation biodiesel production unit at Sines refinery;
- Completion of phase zero of the microalgae project with strain selection for tests and definition of the engineering project for phase one of the pilot unit;
- First in vitro clonal propagation of Jatropha;
- First tenders and sourcing of equipments and other production factors for Galpbuzi;
- Studies and efforts to set up Moçamgalp’s first production site;
- Agreement of technical and scientific cooperation signed with several universities and research centres to support the Biofuel Development Unit.

### 2010
- Start of research and development works at Universidade de Trás-os-Montes e Alto Douro and Instituto de Biologia Experimental e Tecnológica in accordance with the agreements signed. First in vitro clonal propagation of Jatropha;
- Negotiations and development of partnerships to produce raw material in Mozambique and Angola (vegetable oils);
- Set-up of Galpbuzi and Moçamgalp, agroindustrial companies in Mozambique;
- Agreement for a research and development project that aims at building a pilot unit of vegetable oil production for biodiesel from microalgae in Sines refinery.

### 2011
- Micro-location of Moçamgalp’s first production cluster in Chimolo, Manica province;
- Investment agreement signed with Petrobras and study of the micro-location of the Belém project is completed;
- Continuation of technical studies and FEED to build a second-generation biodiesel production unit;
- Completion of phase zero of the microalgae project with strain selection for tests and definition of the engineering project for phase one of the pilot unit;
- First in vitro clonal propagation of Jatropha;
- First tenders and sourcing of equipments and other production factors for Galpbuzi;
- Studies and efforts to set up Moçamgalp’s first production site;
- Agreement of technical and scientific cooperation signed with several universities and research centres to support the Biofuel Development Unit.

### 2012
- Start of research and development works at Universidade de Trás-os-Montes e Alto Douro and Instituto de Biologia Experimental e Tecnológica in accordance with the agreements signed. First in vitro clonal propagation of Jatropha;
- Negotiations and development of partnerships to produce raw material in Mozambique and Angola (vegetable oils);
- Set-up of Galpbuzi and Moçamgalp, agroindustrial companies in Mozambique;
- Agreement for a research and development project that aims at building a pilot unit of vegetable oil production for biodiesel from microalgae in Sines refinery.

### 2013
- Micro-location of Moçamgalp’s first production cluster in Chimolo, Manica province;
- Investment agreement signed with Petrobras and study of the micro-location of the Belém project is completed;
- Continuation of technical studies and FEED to build a second-generation biodiesel production unit;
- Completion of phase zero of the microalgae project with strain selection for tests and definition of the engineering project for phase one of the pilot unit;
- First in vitro clonal propagation of Jatropha;
- First tenders and sourcing of equipments and other production factors for Galpbuzi;
- Studies and efforts to set up Moçamgalp’s first production site;
- Agreement of technical and scientific cooperation signed with several universities and research centres to support the Biofuel Development Unit.

### 2014
- Start of research and development works at Universidade de Trás-os-Montes e Alto Douro and Instituto de Biologia Experimental e Tecnológica in accordance with the agreements signed. First in vitro clonal propagation of Jatropha;
- Negotiations and development of partnerships to produce raw material in Mozambique and Angola (vegetable oils);
- Set-up of Galpbuzi and Moçamgalp, agroindustrial companies in Mozambique;
- Agreement for a research and development project that aims at building a pilot unit of vegetable oil production for biodiesel from microalgae in Sines refinery.
R&D cooperation projects to support the Biofuel Development Unit

Galp Energia’s biofuel production project brought new challenges to farming production and to vegetable oil’s technology. These challenges required a knowledge improvement, namely in the new cultures of vegetable oils. This need was reinforced by the low experience in extensively planting these species and by the sustainability demand in environmental, social and economic fronts.

Studies and tests, both scientific and of knowledge application, made by universities and research centres were important considering agriculture’s growing need to produce biomass for energy use as well as Galp Energia’s entry in a new operational area.

The use of qualified human resources and the promotion of a coordinated performance in order to explore the facilities and the accumulated know-how, on one hand, and the need for fast and effective answers to the problems arisen in the implementation phase of this project, on the other hand, are the main goals of the agreements signed in September 2008 with the following institutions:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eduardo Mondlane Mozambique University</td>
<td>• Degree and masters degree scholarships with the related logistic support; • Traineeships at agricultural explorations close to managing directors; • Organisation and financing of an annual seminar that motivates knowledge transference between Portuguese and foreign researchers.</td>
</tr>
<tr>
<td>University Trás-os-Montes and Alto Douro</td>
<td>• Unpoisoning of the jatropha plant that allows animal feeding; • Preventive of a fitossanitary strategy in order to mitigate plague and disease risk preserving the ecosystem.</td>
</tr>
<tr>
<td>Instituto Superior de Agronomia (Technical University of Lisbon)</td>
<td>• Technical support to the activities of partner companies in Mozambique; • Strategy to improve the Jatropha plant obtaining quantitative gains by using the best clons (genotype); • Support to the cultural technique in soil fertility; • Support to the installation of a campo de divulgação and test of energetic vegetable species.</td>
</tr>
<tr>
<td>Experimental and Technological Biology Institute</td>
<td>• Development of the in vitro fertilisation technique that allows the multiplication of the best clones obtain by mass selection; • Preparation of other uses of the Jatropha plant, such as medicine and utility uses (soap, coal, etc.).</td>
</tr>
<tr>
<td>University Évora</td>
<td>• Mechanisation of Jatropha planting with medium-term productivity improvement, starting at the harvest.</td>
</tr>
<tr>
<td>Technical University of Portalegre</td>
<td>• Technical support to the activities of partner companies in Mozambique</td>
</tr>
<tr>
<td>Agreements under preparation in Mozambique</td>
<td>• Mozambique’s Agrarian Research Institute; • Polytechnics with agronomous training; • Professional schools.</td>
</tr>
</tbody>
</table>
Sustainability criteria

The sustainability criteria that this fuel must fulfill to be considered in the goals appointed by each Member State were defined.

In addition, the directive set up potential reduction targets of greenhouse emissions for each type of biofuel considering the raw materials and the technology used.

Incentives to promote the development of new technologies that use waste, algae or dryland farming on impoverished soil as raw material to produce biofuel were planned.

Reduction of greenhouse gas emissions

By 2010, the overall greenhouse gas savings from biofuel marketed in the European Union must be at least 35% in comparison to fossil fuel, rising to 50% by 2017.

The directive established values of potential reduction of greenhouse gases for each type of biofuel, taking into account the raw materials and technology used.

Sustainability criteria and the European Union

In order to decrease biofuel reserves, the European Council agreed on the Directive on the Promotion of the Use of Energy from Renewable Sources, which will be each Member State’s basis to formulate strategies for using renewable energy sources and especially for setting rights and criteria that guarantee biofuel’s sustainability.

The analysis model of the life cycle used to evaluate Galp Energia’s production system proved that the production process of second-generation biodiesel from Jatropha nut and palm reduces over 50% the emissions of greenhouse gases, that will be the target of the Biofuels legislation from 2017.
Application range

The sustainability criteria are applied on every biofuel and bioliquid, whether they come from cultures inside or outside the European Union. The following are excluded:

- Biofuel from areas of high biodiversity value, such as virgin forests, grasslands, protect areas and areas included in the Red List of the International Union for Conservation of Nature and Natural Resources;
- Biofuel from humid forest zones with coverage over 30%;
- Biofuel from forest zones with coverage from 10 to 30%, barring evidence to the contrary, production in high biodiversity savannas, steppes and grasslands.

The increase and rural extension programme contributes to improve the population’s income, to promote rural development and the well-being of the surrounding population as well as to ensure the supply of raw material.
Jatropha and capture of $\text{CO}_2$

Using data on the plan of the jatropha culture in Galp Energia’s projects, the quantity of $\text{CO}_2$ released during the planting process (629,888 ton $\text{CO}_2$). The results show that in less than 6 years the crops of jatropha curcas L. capture enough $\text{CO}_2$ to recover the $\text{CO}_2$ previously released. The number of years until the full recovery depends on the planting technique and on the species annual growth rate$^{*}$.

<table>
<thead>
<tr>
<th>Years</th>
<th>Cumulate $\text{CO}_2$ (ton)</th>
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<tr>
<td>0</td>
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</tbody>
</table>

$\text{cumulate CO}_2$ captured  $\text{cumulate CO}_2$ emissions

* Constant annual growth rate: 4 ton C / ha ($14.7$ ton $\text{CO}_2$ / ha) 1.429 plants / hectare.

Biofuel and indirect effects

Until the end of 2012, the European Commission will announce the methodology to evaluate the indirect effects of changing land use considering the last scientific evidence and the European Union’s international commitments. The institution may enforce corrective measures.
Social criteria

The State Members will have to publish reports every two years on the impact that biofuel production in developing countries may have on the supply of foodstuffs and in terms of wider social implications.

Strategy and goals

Galp Energia’s strategy aims to produce and market second-generation biodiesel in Portugal and Europe from competitive and sustainable vegetable oil produced in Africa and Brazil.

Strategic Guidelines

- Relevant position in renewables energies
- Reference in European biofuels market
- Innovations process and R&D in biofuels

Key indicators

<table>
<thead>
<tr>
<th>Controlled Raw materials coverage (%)</th>
<th>5%</th>
<th>15%</th>
<th>90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiesel Production (mil ton)</td>
<td>250</td>
<td>250</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>2013</td>
<td>future</td>
</tr>
</tbody>
</table>

Geographic action areas

Prime ongoing projects currently in development and partnerships

- ECOFINING SINES BIODIESEL HVO
- GALPBUZI – Vegetable Oil (Mozambique)
- MOÇAMGALP – Vegetable Oil (Mozambique)
- J.V (GALP e PETROBRAS) – Vegetable Oil (Brazil)
- Algae R&D
By 2020, Europe is committed to reducing its emissions of greenhouse gas by 20%, 20% of energy production must come from renewable energy sources and energy efficiency must rise 20%. These are the European Union’s strategy to fight climate change, which is known by 20/20/20.
Energy efficiency
Galp Energia is committed to these goals by promoting internal initiatives and actions for clients which aim at energy consumption efficiency and a better management of CO₂ emissions. Galp Energia developed various measures to improve its performance in the whole value chain. The major projects are presented in this chapter.

**Energetic goals**

By 2020, Europe is committed to reducing its emissions of greenhouse gas by 20%, 20% of energy production must come from renewable energy sources and energy efficiency must rise 20%. These are the European Union’s strategy to fight climate change, which is known by 20/20/20.

**Refineries**

Under the refineries energy reduction, Galp Energia has been implementing a set of measures by adopting the best technologies available in order to decrease energy use, to promote energy efficiency and to decrease the emissions of carbon dioxide.

At first, a comparative study was made, which allowed the company to define the measures considered to have priority for both refineries in three categories:

1. Projects that do not require capital spending and have immediate effects, such as the increase of furnaces efficiency and the recovery of condensates/steam, which reach 10% of the planned reduction;

2. Projects of medium-size capital spending, such as the replacement or installation of recovery equipment for condensates, oxygen analyzers and steam flow meters and come into operation of Sines cogeneration unit, which represents about 22% of the planned reduction;

3. Projects of large-size capital spending, such as the revamp of some facilities, the recovery of flare gases and the streamlining of desulphuring, which represents 68% of the planned reduction.

The chart illustrates the expected reduction of consumption in both refineries until 2011. From 2011, the consumption amounts will rise. The basis amount for the analysis is the 2007 consumption and in the following years there is a reduction corresponding to the measures shown.

Overall, the goal is to reduce energy consumption about 181 ktep per year in Sines and Porto refineries.
2008  Reduction with temperature and pressure improvement, use of steam reboilers, steam recovery and waste gate;

2009 / 2010  Reduction with cogeneration, the recovery of steam and condensates, the increase in the exchange area and energy integration;

2011  Reduction with the revamping of the trem for exchange of air distillation, stop ISOMAX, lower consumption in the hydrogen production unit, recovery of flare gases, new exchanger Packinox/joint consumption with new units.

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**Sines refinery (tep/year)**

![Graph showing energetic reduction compared to 2007 and consumption with new units for Sines refinery.]

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**Porto refinery (tep/year)**

![Graph showing energetic reduction compared to 2007 and consumption with new units for Porto refinery.]

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**2008** Reduction with the recovery of steam/condensates and furnaces losses;

**2009** Reduction with the replacement or installation of waste gate, oxygen analysers and steam meters;

**2010** Reduction with the replacement of the Utilities turbine and tank insulation;

**2011** Reduction with the optimisation of trem, the exchange of air distillation, desulphuring, cogeneration plant, revamping of the air distillation furnace, recovery of flare gases, replacement of the ISOMAR turbine, joint consumption with new units.
In a first phase, the project is being implemented in twelve service stations and the goal is to progressively expand the project to the rest of the network creating an energy efficient service station concept with electricity production from renewable energy sources.

The energy efficiency potential corresponds to an up to 10% invoice reduction in this first project. In the environmental plan, the decrease potential of carbon dioxide emissions is 12 tonnes per year.

**Service Stations**

With a network of service stations that spans the Iberian Peninsula, Galp Energia has a significant potential for energy microgeneration with renewable content.

**Energy efficiency project at service stations**

Galp Energia is developing a set of actions in its service stations that aim at energy consumption reduction, an integrated energy management and decentralised energy production using renewable energy sources with a view to promote sustainable energy and environmental solutions which allow a more rational use of resources.

The implementation of the project in the twelve service areas went through interventions in the most energy spending equipments, such as air conditioning and refrigerating equipments. Significant savings in electricity consumption and an improvement in the shops’ comfort are expected. Electricity production will be achieved through the installation of micro photovoltaic modules in each service station with 3.6 kW of installed capacity. These actions will be monitored using an energy management integrated system that will allow to know live the energy behaviour of service areas. The information is gathered through electricity meters with remote reading capacity. These equipments send information on consumption and energy production to an accessible online platform.
Galp Energia’s Buildings

A set of measures not only in the energy plan but also in water management was implemented in order to improve the performance of Torres de Lisboa (Lisbon Towers), Galp Energia’s head office.

**Implemented measures**

Energy management, work conditions and water consumption management

- At Tower A, the entire lighting is of low power consumption;
- At Tower A, the New Air Treatment Units (UTAN in Portuguese) in charge of maintaining the air quality in the building have heat recovery;
- In both towers, the centralised technical management system controls the work schedules of lighting and the main equipments (UTANs, boilers, generators, etc.) in order to adapt them to the facilities occupancy rate;
- There are temperature probes that measure the temperature of the cold water supplied by the condominium in order to feed air refrigeration. Hence, it is possible to verify if air refrigeration is within acceptable levels for equipment workings;
- An external entity (Welding and Quality Institute) made air quality and lighting incidence measurements and an update of the several specialties was made in order to obtain updated information of each position’s working conditions.

**Measures to be implemented**

Energy management, working conditions and water consumption management

- Replacement of the lighting of Tower C by low power consumption lighting and electronic ballasts;
- Renovation of the UTANs of Tower C with heat recovery;
- Separation of electrical power measurements, currently made jointly, by tower in order to find where the highest consumptions are located;
- Installation of enthalpy meters in order to obtain accurate data on the quantity of frozen water supplied by the condominium;
- Increase the network of cold water temperature probes and the interconnection with the centralised technical management system in order to obtain a thorough record of this measurement.
Energy Efficiency for Clients

Galp Energia’s mission is to create client value. In order to integrate energy efficiency concerns in its value chain, Galp Energia promotes services and actions for industrial clients.

**Energy audits to industrial clients of natural gas**
The energy audit consists of a detailed analysis to energy use in the industrial complex. It also allows the understanding of equipments’ efficiency as well as energy waste points. Solutions to the problems found were presented.

In 2008, energy audits were made to some industrial clients aiming to draft mass and energy balances. Hence, every large thermal energy consumer fulfills the energy consumption rationalisation plan.

**Quality of the electrical energy**
To assess the quality of the electrical energy of its industrial clients, Galp Energia created a service that diagnosticates, corrects and prevents the occurrence of problems in the quality of the electrical energy that affect the guarantee of service continuity and the quality of tension waves in factory facilities contributing to an efficient resource management and to an effective cost reduction.

**Training session on energy efficiency**
Galp Energia has made training sessions that aim to alert the employees of their company clients to the efficient use of energy resources and to the adequate use of equipments and energy.

The training session aims at developing general themes related to energy.
In 2009, a portal of Galp Energia\textsuperscript{20} will be launched and its major goals will be to announce the case studies developed by scholarship recipients and to promote good energy efficiency practices. Hence, a dynamic knowledge archive about real energy saving experiences in industrial and company units of different economic sectors will be available on the Internet.

Efficiency in the industry, such as the rational use of natural resources like water (refrigerating and heat distribution processes) and the Sun (natural lighting) and other energy resources (electricity) which indirectly use natural resources (lighting, air conditioning, compressed air systems, etc.) promoting the reduction in use.

**University cooperation programme Galp Energia\textsuperscript{20}**

The Galp Energia\textsuperscript{20} is part of a strategy to reinforce the relations with the entities of the National Scientific and Technological System, namely universities. This project aims to develop research work on sustainable energy systems in Galp Energia’s largest clients in order to bring together solutions that correspond to their energy needs and propositions that are adapted to the market’s real needs, namely in sustainable energies and energy efficiency.

The initiative involves two universities with an enviable track record in the energy field: the University of Aveiro and Lisbon’s Instituto Superior Técnico through its Institute of Mechanical Engineering (IDMEC).

Research work related to the development of sustainable energy systems was dedicated to various industrial sectors, namely ceramic, cork, foodstuff industry and the production of equipments including facilities. Based on energy audits, the developed activities are an important contribution to the improvement of the energy workings model of several sectors allowing the recommendation of improvement opportunities in energy efficiency.

The Galp Energia\textsuperscript{20} positions itself as a model initiative in Portugal transferring knowledge between the business and the academic worlds.
Innovation, technology and relations with the scientific community

The sustainability of an enterprise inevitably comprises a strategic investment in innovation that creates competitive advantages.
SUSTAINABILITY REPORT

GALP ENERGIA

07
The Innovation power

The sustainability of an enterprise inevitably comprises a strategic investment in innovation that creates competitive advantages.

To consolidate this strategic long-term goal, Galp Energia improved the internal organisation of the Research & Development policy and its relationship with the National Scientific and Technological System.

Hence, the Research & Development coordination board was created and various cooperation agreements were signed with the most prestigious research and development centres and Portuguese universities with an enviable track record in the engineering and energy technology fields reinforcing Galp Energia’s relation with the academic world.

R&D Activities and Relations with the Scientific Community

Galp Energia has created strong relation with scientific community, by doing and develop some partnerships.

Research & Development policy

Creation of the Research & Development coordination board
To optimise Galp Energia’s intellectual potential and to fill a gap on the functional organisation of R&D management, Galp Energia created the Research & Development coordination board in January 2009. This new body will provide Galp Energia’s strategic technological planning and allow the measurement and reporting in a more consistent manner of the effort in activities of fundamental knowledge generation and technological development for the business.

R&D activities in the refineries

GINSENG project
Sines refinery made another innovating improvement in the development of state-of-the-art technological solutions by joining the GINSENG project, an international R&D initiative co-financed by the European Union Seventh Framework Programme.

The research team is composed of scientists of the University of Coimbra in association with groups from Ireland, Germany, Cyprus, United Kingdom and Sweden as well as the German company SAP, the world’s leading provider of business software. The overall goal is to develop an integrated technological solution that sustains a wireless control and safety network in an industry setting where performance is critical.

The use of wireless sensor networks makes monitoring systems cheaper and more flexible.

Sines refinery was the chosen location by the research team to test the wireless sensor networks due to the safety challenge since it is an extremely controlled and adverse environment. In the refinery, the industrial processes, safety and pollution are monitored. The solution will encompass the whole process from the reception of the crude oil at the port until the refinery and the process in the industrial unit where crude derivatives are produced.
Vortex Separation System Project
Galp Energia made an engineering study for the development of several improvements in the Fluid Catalytic Cracking (FCC) unit of Sines refinery in a joint effort with UOP, the engineering company of the Honeywell group. The goal of this study is to increase the processing capacity of this unit from 35 kbpd to 45 kbpd, with an increase in the residue percentage in the load. After this study, the major changes in the FCC unit will be in the reactor and the catalyst. The reactor became Vortex Separation System (VSS), which replaced Vented Riser (VR). Every internal element of this equipment was changed. In the catalyst the cyclone system and the combustion air distributor were redesigned with the purpose of installing a cat cooler in the future.

Dust Sampling Project
The reduction of the environmental impact of Sines refinery’s activities is one of Galp Energia’s worries. Hence, Galp Energia wants to develop a fourth-phase separator for the FCC unit that will consist of a filter system to be installed in the small particles line of the third-phase separator as well as a silo recovery that will enable the accumulation and sending of small particles to recycling. In this context, the filter system to be developed by Galp Energia depends on the quality of the gas to be treated and the limits to be attained. A measurement of particle levels was made as well as engineering studies of the UOP’s filter system. After the installation of the VSS systems and new cyclones in the FCC unit, a new measurement of particles should be made to verify the measurements obtained in 2007 and to allow the definitive choice of the technology to be developed. With this filter system, Galp Energia aims to reduce the particles in FCC’s combustion gases to values under 50 mg/Nm³.

Microalgae-based Biodiesel Production
As a leading company in the Oil & Gas sector in Portugal, Galp Energia has an important role in the national and international energy future. Galp Energia is committed to projects which contribute to energetic and environmental sustainability by investing in the development of renewable energy solutions with business potential and to mitigate environmental changes.

Biodiesel production based on microalgae fulfils the growing need of diversifying energy sources. In a joint effort with INETI, Portugal’s research and development body, and Algafuel, two experienced entities in research and development, Galp Energia signed a partnership in 2008 to develop and implement a production project in Sines refinery.

The development project has various stages. The first phase, which occurred in 2008, encompassed the geoclimatic characterisation of the production location, the analysis of facilities, water and sources of carbon dioxide, the summarised characterisation of the microalgae, the planting and isolation of the captured microalgae in the cone systems, the comparative evaluation and the microalgae inoculation. The next phase, dedicated to the development of a prototype that aims to evaluate on location a set of microalgae species with industrial potential for the synthesis of vegetable oils, is under assessment and may occur in 2009.
Bitubag – Sustainable transportation of bitumen

The African market has significant needs of bitumen to build roads. Many African countries import under different ways: in bulk, drums or ISO containers.

However, in these markets transportation of bitumen in bulk is difficult due to the limited logistic conditions. The use of metal drums and ISO containers are quite common but face various inconveniences, such as environmental impact, cost and logistic complexity.

Towards this situation, Galp Energia in cooperation with INEGI settled as a goal the creation of a sustainable large-scale bitumen exportation solution. The choice was the adoption of Bitubang, a technology whose patent is owned by the Austrian company BCS Group.

Hence, a Cooling and Packing unit (CPU) was installed in Porto refinery and the packing of bitumen started in April 2008.

The results of this technological innovation were positive, both in production streamlining and commercial dimensioning. Bitubag contributed to stabilise the production of Porto refinery, since sales may occur independent of the climate thereby eliminating the seasonality.

Large Portuguese and international construction companies that operate in African markets strongly adhered to this solution. In 2008, the turnover exceeded the 10,000 tonnes for several countries, namely Angola, Cameroon, Algeria, Congo, Senegal and Cape Verde.

Rubber modified bitumen in drainage layers project

Used tire rubber is an environmental problem. The incorporation of rubber in pavements is an interesting environmental and technical solution.

Recycled tire rubber has been used in the last years as a bitumen additive to improve its base attributes. The effect of Rubber Modified Bitumen may be seen in the improvement of product elasticity, which leads to pavements with less fissures and lower maintenance costs.

For Probigalp, a company where Galp Energia and Mota-Engil hold a stake, the challenge was to produce a Rubber Modified Bitumen which contributed to build draining pavements. These pavements absorb rain water preventing accumulation on the surface and car accidents. Reducing the noise caused by vehicles on the
pavement was also required to the Rubber Modified Bitumen.

In 2007, Probigalp started the studies to execute this project obtaining excellent results at early 2008. In A17 motorway, between Aveiro and Marinha Grande, the Rubber Modified Bitumen was used in some parts to build a draining pavement and to contribute to noise reduction. These parts are close to populated areas. The outcome of the application of the Rubber Modified Bitumen in A17 was very satisfactory. In addition to fulfilling the client’s request, driver safety and environmental benefits were guaranteed.

**Competitiveness clusters**

Galp Energia is part of the Petrochemicals, Chemicals and Refining cluster and the Energy cluster.

Galp Energia was one of the national companies that participated in the creation of these two reference clusters in Portugal.

The production of raw materials and intermediate products, goods that Portugal currently imports, by the Petrochemistry, Chemistry and Refining cluster will be one of its development vectors.

The project aims to aggregate a high number of companies from refining, petrochemistry and industrial chemistry industries in order to work in a more integrated manner.

In the research and technological development activities, an Industry-University Board will be created to bring together all the participants in the value chain including universities and research centres.

The Energy competitiveness cluster aims to meet the energy policy goals settled by the government raising the development of the Portuguese economy.

Probigalp is the only company in Portugal able to produce Rubber Modified Bitumen with different levels of rubber for different technical applications. Rubber Modified Bitumen is produced with low, medium and high concentration (7%, 15% and 22% respectively).

The Energy competitiveness and technology cluster will act as a think tank that stimulates the energy sector. Project execution is made by companies.

In the first phase, the following strategic issues were selected for promotion:

1) **Offshore energy**
2) **Solar energy**
3) **Energy efficiency**
4) **Advanced networks**
5) **Sustainable mobility**

In addition to the traditional structure, the created association will have a Scientific Board and a Consulting Board that will reinforce the cluster’s range contributing to a broad interest aligning in the energy sector.
Innovation at service stations

In order to improve and transform the service stations into future convenience areas, Galp Energia has been upgrading its network.

Orange Project
The Orange Project consisted of an innovating project of the future convenience concept. On the basis of the surveys conducted for this specific purpose, the project aims to bring supply into line with customer needs, to improve the food component by developing a more complete and healthy branded range.

In addition, the project aims to upgrade the bathrooms and the facilities reserved for people with reduced mobility and to create areas for children. Internally, the project aims to upgrade the facilities reserved for the staff, particularly bath and dining rooms. For environmental sustainability, new equipment has been installed to reuse water in carwashes.

Organisational innovation

Galp Energia has improved its communication channels with clients providing a better access to information.

Creation of the Department of Electricity Trading and CO₂ emission licences
As a supplier of integrated energy solutions and recognizing the importance of including the electricity market and the CO₂ emission licences market in its portfolio, Galp Energia created the Department of Electricity Trading and CO₂ emission licences, which is integrated in Galp Power.

The goal is to guarantee a sustainable management through energy and carbon dioxide pockets streamlining the development of the electricity market in a defensive outlook of Natural Gas clients in a liberalised market scenario.

Regarding the carbon dioxide emissions market, Galp Energia became in 2009 a member of ICE Futures Europe, which allows the
negotiation of European Climate Exchange emission contracts, namely EU Allowances and Certified Emission Reductions, an important step in the company’s strategy of incorporating the carbon market in its portfolio.

**Natural Gas Business Intelligence project**

In 2008, a business intelligence technological platform, which reinforced the management capacity of the Natural Gas unit, was implemented and has the following goals:

- To define a business intelligence model that represents the requirements of information, tools and procedures that are necessary to support the decision-making process;
- To define an initiative map with a view to implement the defined model ensuring the articulation of the various initiatives and respecting the priorities of the business;
- To make operational reporting to the energy services regulator (ERSE in Portuguese) more efficient through the automation of processes and the creation of mechanisms that make control of the information reported more easy.

**Natural gas: development of the Web channel for large clients**

The presence of natural gas on the Internet was reinforced in 2008 with more content. In the new natural gas website there is a reserved area with information related to each client’s consumption called Digital Counter (previously called Virtual Store).

The Digital Counter is the key interaction tool with the client on the Internet since it allows the client to have access to all the information related to its natural gas consumption. The client may send measurements and make enquiries, suggestions and complaints.

**Single Login GalpNet project**

At the end of 2008 a new business-to-business website called galpnet was launched, which gathered the various usernames and passwords that each client had in Galp Energia’s several applications. This extranet was developed under the Single Login project and its goal is to satisfy the needs of commercial clients.

At galpnet and with a single login (username and password), clients may do orders, manage their Galp Fleet cards and have access to the following information:

- News and highlights about each business;
- Announcement of changes in fuel prices;
- History of fuel prices;
- Products description;
- Safety description;
- Products and services of each business;
- Exclusive promotions for commercial clients.

At http://galpnet.galpenergia.com the client not only finds numerous exclusive products and services for his business but also a faster and more functional service. This initiative ended clients’ complaints related to website problems.
Under the capital expenditure planned for 2008, Duriensegás built a Gas Autonomous Unit (UAG in Portuguese) to guarantee the supply of natural gas to Vidago, Oura, Loivos and Pedras Salgadas after governmental approval. This UAG has technological advances that had never been used in Portugal.

The innovation consists of the installation feeding: as an alternative to the traditional electrical connection, an autonomous process that is composed of a 12 battery system connected to a set of six photovoltaic modules and to a small aerogenerator with a supporting electrical generator using natural gas as fuel was used. The installation is independent of the national electricity network.

Every pneumatic valve is enabled by natural gas. Contrariwise, the traditional system uses compressed air.
Innovation in sustainable mobility

Transports are one of the largest producers of carbon dioxide and other greenhouse gases. Committed to accomplish the goals of the Energy Efficiency National Plan to curb emissions of carbon dioxide of new vehicles sold every year by 2015 by at least 20%, Galp Energia aims to create more efficient mobility solutions that guarantee the clients’ confort.

Galp Energia – Carris partnership
As a supplier of fuel to companies which operate in the transportation sector, Galp Energia recognises the weight this sector has in energy consumption and carbon dioxide emissions. In a joint effort with Carris, Galp Energia implemented the following sustainable mobility initiatives.

Training in eco-driving
One of the actions was the promotion of training in eco-driving (defensive and economic driving) for clients that operate in this sector. The goal was to increase energy efficiency and to reduce clients’ mobility cost.

Electrical car
As an integrated energy operator that strongly invests in innovation and new technologies, Galp Energia is a partner of the electrical car project created by the Portuguese government.

It is an opportunity to integrate electricity in the offer of mobility solutions expanding Galp Energia’s product range. Considering the challenges of this project, Galp Energia has conditions to provide a geographically balanced network of electrical uploads through its network of service areas as well as a broad range of products and complimentary services according to the effective penetration levels of this new mobility solution.

Natural gas for vehicles project
The Natural Gas for Vehicles project aims to increase the use of compressed natural gas (CNG) by positioning it as an alternative fuel to traditional energy sources. Vehicle fleets that do circuits, particularly fleets of municipalities, are clients that may be interested in this business.

Following the fleet renovation cycle, clients may exchange the fleet for natural gas moved units. Galp Energia ensures the installation of private filling stations shared by clients that are interested in joining this alternative filling solution.

This project allows clients to diversify their fuel portfolio leading to a fall in mobility costs.

Mob Carsharing at Lisbon Towers
Mob Carsharing is an innovating mobility project based on the concept of carsharing by members of the MOB Club and is available in various points of the city according to mobility needs. Galp Energia signed an agreement with Carristem, which led to the opening of a new Mob Carsharing station at Lisbon Towers. This initiative aims to reinforce energy efficiency and sustainable mobility. Galp Energia’s employees may become members of the MOB Club and use cars for journeys in Lisbon.
Product and service innovation

In the last years Galp Energia has diversified its offer. The products are more innovating not only on the technological level but also in design and marketing.

**Minigas project**
The Minigas project’s main goals are to rise the sales of liquefied petroleum gas (LPG) through non-traditional uses, to acknowledge the Galp Energia brand as the supplier of the Minigas bottles, to rise the sales of Minigas (3 kg bottles) and subsequently the market share, to launch new sales channels (large stores, filling stations, LPG Shops) and to reinforce the innovation attributes of the Galp Energia brand.

**Lightspot project**
Lightspot is a new product concept for the outdoor lighting offer and its use is both domestic and commercial. The exclusive design is the main differentiation factor of Lightspot in a market where utility always exceeded design. Developed in Portugal in partnership with SNord, Lightspot is the most recent element of the Advanced Galp Technology, which includes the Hotspot heater, the awarded gas bottle Pluma® and Gforce fuel, products that reinforce Galp Energia’s image as an innovating, young and pioneering company in the development of solutions adjusted to the market and the most demanding clients.

**Technological solutions on natural gas**
Galp Energia and Sanyo signed an agreement to sell energy (kWh and kWe) using Gas Heat Pumps (GHP). The main goals are the following:

- Presentation of the technological solution that allows the satisfaction of the client’s energy needs (heat, air conditioning, electricity, etc.);
- The offers should guarantee:
  - Application to different types of clients (type-value offers);
  - An investment analysis;
  - The fulfilment of legal and regulatory requirements related to the energetic classification of buildings and air quality parameters inside the buildings;
- Creation of value offers for specific clients and implementation of a pilot client;
- Financing opportunities under the National Strategic Framework or another supporting framework;
- Identification of the requirements that must be considered in the communication plan to the market.

**Lubs project: product development**
The demand for lubricants is arising. As a strong participant in the lubricant business, Galp Energia satisfied the increasing demand in the sector. The LUBS project’s main goal was to develop the production of certain lubricants, which previously were provided by suppliers of Galp Energia and renamed.

Based on the knowledge increase about the lubricants’ characteristics, Galp Energia decided it was
Automobile Manufacturers Association (ACEA), the American Petroleum Institute (API) and the main equipment builders, with direct implications on additivation and lubricant formulation technologies.

In the trucks segment of the mineral product range of Galp Lubrificantes, the need for a product that fulfilled ACEA E7, API CI-4, MB 228.3, MAN 3275, Volvo VDS-3 and MTU Type II requirements was identified.

The factory of lubricating base oils was adjusted in order to incorporate a catalyst that allows the production of lubricating base oils with lower sulphur content. This process lasted one year, after which started the tests to the performance of the developed formula.

In July 2008 this new formula was successfully developed rising the competitiveness of Galp Energia’s lubricant range in the market and with a 30% decrease in the development cost compared with Reblend, which is temporarily used.

This process became relevant since it involved innovation processes in two separate phases. The first phase consisted of the reformulation of Galp Energia’s lubricating base oils to lower values of sulphur content. In the second phase, an added value product was created. Without this product, the continuation of the use of Galp Energia’s lubricating base oils could be jeopardised since most applications require products with these technical characteristics.
The main goal is to open Galp Energia to university communities and to technological companies to collect ideas for new products and services.

New research, development and innovation initiatives for 2009

In order to improve and promote the relation with the scientific community and to present new solutions, Galp Energia will develop new projects in 2009.

Rede Galp Inovação

In the first half of 2009, Rede Galp Inovação (Galp innovation network) will be launched, available on Galp Energia’s website and developed according to the paradigms of Open Innovation and Web 2.0 to connect the company to the collective intelligence of universities, the scientific and technological communities and technological companies that operate in the energy sector.

Rede Galp Inovação for the scientific and technological communities will have the following roles:

- To be a social network for dynamic registration of the profile and activities of network members as well as to stimulate networking;
- To accumulate innovations submitted by network members according to the technological needs announced by Galp Energia;
- To create scientific communities generated according to the technological needs announced by Galp Energia.

New offer of natural comfort services

The offer for 2009 consists of launching in the market a set of services considered necessary by clients, which aim to fulfil three relevant results: improve relationship, create client fidelization and raise client value creation.

The offers are the following:
- Maintenance service of facilities and gas powered equipment;
- An on-call service to solve gas-related problems reported by clients;
- An equipment sale offer (gas powered equipment, detectors, etc.).

The subscription of these offers aims to guarantee safety to clients and to act pedagogically on users’ behaviour with the promotion of the rational use of energy.

Integrated services of energy sales

In 2009, the necessary activities to provide Integrated Services of Energy Sales (SIVE in Portuguese) in the various phases of the life cycle will start.

SIVE aims to satisfy clients’ energy needs through energy sales. The client’s energy needs may be satisfied through the use of different systems:

- Hot sanitary water;
- Air conditioning (hot and cold);
- Steam, process heat;
- Electrical, etc.

Various energy sources (natural gas, electricity, solar energy) may be used through the most adequate technological mix. Its availability in the market must consider the following management principles:

- Optimization of the technological mix;
- Rational use of energy and emission reduction;
- Decrease of the systems operating costs;
- Maximization of client value creation;
Market liberalization in 2009 will allow clients of the third sector to compare offers not only in terms of tariffs but also in terms of aggregated services and to decide which offer better satisfies their needs. It is essential for the commercializer to decommoditize the relation with the client.

- Safety and reliability of the systems and the offered solutions;
- Execution of added-value services or services with higher complexity;
- Service quality;
- Adequate management of technical processes and legal requirements;
- Client fidelization.
In Brazil, the Tupi field has between five and eight billion recoverable barrels of oil. The oil is at a depth of about 5,000 metres, under rock and a thick layer of salt (pre-salt). This is an area which reaches 800 km from the state of Espírito Santo until the state of Santa Catarina including three sedimentary basins (Espírito Santo, Campos and Santos).

**Exploration & production – on the frontier of technological development**

Exploration & Production has worldwide projects and has gained importance at Galp Energia in the last years leading to a strong capital expenditure.

**Oil production in deep waters**

Oil exploration and production in deep water involves vast human, technical and financial resources considering the high technological and logistic complexity of the activities developed. Large multidisciplinary teams, composed of geoscientists and engineers, are formed. The period between the first studies and the decision to drill the first submarine well may exceed five years.

The oil exploration and production process in deep water is started with a seismic acquisition made by specialised boats. Result interpretation or seismic profiles allow geological visualization of the area and consequently the identification of zones with likely hydrocarbon accumulation. Later, drills are made using specific probes to operate on potential carbonated reservoirs.

Currently, the offshore oil blocks in Brazil are the most technological challenges for Galp Energia, namely:

- Capture of CO2 (knowing physical and chemical changes in the reservoir at long term);
- CO2 injection as an enhanced-oil-recovery method;
- Intelligent completion (sensor integration, control systems and mechanical functionalities in order to increase the reservoir’s production and recovery);
- Economic conversion from gas to the gas-liquid phase as well as the efficient transportation of liquefied gas in terms of cost and safety.

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**Tupi project – 1**

Gas pipeline
Green: Water injection well
Blue: Oil producing well
Blue: Oil producing well/gas injection well

**Area:** 115 km²
**Production start-up:** December 2010
**Water depth:** ≈2,145m
**Production facilities:** FPSO Tupi
**Processing capacity:** 100 kbopd
**Gas compression capacity:** 5 Mm³/d
**CO2 production:** split and reinjected in the reservoir
**Gas produced:** sent to Mexilhão platform through Tupi-Mexilhão pipeline with a length of 216km
**Number of production wells:** five with an option for additional four
**Number of water injection wells:** two with an option for additional three
**Number of water injection wells:** one with an option for additional one
Production of extra-heavy oil and gas in Venezuela

Under the attainment of its strategy of development and diversification of its asset portfolio in exploration and production in order to reach a sustained production level of 150 mbopd on a working interest basis in the long run, Galp Energia in association with the Venezuelan oil state-owned enterprise PDVSA has actively taken part in the certification project of reserves at Boyacá 6, in the Orinoco Belt.

Venezuela has the largest accumulation of proved liquid hydrocarbon resources in the world. The Orinoco Belt has the largest accumulation of heavy oil in the world with a total area of 55314 km² and an Oil in Place estimate of 1300 MMMBBl. In the last 20 years, a technological commitment was made to increase the recovery factor for oil fields in order to reach 20 per cent.

In Galp Energia’s participation in the Orinoco Belt, some of the most demanding R&D challenges will be in situ conversion, the modelling and control of thermal recovery techniques and the installation of rheology modifiers in order to produce and transport heavy oil. Rheology is the study of the flow of matter.

Participation in projects of natural gas liquefaction

Galp Energia will participate in the first project of Venezuelan gas exportation through two consortiums already formed, which will develop two gas liquefication trains. In both consortiums, Galp Energia has a 15% stake.

This project is located at Guiria and will have an annual LNG production capacity of 9.4 million tonnes, from which 1.5 million tonnes are for Galp Energia.

The consortiums where Galp Energia has a stake include international partners such as Chevron (USA), Qatar Petroleum (Qatar), Mitsubishi (Japan), Mitsui (Japan), Hitotchu (Japan) and Enarsa (Argentina), besides PDVSA, which has a 60% majority control.

The participation in this project is an opportunity for Galp Energia to develop skills in the liquefaction gas process, an interesting technological area which allows the gas transportation by sea.

In this project, the liquefaction of gas is from the exploration fields on Mariscal Sucre and Plataforma Deltana, which are located at the Venezuelan offshore. The strategic importance of the LNG market for Galp Energia is reflected in the new organisation of the Exploration & Production business segment. Currently, there is an area for the development of LNG projects.
Safety, security, health, quality and the environment

In June 2007, Galp Energia’s quality policy and security, safety, health and environment policy (SHE) were published through regulatory standards. Along with the SSA, its internal framework (referencial interno) was published explaining the several elements that sustain the SSA’s management system, whose implementation is under way at Galp Energia.
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These policies work as a role model for Galp Energia’s employees in the following moments:

- Establishing priorities in economic, financial and human resources allocation;
- Decision on alternative solutions (technological, logistic, etc.);
- Change analysis instalations, on equipment and human resources;
- Daily activity.

Hence, Galp Energia guarantees that the most favourable decisions for the attainment of goals in the environmental, social and economic aspects, which are the development issues, are made.

Aware of the importance of the management commitment and the dedication of every employee and service supplier, Galp Energia distributed paper versions of the quality policy, SHE policy and the internal framework of the SHE management system to every employee.

Projects and capital expenditure

Galp Energia has invested in projects that mitigate its environmental impact and follow the best practices promoting the safety culture across the whole value chain.

Projects for refinery conversion

In 2008, Galp Energia’s projects for refinery conversion received the PIN+ (strategically important project with national interest) distinction.

Throughout the year, evaluation of the environmental impact of the refinery conversion projects was completed with the request addressed to the national reserve to obtain licences for greenhouse gases emissions of the new installations and with industrial licencing. The environmental impact assessment process occurred at the same time as the reassessment process of the environmental licences.

Studies related to the environmental and safety risks inherent to the refineries’ activity were carried out. The conclusions of the studies reveal that risks for people are acceptable in any scenario and there is no intolerable risk situation. In addition, consequences for the environment are moderate or light.

The projects for refinery conversion, which will align the national production with the market demand, follow the best techniques available in the sector. Galp Energia gave priority to energy integration actions of the new units.

Service areas and filling stations

In December 2008, Galp Energia started a project for environmental risk analysis of the activity developed in the liquid fuel filling positions of Galp Energia’s retail business. The project will conclude with the creation of a key support tool in the identification of the areas with a largest exposure to environmental hazards in water resources, flora and fauna. Later, this tool will guarantee a higher understanding and support in the
decision-making process, the scheduling of actions according to their priority and the capital spending on facilities.

After the actions made in 2007 and 2008 under the programme for managing underground tanks and following the principle of prevention and management of environmental liabilities at distribution oil, the programme will expand in 2009 to clients’ points of supply ensuring the glass coverage of older tanks. In 2008, 95 tanks in Northern Portugal and 63 tanks in Southern Portugal went through glass coverage.

**Galp Spain**
In 2008, the agreements between oil companies and the Spanish autonomous communities increased. It is expected the expansion to the other Spanish communities in 2009. These efforts aim to improve air quality by implementing steam recovery systems, which minimise the emissions of volatile organic compounds. With the installation of control devices for a timely detection of any type of accident in the facilities, Galp Energia aims to improve the quality of water resources and the soil.

**International Oil**
In addition to the fulfilment of their activities’ regulatory requirements, the companies which compose the International Oil by their own initiative apply the best available techniques and follow the environmental, quality and safety standards.

At Guinea-Bissau, Galp Energia made a strong capital expenditure in the retail network and in gas and fuel parks and numerous actions related to safety, health and the environment (SHE) were developed. In 2008 Galp Energia made internal audits to the safety levels of filling stations and storage facilities of liquid fuel and liquefied petroleum gas including the assurance of legal compliance with the European Union requirements for SHE issues. Special attention was given to the safety levels in filling, transporting and unloading liquid fuel at filling stations.

**Natural gas**
Following the ATEX directives, Galp Energia created a new service for its natural gas clients. This service aims to draft a protection manual from explosive atmospheres concerning industrial facilities, which follows the Portuguese law, European Union directives and national and international standards and codes.

Concerning their facilities, clients gather important information related to the assessment of explosion risk caused by the formation of explosive atmospheres, hazardous area classification as well as
Hence, clients gained skills to identify risk situations and to act according to safety procedures. In 2008, there were 20 training sessions that involved 150 clients.

Technical and organisational measures to be implemented in order to minimise the risks of these incidents.

To teach how to obtain an effective operational performance at the installation supplied with natural gas, Galp Energia promoted training sessions for industrial clients of natural gas. These sessions aimed to teach safety and emergency procedures in case of a natural gas leakage as well as preventive maintenance actions. Hence, clients gained skills to identify risk situations and to act according to safety procedures. In 2008, there were 20 training sessions that involved 150 clients.

Environment, Quality and Safety legislation project
The Environment, Quality and Safety legislation project, which aims to develop and provide a system of identification, requirement analysis and internal communication of the pertinence for Galp Energia of new laws in Portuguese, Spanish and European Union legislations and of products and services of the management units and Galp Energia’s facilities under EQS, took place in 2008. In addition, the possible relation with the previous laws was verified.

After the initial verification of every pertinent law, Galp Energia will promote its update and periodical announcement to the whole company.

Environment
With the new environmental paradigm, European Union policies that defend the harmlessness of industrial activities to Nature and to the human being have developed in the last years. The year 2008 brought up new challenges in various legislations and the production of technical elements, particularly the amendment of the Integrated Pollution Prevention Control (IPPC) Directive, the amendment of the directive related to the European Union Emission Trading for the post-2012 Emission Trading System and the amendment of the Reference Document on Best Available Techniques for Mineral Oil and Gas Refineries (BREF).

Aware of the importance of joint efforts in these matters, Galp Energia intervened along with European peer companies through the sector’s associations (CONCAWE and EUROPIA). Galp Energia cooperated and technically participated in a set of task forces about current issues: IPPC Special Task Force, Climate Change, Air Quality Impacts, Benchmarking CO₂, Refineries Processes Optimization, Air emission factors, Volatile Organic Compounds emissions and Biofuels. This participation aims to intervene in environmental strategic planning at a national and European level.
## Operational data

<table>
<thead>
<tr>
<th>Core environmental indicators</th>
<th>2007</th>
<th>2008</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Refineries</strong> (includes the lubricant and aromatic plants)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processed load (kt)</td>
<td>14,307</td>
<td>14,068</td>
<td>(1.7%)</td>
</tr>
<tr>
<td>Energy consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Gas (kt)</td>
<td>316</td>
<td>332</td>
<td>5.0%</td>
</tr>
<tr>
<td>Process fuel residues (kt)</td>
<td>512</td>
<td>470</td>
<td>(8.3%)</td>
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<tr>
<td>Natural gas (t)</td>
<td>7,473</td>
<td>24,957</td>
<td>234.0%</td>
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<tr>
<td></td>
<td>Electrical power (GWh)</td>
<td>583</td>
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<tr>
<td></td>
<td>Electrical production (GWh)</td>
<td>550</td>
<td>519</td>
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<tr>
<td></td>
<td>Water consumption (10^3 m^3)</td>
<td>8,354</td>
<td>7,918</td>
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<tr>
<td></td>
<td>Water reused (10^3 m^3)</td>
<td>653</td>
<td>757</td>
</tr>
<tr>
<td></td>
<td>Effluents (10^3 m^3)</td>
<td>4,374</td>
<td>4,200</td>
</tr>
<tr>
<td></td>
<td>Recovered hydrocarbons (10^3 m^3)</td>
<td>2,938,372</td>
<td>2,949,947</td>
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<tr>
<td></td>
<td>CO₂ emissions (t)</td>
<td>6,647</td>
<td>5,948</td>
</tr>
<tr>
<td></td>
<td>Total CO₂ emissions to processed load (%)</td>
<td>0.0045</td>
<td>0.0100</td>
</tr>
<tr>
<td></td>
<td>Particle emissions (t)</td>
<td>1,359</td>
<td>1,073</td>
</tr>
<tr>
<td></td>
<td>Total particle emissions to processes load (%)</td>
<td>0.0095</td>
<td>0.0080</td>
</tr>
</tbody>
</table>

| Logistics | | | |
| Total movement at LPG parks (kt) | 490 | 459 | (6.3%) |
| Total movement at logistics parks (kt) | 6,094 | 6,882 | 12.9% |
| Diesel consumption at logistics parks (t) | 1,017 | 1,038 | (2.1%) |
| Electric power consumption at LPG parks (kWh) | 2,671,347 | 2,484,021 | (7.0%) |
| Electric power consumption at logistics parks (kWh) | 1,894,483 | 3,220,137 | (70.0%) |
| Water consumption at LPG parks (10^3 m^3) | 70,112 | 70,869 | 1.3 |
| Water consumption at logistics parks (10^3 m^3) | 4.7 | 3.7 | (21.3%) |
| Product transportation mileage, km | 37,800,334 | 36,350,263 | (3.8%) |
| Effluents – rejected volume (m^3) | - | - | - |

| Exploration and Production | | | |
| Flare Gas (MMSCF) | 224 | 296 | 32.1% |

| Natural gas distribution (1) | | | |
| Use of materials (t) | | | |
| Polyethylene (10^3) | 2.0 | 1.2 | (41.2%) |
| Steel | 186.9 | 58.7 | (68.6%) |
| Electric power consumption at the distributors’ buildings (kWh) | 1,334,782 | 945,950 | (29.1%) |

| Cogeneration | | | |
| Electric power production at Carriço Cogeração and Powercer (GWh) | 275 | 244 | (11.3%) |
| Steam production (GWh) | 386 | | |
| Natural gas consumption (m^3) | 70,712 | 70,859 | 1.3 |
| CO₂ emissions (t) | 166,610 | 152,440 | (8.5%) |
| Water consumption at Carriço Cogeração (10^3 m^3) | 4.7 | 3.7 | (21.3%) |

| Service areas in Spain (2) | | | |
| Electric power consumption (kWh) | - | - | - |
| Water consumption (m^3) | - | - | - |

| Service areas in Portugal | | | |
| Electric power consumption (kWh) | 12,856,538 | 25,588,720 | 99.0% |
| Water consumption (m^3) | 1,077,400 | 1,036,150 | (3.8%) |

| Edifícios torres de Lisboa (Torre A e Torre C)(3) | | | |
| Electric power consumption (kWh) | 2,980,420 | 4,692,977 | 57.4% |
| Gas consumption (m^3) | 33,883 | | |
| Water consumption (m^3) | 9,367 | 16,354 | 74.6% |

| Aviation(4) | | | |
| Electric power consumption (kWh) | 1,232,558 | 977,457 | (20.7%) |
| Water consumption (m^3) | 1,920 | 1,852 | (3.5%) |

| Refineries, lubricant and aromatics factories, logistics and LPG parks, aviation | | | |
| Non-dangerous industrial residues (t) | 17,916 | 42,975 | 139.9% |
| Dangerous industrial residues (t) | 30,639 | 46,991 | 53.4% |

---

(1) Natural gas consumption rose due to the national plan for emission reduction, which sets mass limits for particles, NOₓ and SO₂. Porto refinery started using natural gas in 2008 and Sines refinery increased its consumption.

(2) This increase reflects the start of NAP II, where the aromatics factory is now included in the emission licence of Porto refinery. Prior to 2008 its emissions were not included.

(3) Proval park in Spain was included in 2007. Hence, there was a significant increase.

(4) In 2008, the scope changed since only the distributors where Galp Energia holds an over 50% stake were considered.

(5) Indicators that were not assured.

(6) The increase reflects the opening of the restaurant in Galp Energia’s Tower C.

(7) The amount does not include the Pool of Faro, Porto Santo, Funchal, Horta, Ponta Delgada and Santa Maria.
Environmental impact

Our activity and our impacts are here described.

Resource consumption
Reﬁneries have made efforts with visible results in order to maximise water reuse. The reﬁneries water consumption are within the BREFs values.

Service areas have also implemented water consumption saving measures, namely through the use of treated efﬂuents for irrigation water. Powercer Cogeneration condensates 50% of the water used in steam production.

Emissions
The year 2008 marked the start of the second trading period of the European Union Emission Trading Scheme, which will expire in 2012. Its accomplishment in Portugal through the National plan for allocation of emission licences brought up more challenges than the 2005-2007 period since most sectors covered by the regime had less emission licences.

In a sectoral approach, the following chart illustrates carbon dioxide emissions of Galp Energia’s facilities (reﬁneries and explored cogenerations) related to emission licences. The remainder is patent.

Even if the reﬁneries emissions increase with the new units coming on stream, which may be explained by the rise of the productive capacity, the energy integration of the units and the use of fuel with less carbon content (natural gas) will guarantee the minimisation of that emission increase. In Porto reﬁnery, the forecast is that the rise of emissions due to the additional production of diesel will reach 250,000 tonnes of CO2 per year. However, the energy integration measures may...
decrease CO₂ emissions related to the revamp of the existing units over 40,000 tonnes.

The refineries emissions are due both to electrical and steam production and to the process. Environmental control and energy streamlining are important features, whose examination is essential in project development and the environmental performance plans of facilities. Under the evaluation of the environmental impact of the refinery conversion projects, the situation and the impact of the activity on air quality were analysed. According to the studies, air quality surrounding refineries is acceptable and the impact of the exploration of new facilities will be moderate. The necessary minimisation measures have been defined. Nevertheless, there is a very significant fall in emissions due to expenditure made on refineries cogeneration plans contributing to the improvement of air quality.

Although the industrial activity is the main responsible for air emissions, other business units also make efforts to reduce their environmental impact. LisboaGás, for instance, revamped some pipes of the secondary network in order to reduce natural gas leakages.

Waste, liquid effluents, soil and water resources

Waste
The life cycle of Galp Energia’s products involves the use of packages. Hence, the company joined Sistema Integrado Ponto Verde (green point integrated system) as a packager/importer transferring to Sociedade Ponto Verde (Green Point Society, or SPV) the responsibilities, which are enforced by law, related to the waste management of non-reusable packages offered to the market.

As the licenced entity in charge of the package waste management integrated system (SIGRE in Portuguese), SPV ensures a joint management of the package waste that it receives guaranteeing recycling or valuation in order to attain established goals. Given the responsibility shared by all participants in the package management cycle, Galp Energia made a communication campaign to inform clients about this issue. This initiative, which involved close to 1,900 notices, aimed to announce the system adopted by the company in order to fulfil its responsibilities, that is, to clarify the procedures and eventually available services for package waste management (e.g. extra-urban service) and provide general information to answer frequently asked questions.

Regarding this issue, actions were made at the offices of Lisbon Towers. Separating waste into categories (cardboard and paper, glass, plastic and urban solid waste) has been implemented.

The year 2008 was an important year concerning the elimination of polychlorinated biphenyls (PCBs) and polychlorinated terphenyls (PCTs). These substances are highly dangerous to public health and the environment. Hence, their commercialisation and use are under legal restrictions. The legislation (Decreto-Lei n.º 277/99, de 23 julho amended by Decreto-Lei n.º 72/2007, de 27 de Março) enforces the elimination or decontamination of PCBs and equipments which contain them until the end of 2010. Galp Energia has already attained this goal, since it completed in 2008 the plan for the elimination of equipments with dielectric fluids which contain PCBs.

One of Galp Energia’s concerns has been the reduction of the carbon content of fuel, which leads to a fall in CO₂ emissions downstream from Galp Energia’s operations chain, in the transport sector. The law Lei n.º 51/2008 de 27 de Agosto enforced the announcement of the calculation of CO₂ emissions and other greenhouse gas emissions that correspond to the consumption of fuel sold through www.carbonoverde.pt, Galp Energia counted 1,012 CO₂ tonnes in plane journeys and 14,106 tonnes in car journeys of its employees in 2008.
Soil and water resources
Concerning the environmental front of soil and water resources, there is an integrated approach to prevention and management of Galp Energia’s facilities. The refineries and parks for liquid fuels have underground water quality monitoring systems, which use piezometers. Sampling campaigns are periodically made in order to control the underground water’s quality.

Liquid effluents from Galp Energia’s facilities are sent to treatment stations owned by Galp Energia or to other stations ensuring that offloading conditions fulfil established limits.

In 2009 there will be a project for quantitative analysis of environmental and human health risks caused by Galp Energia’s refineries and parks for liquid fuels, particularly on soil quality and underground water quality. This project’s goal is to define the model situation with the guidance of the environmental responsibility legislation identifying possible environmental and human health risks and formulating risk management methodologies.

Biodiversity
Galp Energia operates in various contexts and multiple ways in the several blocks of the operations chain.

Galp Energia’s refining activity does not interfere with protected areas. Under the evaluation of the environmental impact of the refinery conversion projects, an appraisal of land and ecological conditions was made.

At the surroundings of Sines refinery there are some protected areas,
namely endemic species of flora and fauna such as migratory birds, as well as protected natural and semi-natural habitats and dune systems. However, Galp Energia’s activities do not interfere with these habitats.

Porto refinery is at a great distance from any protected areas. An environmental diagnosis study of the sea habitat close to the discharge point of the effluent pipe of the refinery’s water treatment station was recently made due to the refinery being located on the coast. This study evaluated the quality of sediments, sea water and the local bentonic fauna along the coast, which is parallel to the west side of the facilities. The sample showed the absence of relevant impacts on the chemical quality of all the water and sediment sources analysed.

From the six wind parks currently under development (project and licencing) operated by Ventinveste, only two affect protected areas. However, given size and location characteristics, every Vestinveste project is covered by the legal framework of environmental impact evaluation. Currently, environmental impact studies are being drafted and the adjustment with the environmental values at each location is one of the major goals in layout conception of each project.
Safety

A safety is one of Galp Energia’s essential values. Various projects involving the whole organisation and every partner that works with us have been developed.

Galp Energia’s goal is to reach zero accidents ensuring that employees and neighbours of its facilities are not involved in any accidents or incidents

Safety programme

The attainment of this goal depends on a strong safety culture within the company. The Safety Programme’s goal is to actively contribute to the reinforcement of that culture and to implement a Safety, Health and Environment Management System, whose guidelines are in the internal framework of the security, safety, health and environment policy (SSA in Portuguese).

Corporate requirement orientate the implementation of Galp Energia’s Safety, Health and Environment Management System, which is reflected on Corporate Procedures – Galp Procedure Standards (NPG in Portuguese) – applicable to the whole organisation. Its implementation in the several facilities and business units has been one of major challenges of the Safety Programme.

Environment and safety preventive observations

In the effort to promote a safety culture in Galp Energia, the Safety Programme introduced in 2007 a new practice – Environment and Safety Preventive Observations (OPAS in Portuguese).

This tool, which aims to follow and continuously improve the employees’ behaviour at the different organisation levels, allowed the attainment of the following goals:

- The dialogue on safety issues at the different hierarchy levels;
- The discontinuance of risk behaviour as soon as it is detected;
- The identification of most frequent risk behaviours;
- The planning and structure of a set of actions to correct high risk behaviours.

Quick wins

While Environment and Safety Preventive Observations focuses on employees’ behaviour on different levels, quick wins aim to identify and announce low cost structural improvement opportunities with an easy implementation. The identified situations are evaluated and reported by the person in charge of the asset and are announced and shared within each business unit. These situations are only announced throughout the company when they may happen again. Its announcement allows the spread of good practices and the improvement of SSA’s performance.
Accident rate, communication and accident investigation

Accident investigation is one of the management elements contained in the SHE internal framework.

Under the implementation of Galp Energia’s SHE management system, every accident, occupational disease, quasi-accidents and SHE non-conformities occurred, whether critical or systematic, must be investigated according to the established rules.

To attain this goal, a Galp Energia Procedure Standard, which sets the incident reporting guidelines considering the multiplicity of situations, was developed. This standard guarantees that any occurrence in a management unit or company is communicated, classified, investigated and announced to the whole company.

This procedure aims at making zero accidents a reality avoiding personal accidents and property damage and preserving the environment. This goal may only be attained with employee’s continuous training including the necessary training, competences and means to effectively deal with anomalous situations.

Every personal, property and environmental incident occurred at Galp Energia’s facilities or locations where Galp Energia operates with its own employees or third-party workers as well as incidents which involve members of the community are covered.

Incidents occurred in the company are classified according to its severity in a four-level scale.

The accidents listed below were communicated in 2008. Accidents involving clients and service providers that caused property damage or involved Galp Energia’s services, even if the accident did not occur during the company’s activity, were included.

The significant improvement in incident and small accident communication led to a rise of the total number of accidents reported in 2008.

However, there were three fatalities in 2008, two of which involving service providers. These accidents
Concerning employees frequency index of accidents with sick leave, there were good results, which brings Galp Energia closer to the zero accidents goal.

In spite of the legislation and the communication campaigns related to precautions to be followed by consumers, this type of accident has not seized to occur. Galp Energia formed a task force that developed a set of initiatives, namely the reinforcement of consumer awareness at the point of sale, due to its concern in this matter.

The “Galp Energia tells a story” project, which included the launch of a book, a game that warns primary school students about safety rules when using LPG and natural gas and a promotional campaign for every piped gas client called “Guarantee well-being and safety at your home”. In this campaign, Galp Energia offered for sale a carbon monoxide detector.

In 2008, Galp Energia made an alignment effort with the best international practices in communicating key performance indicators. Hence, Galp Energia discloses frequency indices (number of accidents per million working hours) of personal accidents with sick leave for employees, excluding in itinere accidents and employees of service providers’ frequency index of accidents with sick leave.

The Global Frequency Index, which is the company’s frequency index role model, translates the accident rates of Galp Energia’s employees and service providers. As employee’s frequency index, the goal is zero accidents.

**Prevention of serious hazards**

The SHE policy has an internal framework which establishes and explains the several elements that sustain the SHE management system. These elements are the principles followed by the Prevention of Serious Hazards Safety Management System. In accordance with Government decree Decreto-Lei n.º 254/2007 related to the prevention of serious hazards involving dangerous goods, assurances by the Portuguese Environmental Agency were made to the twelve facilities covered.

In these assurances, whose reports were delivered to the Portuguese Environmental Agency, no major non-conformity was detected. In addition, 23 minor non-conformities were detected, which were accepted and whose corrective actions are part of an ongoing plan. This plan includes a set of observations and improvement opportunities detected in the assurances.

The outcome of these audits reflects the company’s safety culture, since safety reports, despite their compulsory nature, are dynamic documents that are part of the facilities’ daily management. This reflects the continuous prevention improvement efforts along with capital spending on safety facilities.
Reach

On 1 June 2007, EU Regulation 1907/2006, the so-called REACH – regulation regarding the evaluation, authorisation and restriction of chemical products, came into force.

According to this regulation, the manufacture and import of relevant substances will be subject to registration with the European Chemicals Agency, in accordance with the following timetable:

- From 1 June 2008 until 30 November 2008: Pre-registration of substances, either manufactured or imported, in amounts exceeding 1 tonne/year;
- By 1 December 2010: Registration of substances in amounts exceeding 1,000 tonnes/year and substances raising serious concerns because of the danger they may pose;
- By 1 December 2013: Registration of substances in amounts exceeding 100 tonnes/year;
- By 1 June 2018: Registration of substances in quantities exceeding 1 ton/year.

As in years earlier, in 2008 there was an increasing involvement from every business unit both in the internal preparation works for regulation fulfilment and the participation in European associations and consortiums’ activities to prepare registration files. These organisations are the Hydrocarbon Solvents Consortium (HCSC), the Fuel Ether REACH Consortium (FERC), the European REACH Grease Thickeners Consortium (ELGI), the Low Olefin and Aromatics Consortium (LOA) and CONCAWE, among others.

Galp Energia’s participation in these fora has been important. The covered product families are: fuel, base oils, bitumens, solvents, aromatics, and oxygenated additives. Galp Energia has a guaranteed representation at the general meeting or scientific committees of each one of those organisations and some of Galp Energia’s technicians participate in several task forces to prepare registration files.

Training and internal awareness sessions for the current and future impacts of REACH were one of the major concerns in 2008. Most technicians from the directly involved business units actively participated in these sessions. Overall, ten sessions in Porto and Lisbon involving about 140 people were made.

There was also a significant increase in information sharing, particularly client data. In addition to the two awareness and mutual understanding sessions organised for the chemicals business unit, Galp Energia received inquiries from over a hundred clients about its intentions of pre-registration and registration of goods sold.

Galp Energia completed on schedule the pre-registration of substances manufactured and imported. Overall, 155 pre-registrations from both Petrogal, S.A. and Galp Energia Spain were submitted.
Quality

Galp energia aims to improve its performance and recognises the fulfilment of the most demanding quality standards towards clients and employees.

Corporate responsibility

With the foundation of the Quality Board in 2008, Galp Energia applied the quality management principles that are contained in the Quality Policy approved in 2007.

This body aims to define and review the underlying goals in Galp Energia’s strategic vision for quality ensuring the participation of senior managers in the development and implementation of the quality management systems and the continuous improvement of their effectiveness and efficiency.

Problem solving

In 2008, Galp Energia reinforced the implementation of the structured problem solving approach through a five-step methodology. This tool is essential for the continuous improvement which allows an advanced and transparent problem solving in order to avoid problem reappearance.

In the 2008 programme several teams intervened in the Procurement,

Continuous improvement

Galp Energia deems its duty to commit to the continuous improvement of processes, products and services quality as a management priority and an essential tool in strengthening the brand. To ensure this goal, Galp Energia monitors and evaluates the performance of EQS management systems and promotes initiatives that sustain continuous improvement.

Five steps for problem solving:

1. Problem selection and definition. Define clearly the problem to be solved.
2. Temporary contention measures selection and implementation. Acting over the effects caused by the problem in order to protect customers.
4. Selection and implementation of final corrective actions. Implement measures that address the elimination of the problem root cause.
5. Monitoring and validation. Monitoring the evolution of problem occurrences for future validation of the initiative success.

* Quality functional bodies: Quality systems managers, nuclei centers, quality commissions.
Refining and Logistics Unit. Close to 150 employees participated and about a hundred cases were identified for analysis.

**Performance assessment**
The performance assessment of EQS management systems is a requirement of Galp Energia’s corporate standards. It is an essential promotional tool of the company’s overall performance improvement in EQS issues. Galp Energia approved the Annual EQS Auditing Programme for 2008. Overall, 76 EQS auditors participated in 49 audits for a total of 110 participations in 2008.

**Auditors**
To guarantee the permanent update of its auditors’ competences is a challenge for Galp Energia. In 2008, several training sessions for auditors were made including the 2nd Forum for EQS Auditors, which occurred in October and was attended by 50 EQS auditors, guests from Petrobrás and Galp Energia’s top managers.

**Quality and technological control**
Due to the increase of national, European and international legislation related to fuel quality and the emissions in the transportation sector, Galp Energia reinforced in 2008 its participation in CONCAWE and CEN, two renowned international organisations, with the following goals:

- Forecast of the consequences of future legislation and vehicle evolution on fuel quality and refining;
- Technical support guarantee and monitoring of scientific and technological research that stimulates the development of specifications;
- Participation in important technical programmes.

Hence, there was a contribution to ensure Galp Energia’s commitment to clients and shareholders to:

- Achieve the highest quality standards in every activity and process;
- Guarantee efficient use of resources and invest in innovating technologies and the best available techniques.

**Third party audits**
In EQS management systems, Galp Energia’s strategy was followed and strengthened in order to give confidence to clients when using Galp Energia’s products and services. In 2008, existing certifications were retained and a new certification was achieved: GALPGESTE’s NP EN ISO 9001.

<table>
<thead>
<tr>
<th>NP EN ISO 9001</th>
<th>NP EN ISO 9001 e OSHAS 18001</th>
<th>NP EN ISO 9001 e OSHAS 18001/ NP EN ISO 14001</th>
<th>NP EN ISO/IEC 17025</th>
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<td>Lubricants, aviation fuels, base oil plant, Galp Chemistry, Galp Gás, inspection of the Sines refinery, bitumen business, Probigalp, Galpgeste.</td>
<td>SAAGA</td>
<td>Setgás, CLC, Beiragás, Lisboaagás, Lusitaniagás, Tagusgás, Aveiro and Porto Brandão Parks</td>
<td>Laboratories at Porto and Sines refineries and Galp Lubs</td>
</tr>
</tbody>
</table>
Attracting talent and motivating employees

In human resources management, criteria and practices were developed to respond to the integration needs of the activities and the employees from different sectors and at the same time to respond to Galp Energia’s increasing development needs.
Attracting talent and motivating employees

The aim of Galp Energia’s human resources policy is to attract, develop, retain and motivate talent contributing to the development of the people and countries where Galp Energia operates. The methodologies, processes and tools that support the human resources policy are the result of a restless search to find the best management model of Galp Energia’s most important asset in order to create economic, human and social value. Stimulating and developing, creating opportunities and demanding, rewarding and evaluating, distinguishing and awarding, motivating and inciting the employee’s enthusiasm with the value of his work are challenges of Galp Energia’s human resources policy.

These changes are due to the development of Galp Energia’s expatriation policy. This policy establishes the conditions for expatriates, namely a visit of the employee and spouse to the destination country in order to choose a house, whose value is set by an analysis of the destination country’s cost of living, journeys, education expenses for the employee’s children, market alignment allowance to maintain the employee’s lifestyle and an expatriation allowance to compensate the expatriation impact on the family. The employee has also right to an installation allowance and to the maintenance of the social benefits held in the company.

In terms of gender distribution, 59% of the 7,817 staff were men and 41% were women. Men predominate in the industry and in Africa and women predominate in services.

In terms of top management, 372 (73%) were men and 138 (27%) were women on 31 December 2008.

The average seniority of staff at Galp Energia on 31 December 2008 was 10.6 years (compared with 11.8 years in 2007) and the average age was 39.3 years (39.6 in 2007).

Galp Energia’s social indicators on 31 December 2008 reflected the entries in 2008. Under Galp Energia’s internationalisation strategy, the number of employees rose 132.6% in Spain and 27.1% in the other countries.

In 2008, the number of staff was 7,817 employees, that is, a 34.8% rise.

Concerning the geographical spread of the staff, the percentage of employees in Portugal declined from 75% in 2007 to 61% in 2008. In Spain the percentage of employees rose from 20% in 2007 to 35% in 2008.

In Galp Energia’s staff, 20% are under 30 years old (compared with 21% in 2007), 59% have from 30 to 50 years old (57% in 2007) and close to 21% are over 50 years old (22% in 2007).
In terms of employee turnover rate, which is the number of employees who have left the company by total staff who work for Galp Energia in the same year, the gestes (filling stations) were once more significantly affected by the overall rate of 14.7%. If only off site employees are considered, this rate amounts to 6.9%.

One of the essential values of Galp Energia’s human resources policy is the stability of employment relationships. Hence, 87% of the staff have a permanent contract. Over 75% of fixed-term contracts and open-ended employment contracts are signed with workers of the service sector, which reflects the reality of this activity in Galp Energia.

### Number of staff by type of employment 2007/2008, without filling stations

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<tr>
<th></th>
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<tr>
<td>Fixed Term</td>
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### Number of staff by type of employment 2007/2008

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</tr>
<tr>
<td>With No Time Limit</td>
<td>939</td>
<td>939</td>
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</tbody>
</table>
Attracting, retaining and developing talent

Galp Energia maintained a strong relationship with universities as the main source for recruiting recently graduated students, namely through the annual trainee programme. Each trainee has the opportunity to work in two units having in each unit a work plan and a tutor that monitors the trainee’s development and evaluates his performance and has an executive director as a tutor. At the end of the programme, the best trainees may be invited to join the company. In 2008, 31 trainees joined Galp Energia after the internship.

To develop the staff, Galp Energia started the GPS – Gestão de Pessoas para o Sucess (Managing People for Success), which is oriented to stimulate internal mobility and professional improvement, and the CAP – Colaboradores de Alto Potencial (High-Potential Employees), which aims to identify and promote talent development.

In 2008 3,176 employees were recruited, essentially being the outcome of the recruiting processes (entry of 1,924 employees after Gaudi and Soccer projects), and 1,157 left. Most of these movements occurred at the gestes and it translates the specificity of workers of the service sector.

Training

Galp Energia’s training policy aims to develop employees technical competences and behaviour in alignment with the requirements of the business in order to promote their improvement and value creation. In terms of methodology, Galp Energia uses on-the-job training processes and started using an e-learning platform in order to adjust learning processes to different professional realities and to employees’ availability. In addition, class training sessions were maintained.

In 2008, Galp Energia provided over 133,110 training hours reflects a continued commitment to the professional development of the staff.
Compensation policy and benefits

Galp Energia’s compensation policy aims to safeguard external competitiveness and the internal equity of remuneration as well as reward the best performances.

The performance evaluation system in Galp Energia covers close to 71% of the staff and separates the evaluation of goal achievement from the evaluation of skills. Galp Energia has an annual prize for accident rate reduction, which aims to improve the safety performance and accident rates at work.

Labour relations

In the Galp Energia companies that have workers’ council, meetings of the workers’ council with the executive committee continued on a monthly basis. The minutes of these meetings were announced to employees.

In 2008, the number of employees covered by collective bargaining agreements reached 4,992, or 63.86% of the staff.

High-potential employees programme

The High-Potential Employees (CAP in Portuguese) programme identifies, motivates and retains employees that may be Galp Energia’s leaders creating a management culture in Galp Energia group companies. The employees with better current and past performance, under 35 years old, a degree and a high evaluation of performance, mobility and commitment to Galp Energia’s values and mission are selected. Each CAP has a tutor and an individual development plan based on the Assessment Centre, competence gap identification, experience, orientation to the career, among other factors.

Secondment policy

Galp Energia’s secondment policy defines that an employee may be seconded in Portugal (Autonomous Regions of Azores and Madeira and mainland Portugal). The secondment period may last from six months to three years and is renewable.

Galp Energia supports a visit to the destination as well as a house, whose value is set by an analysis of the destination’s cost of living.

The current policy includes journeys when the secondment is from or to an Autonomous Region and a secondment allowance in order to compensate the impact of geographical change on the family. The employee has also right to an installation allowance and the social rights are maintained.

Galp Energia’s pension plans

Galp Energia offers defined benefit plans and defined contribution plans to the employees of some of its companies. Only defined contribution plans guarantee rights in case the employee resigns, since the employee has been in the company for at least three years.

Galp Energia’s defined contribution plan aims to pay benefits in retirement due to old age, disability or death. Under this plan, the company will make 3% contributions according to each employee’s retirement-eligible salary. The employee may also contribute and in this case the company will make an additional contribution of an amount equal to the employees’ contribution until 1% of his retirement-eligible salary. Contributions from both the company and employees are recorded in individual accounts.
Corporate responsibility

Social responsibility has increasing relevance in government agenda and organisations’ agenda. Hence, corporate contribution to sustainable development has been achieved through the observance of good practices to build a better and fairer world.
Corporate responsibility

Social responsibility has increasing relevance in government agenda and organisations’ agenda. Hence, corporate contribution to sustainable development has been achieved through the observance of good practices to build a better and fairer world.

The close involvement with communities where it operates is part of Galp Energia’s culture. The awareness of its activities impact on the society inspired several social, environmental, educational, cultural and sport projects, both national and international. In 2008, Galp Energia applied about 6.1 million euros in donations.

The following projects are being developed.

Movimento energia positiva – Galp Energia’s contribution to public health

Public health in Portugal has major problems. Aware of this reality, Galp Energia kept its partnership with the Portuguese Ministry of Health for a programme against obesity aimed at curbing the incidence of pre-obesity and obesity in Portugal.

Obesity has grown alarmingly in the last years and it is already considered the epidemics of the 21st century by the World Health Organization. In Portugal, 51% of adults and 32% of children between 7 and 9 years of age have overweight or obesity. This growth has a large impact on public expenditure. Direct costs of obesity have a weight of 3.5% of public health expenditure.

The solution to invert this tendency is prevention, particularly avoiding obesity through the adoption of patterns of healthy behaviour. Healthier lifestyles carrying a more balanced diet and more physical activity must be promoted.

Galp Energia implemented in 2008 a multidisciplinary communication plan, which aimed to change patterns of behaviour. This plan formulated goals and a strategy.

Movimento Energia Positiva (movement for positive energy) was the name of the plan, which was able to spread knowledge and motivation among the population encouraging positive attitudes towards health and personal well-being.

Since the problem is only known through statistics that do not show the causes, Galp Energia made a diagnosis in order to identify the causes. Galp Energia drafted the study “The population’s perceptions and expectations towards feeding behaviours, physical activity and weight”, which has a qualitative and quantitative approach and is representative of the Portuguese population. This study showed lifestyles, attitudes and feeding behaviours. It also identified perceptions of the obesity phenomenon, awareness levels and intended changes in behaviour.

The outcome of this study allowed the creation of Movimento Energia Positiva’s communication plan, which included the following initiatives:
In a survey conducted in schools covered by Movimento Energia Positiva, 46% confirmed that changes occurred after the initiative in the knowledge, attitudes and eating habits of both teachers and students; 46% urged continuity of these actions in schools and 67% rated the initiative “a success.”

- the television show Vida Positiva (positive life) that is broadcasted every day on the Portuguese public broadcasting company since April 2008 with an average audience of 750,000 viewers;
- the website www.plataformacontraobiobesidade.dgs.pt, which is online since May with sections for children, adults, educators and health professionals;
- a roadshow that covered 50 primary schools in every main Portugal’s district reaching 13,500 students between 6 and 10 years of age with the play “The fantastic story of V-bpy”, written by Rosa Lobato de Faria, and plenty of physical activity. Thousands of comic books and CDs with the song of the movement, caps, balls, water and one tonne of fruit were distributed. Parents and professors received specific information;
- the roadshow that in the Summer went through some beaches from Algarve until the centre of Portugal.

Close to 25,000 people participated in Body Combat and Tai Chi classes, volleyball matches and used a mechanical surfboard. Nutritionists made an evaluation and provided the nutritional information of salads and natural juices, which were offered in a lounge bar at the beaches. Close to 1.5 tonnes of fruit were consumed;

- Brigadas Energia Positiva (positive energy brigades), composed of 200 entertainers and 60 hip-hop dancers, distributed about 48,000 leaflets with advice on nutrition and physical activity at the same time in Lisbon and Porto;

Overall, these initiatives reached out to 115,000 people, 2.5 tonnes of fruit, 25,000 children’s books were donated to children and 100,000 leaflets with advice on nutrition and physical activity were handed out. Movimento Energia Positiva and the platform against obesity generated close to 700 articles in newspapers, radio and television, which helped spread prevention messages.
Vidas Galp and virtual museum

The *Vidas Galp* programme, started in 2004, aims to record Galp Energia’s memory and identity. This is a new initiative in Portugal that promotes memory sharing through stories told by employees who contributed to the company’s history.

The programme recognises the importance of employees’ talent and personality to Galp Energia’s culture through the Virtual Museum, available at [http://vidas.galpenergia.com](http://vidas.galpenergia.com).

The Virtual Museum *Vidas Galp* is composed of several exhibitions based on stories. The visitor may get to know Galp Energia’s history, travel through Sines and Porto refineries, understand retail’s performance, have contact with the history of natural gas, follow the evolution of the Galp Energia brand. It is also possible to meet the Galp family, to recognise the company differentiation through innovation, to identify the aromatics and solvents, to see the growth of Aviation and Marine businesses and to understand the expansion beyond frontiers through the international exhibition and to revisit the Procurement and Trading areas.

In 2008, the programme continued with the preparation of six new exhibitions that explore other Galp Energia’s areas, namely “Corporate Services”, common to the whole company, “Directors’ Gallery”, which shows the members who have been part of the company’s board of directors, “Azores and Madeira”, “Lubricants”, “Bitumens” and “Oil Exploration and Production”. Hence, this diversified archive that starts at the end of the 19th century will continue growing.

This programme is being developed in association with the Associação Museu da Pessoa. At the end of 2008, there were 81 audio interviews in a total of 200 recording hours and 194 video interviews in a total of about 100 recording hours. Only a part of the archive is available on the Internet.

Energy School

This initiative, which is part of the corporate social responsibility, contributes to environmental education and promotes energy efficiency to children.

The Energy School, which is available at [http://vidas.galpenergia.com](http://vidas.galpenergia.com), is the outcome of the partnership with the European Blue Flag Association. This partnership has been kept and has been widely announced motivating Galp Energia to create the Energy School based on the work developed by several professionals from different knowledge fields. Anyone in any part of the world may learn more about energy.
The Energy City has four thematic areas

The visitor chooses one of the guides, which are cartoons that welcome students and teachers. The starting point is the Energy City. The circuits lead to:

1) Laboratories, library and thematic classrooms;
2) Contests “Energy for Eco-Reporter”, “Energy comics”, “Give gas...but with carefull!” and “Prototypes”;
3) Games that may be played in the classroom or at home;
4) Study visits that teach students to acquire knowledge and understand new realities when making trips;
5) Galp Energia tells a story.

This project is developed under the promotion of contests on energy efficiency and sustainable mobility requiring that the essays are the outcome of previous research on local environmental concerns, for which solutions should be proposed with a view to act locally in order to have global benefits. Strategically, children were involved, since they potentially apply the new ideas, promote the change in current patterns of behaviour and energy consumption and contribute to the mitigation of problems related to climate change.

Several high-quality essays were submitted to the contests organised in 2007/2008 and 20 Eco-schools throughout the country were awarded.
Awareness session for children on energy, the environment and safety – Give gas...But with carefull!

Galp Energia promoted this initiative in order to promote children’s awareness and to change their behaviour related to safety when using gas. The Portuguese must have a safer attitude when using LPG and natural gas.

This initiative was developed in association with the European Blue Flag Association at the Energy Schools, under the Eco-schools programme. The target was children between 6 and 10 years old and teachers at schools that participated in the Energy School programme.

Galp Energia in association with the European Blue Flag Association created a support kit, which includes:

- 1 book “Galp Energia tells a story” about natural gas and LPG;
- 1 question game (board + cards with questions + 6 pawns + dice)
- 1 Family Game (cartas com picotado para destacar)
- Stickers with safety rules and energy saving advice


In September 2008, Galp Energia made a roadshow through the schools with a giant question game (a canvas with 3x2 metres). Hence, students and teachers may test the knowledge acquired from the book in a relaxed and fun environment. The children were the pawns.
F1 in schools

In December 2008, a team from Pense Indústria supported by Galp Energia went to London to participate in the English regional championship F1 in schools (www.f1inschools.co.uk). This challenge consisted of creating a miniature F1 car propelled by a CO₂ capsule. The children had to use a three-dimensional drawing software (CAD) and computer numerically controlled machines. Several technical concepts were used during the project and the work was evaluated under criteria such as aerodynamics, design, prototype, teamwork, pilot reaction time, among others. Although it did not participate in the English ranking, this team was awarded the First Team Identity prize as a guest. In speed, the Portuguese team was ranked 4th. The group (xypison) was composed of students from the Penafiel School. Besides Galp Energia, this initiative was supported by RECET, CATIM, the Penafiel School and Rodapé Arquitectos.

Do you know how to save more fuel?

Galp Energia joined EUROPIA (European Petroleum Industry Association) and the European Commission and launched a campaign with 10 advices to reduce fuel consumption under the motto: “Save more than just fuel”.

Saving examples: the use of air conditioning only when necessary, since it increases until 5% energy consumption, periodical verification of the oil level, verification of tire pressure at least once a month, since having pressure below the recommended level may rise consumption by 4%, among other advice.

In this initiative, over 30 million leaflets were distributed to about 45,000 filling stations in the 29 countries. For further information, visit the initiative’s website at www.savemorethanfuel.eu.

The 17 oil companies that are members of EUROPIA and 25 companies that were impeled by national oil industry associations participated in this campaign.

This oil industry campaign reinforces the government’s efforts of energy efficiency promotion, particularly through the campaign of the national plan for energy efficiency.

Support to AMI – International Medical Assistance

Galp Energia kept its partnership with AMI. The company donates the corresponding amount to computer waste gathered at Galp Energia’s facilities.

In 2008, Galp Energia showed solidarity once more with this association and supported the 13th X-ray recycling campaign. The value obtained with silver extracted from the X-ray’s silver content was also donated to the association to support its solidarity initiatives.
Galp Energia’s solidarity with portuguese-speaking countries

In 2008, Galp Energia’s and its employees solidarity went once more to the population of Guinea-Bissau and East Timor. For the first time, the company was at the isle of Príncipe in São Tomé e Príncipe to donate books, school material, toys and computers to solidarity associations and schools.

These goods, mostly donated by employees after the company’s solidarity appeals, will be a contribution to those countries development. The donation of Portuguese-language books contributed to the teaching of Portuguese in countries with which Portugal keeps cultural and friendship ties.

Participation in the creation of social responsibility and business ethics frameworks

Since January 2005, Galp Energia participated in the creation of a social responsibility and business ethics framework adjusted to the Portuguese reality. The creation of Portuguese standards was coordinated by APEE (the Portuguese Business Ethics Association) through an agreement with the Portuguese Quality Institute, namely NP 4469-1 about social responsibility, which was already published and developed by the Technical Committee 164, and standard NP 4460-1, developed by Technical Committee 165 for the Organisations Codes of Ethic.

Both technical committees are currently developing practical guides to apply the published standards. The Technical Committee 164 aims to follow the International Standard Organisation to create the 26000 international standard to implement social responsibility in organisations.
Social responsibility national network – Rede RSOpt

This network is the result of the efforts made by several companies, Public Administration services, institutions, associations and non-governmental organisations under Equal, a European initiative that allowed the identification of some problems in Portuguese companies. From this work arose the need to implement social responsibility in Portugal.

ECO Fórum

Galp Energia joined Fórum ECO in 2007 and became one of the first companies to contribute to the protection of the Portuguese forest against fires, a curse that ravages the country every year and brings about serious social, environmental and economic consequences.

Galp Energia made available throughout 2008 a vast array of means to fight forest fires: stalls for the distribution of leaflets, air time on Galp TV to promote the initiative and space on Galp Energia’s web portal and on the windows and doors of M24 shops for spreading information about the campaign.

Fundação do Gil

Fundação do Gil is a foundation that aims to contribute to the well-being, personal improvement and full social integration of children and young persons who are staying at hospitals, prisons or other institutions for different reasons.

Galp Energia offered a Galp Fleet card and a check that represent natural gas consumption for a year. This initiative is part of the company’s social responsibility policy, which last year supported the first home support vehicle. The foundation’s children were also invited to Galp Energia’s Christmas party, which takes place every year at Coliseu dos Recreios.

33 Portuguese athletes go to beijing with Galp Energia’s support

Under the company’s social responsibility policy, Galp Energia supported the athletes at Beijing 2008 Paralympic Games.

Galp Energia’s support aims to incite the society to support and recognise the paralympic sports, promote new games, attract new athletes and gather more aid providing paralympic athletes the best training conditions.

The Portuguese paralympic team’s performance has been an important contribution to attract the public opinion’s attention to the reality of paralympic sports in Portugal, both to its achievements and difficulties.
Business & Biodiversity

Biodiversity is a strategic sustainability value for the company. Hence, Galp Energia joined the Business & Biodiversity initiative of the Portuguese presidency of the Council of the European Union, which aims to put biodiversity at the heart of corporate strategy and local and regional policies by 2010. With this agreement, Galp Energia will support the Marbis Natura2000 project, which encompasses the organisation of scientific data on the marine biodiversity of off-shore waters under national jurisdiction including the creation of an integrated database on marine biodiversity and the establishment of a marine biodiversity knowledge network.

Lisboa e-nova

Galp Energia signed an agreement with Lisboa E-Nova, the energy and environment agency of the Municipality of Lisbon, which aims at promoting the use of renewable energy sources, namely the use of solar thermal energy systems in the Lisbon region. This agreement reinforces Galp Energia’s commitment and contribution to Lisbon’s energy sustainability.

This agreement is part of ProSTO: Best Practice Implementation of Solar Thermal Obligations, which includes various international partners under the Intelligent Energy Europe programme.

Porto refinery awarded the best students of Matosinhos schools

Porto refinery has made several collaboration actions with local entities making donations to the national association against poverty, the national league against famine, which supports poor children, and the Associação Lavrense de Apoio ao Diminuído Intelectual, an institution from Matosinhos that supports children with mental health problems and economic difficulties.

With the school community, Porto refinery has been developing activities in accordance with Galp Energia’s values. Hence, Porto refinery has worked with the school community of Leça da Palmeira and Perafita in order to actively stimulate both this community’s knowledge about the refinery and the support provided through the actions that promote the joy of studying and educational achievements. Hence, the refinery awarded the best students distinguishing the best high school Chemistry students and the best ninth grade students.
Over 10 years ago, Sines refinery started an open door policy. Sines refinery has received over 5,000 visitors, both Portuguese and foreign, per year. Hence, Sines refinery favours the local community through several annual interaction activities with different target publics, from military, social and cultural entities to sports entities.

Galp Energia promotes the Best Student Prize, the Surf Championship, the Culture Days, the public signing of agreements with the municipalities of Sines and Santiago do Cacém and entities such as Christian congregations, sports clubs, centres for culture, theatre groups and fire fighters associations. Galp Energia follows the actions of these organisations throughout the year.

From this experience and knowledge sharing, there is a common enlightenment leading to mutual assistance and to the community’s recognition of Sines refinery as a trustworthy and responsible partner.

This recognition is patent in the paintings made every year by students after a tour to Sines refinery, which is called the Culture Days.
Refurbishment of a leisure colony for orphans and elderly people

Organised in teams, 200 employees from the Gas & Power business unit volunteered to change and improve several pieces of equipment and structure such as windows, gates, walls, rooms, toilets and the garden of the leisure colony Padre Gregório.

The refurbishment also included the building of a sport zone, a fun park, a leisure space and a small library, which was filled with children’s books handed out to the institution by the employees participating in the event.

Initiatives for the company’s employees

For Galp Energia, its employees are an essential element that is included in the social responsibility policy. In this context, is to highlight the work of Clube Galp Energia.

Clube Galp Energia

Employees are Galp Energia’s main asset.

Training, mobility and career development are combined with leisure, cultural activities and sports. Galp Energia’s employees are members of a lasting organisation even off duty.

Hence, the Clube Galp Energia is the main implementation agent of this concern and corporate culture.

Managed and aimed at active and retired employees, the Clube Galp Energia gathers Galp Energia’s performance in several areas and works as the privileged agent in spreading Galp Energia’s social responsibility policy.

Participation in activities organised by the Clube Galp Energia guarantees shared leisure by employees from different business units, companies and countries contributing to a strong team building.

The goal is to offer its employees (4,570 on 31 December 2008) and direct family frequent and diversified high-quality sports, cultural and social activities.
The success of this work, recognised both by governing bodies and employees, is shown by the increasing number of participants. In 2008 records were established. The club has three regional representations (North, Centre and South).

The main activity of the Clube Galp Energia’s annual activity plan is the organisation of the three Christmas parties, which occur at Porto, Lisbon and Vila Nova de Santo André.

**Culture**

The Clube Galp Energia’s activity was also marked by the launch of the choir’s first album. This ancient wish was fulfilled in 2008.

The Clube Galp Energia’s choir, whose conductor is Pedro Miguel Ramos, recorded fourteen original Christmas songs. This album was highly acclaimed by the choir experts who listened to the recording.

The Clube Galp Energia’s choir is part of the sponsored cultural activities. Several generations of employees passionate for singing meet at the choir. This choir hosts since 1997 the International Choir Meeting of Vila Nova de Santo André and the Christmas concerts of Vila Nova de Santo André and Santo André village.

The activity plan for 2008 reflects the interest in culture not only through leisure initiatives but also through initiatives that include the training and occupation of employees children during school vacations.

Douro river cruises, the celebration lunch of the 30th anniversary of the Clube Galp Energia, as well as several theatre plays, circus acts, concerts and operas, were highly attended.

Galp Energia gives joy to thousands of children at Christmas. Joy is provided by employees who volunteer to help the organisation and logistic efforts of the Christmas parties.
Overall, Clube Galp Energia’s regional representations organised sports events that people enjoy promoting activities that aim to promote employees emotional balance and psychic health

**Sports**

The internal futsal championship, whose first edition occurred over 30 years ago, is organised by Clube Galp Energia and allows employees from different activities to meet and have fun. Competitiveness is part of this championship.

The internal fishing championship gathered a high number of participants. Fishing on boats was also applauded by employees.

Mini and half marathons that took place on Vasco da Gama and 25 de Abril bridges, the surf and bodyboarding morning, as well as the internal women bowling championship and the internal men karting championship, were highly attended by employees and their family.

**Solidarity**

In the social scope the several solidarity campaigns were enthusiastically received by Galp Energia’s employees. In 2008, over 10 thousand pieces, among clothes, toys, shoes, books and films, were collected to be delivered to institutions.

Visit the Clube Galp Energia’s website at www.clubegalpenergia.com
Stakeholder communication

Galp Energia has diversified communication channels with its stakeholders. In addition to shareholders, investors, governmental entities, media, scientific community, non-governmental organisations and local communities, Galp Energia made some projects related to clients and the society.

Client satisfaction assessment

Client service is essential in Galp Energia’s relationship with its clients. It is a considerable factor for client fidelization. To respond to the challenges of an increasingly competitive marketplace and to demanding clients, Galp Energia has invested on the continuous improvement of its client service at Oil, Gas & Power and Corporate Services business units.

In 2008, Galp Energia invested on the improvement of non-personal client service through the implementation of various internal initiatives under the Client Service Quality Management project:

- formulation of service goals for non-personal client service, with consequences for outsourced service providers;
- reorganisation of client service under the Client Relationship Centre;
- formulation and communication of the same operational control indicators for every client service;
- standardisation and documentation of client service’s processes and procedures providing information for every service at one archive;
- implementation of satisfaction surveys in order to regularly monitor client satisfaction with the service and complaint management;
- implementation of the Clients Voice programme, which consists of employees visiting the Client Relationship Centre to listen to the clients.

At the same time, Galp Energia developed in 2008 the OpGeRe project – Streamlining of Complaint Management, whose implementation in every business unit and Corporate Services will be completed in the first half of 2009 in order to improve complaint management efficiency, to monitor operational control indicators, to set goals related to complaints, to standardise complaint management processes and to reinforce client satisfaction.

In 2009, Galp Energia will continue investing on the relationship with its clients by continuously improving processes that affect quality service and strengthening the knowledge of the factors and expectations which promote client satisfaction and fidelization.
For Galp Energia, it is essential to gain knowledge about its clients in order to improve strategic planning of the future corporate social responsibility and sustainability policies.

Considering the increasing importance of energy efficiency and sustainable mobility activities in Galp Energia, it was necessary to understand the public opinion's awareness on these matters as well as understand how Galp Energia's performance is perceived.

The energy sector is seen as accountable for major change in the environment. The actions under energy efficiency and sustainable mobility are relevant for Galp Energia, since clients tend to accept impact mitigation measures related to the company's core business.

Hence, a quantitative survey was conducted by the Marketing Research Institute on 800 adults who live in mainland Portugal.

The outcome shows that these matters are entirely known by the sample of respondents. However, there is larger knowledge and idea association related to energy efficiency (13 per cent did not characterise the concept) than to sustainable mobility (28 per cent per cent did not characterise the concept).

In terms of behaviour related to sustainable mobility, there were occasional changes showing the importance of reinforcing this matter and promoting changes in behaviour. Galp Energia may have this role in the future. Car sharing and the use of public transportation were the changes to which the respondents most objected. Contrariwise, changing to a fuel-efficient car and changing driving style were largely accepted.

In terms of performance expectations, Galp Energia is seen as an entity that operates with larger incidence in the following areas:

- Capital expenditure on R&D of non-polluting fuel and its sale (49.8%);
- Creation of incentive to increase non-polluting fuel consumption (13.6%);
- Awareness campaigns (11%).

The importance of this matter and the need to explain features related to energy efficiency and sustainable mobility stimulate the implementation of actions that promote change in people's behaviour related to energy consumption. The efficient use of existing resources is strongly recommended.
Employees participation

To rise motivation, information sharing and the pride in belonging to the company were some of the essential factors that led Galp Energia to launch mygalp magazine, a new internal publication, refurbish the intranet’s layout and content and the newsletter. Hence, a new brand called mygalp arises gathering every internal communication channel.

On another level of internal communications, Galp Energia kept its commitment to internal events, namely meetings of senior managers, which aim to build and strengthen a new organisational culture. These events were privileged forums to spread the company’s mission, values, strategies and total results.

Seminar and conference support

Conference “Internationalisation of the Economy of Angola – Challenges and Opportunities”
Portuguese Federation of Sports for Disabled
7th CPLP (The Community of Portuguese Language Countries) Summit
Conference “Building the Future”
Conference with Tony Blair “Political, Economic and Energy Challenges for 2009”
Seminar “Energy Efficiency – Portugal 2015”
Chempor 2008
Iberian Business Forum
33rd Quality Colloquium
“The Community of Portuguese Language Countries tax reform and economies’ competitiveness”
1st Journalism Conference
National Engineer Day
19th WPC - A world in Transition: Energy Supply for a Sustainable Growth
Rio Oil & Gas 2008
Appendix

To find more and better energy.
Appendix I. External assurance

Independent verification of the 2008 Sustainability Report

(English translation from the original in Portuguese)

To the board of directors of Galp Energia, SGPS, S.A.

Introduction

In accordance with the request of Galp Energia, SGPS, S.A. (Galp Energia), we performed an independent verification of the “Sustainability Report 2008” (Report). The assurance was performed according to instructions and criteria defined by Galp Energia, described and disclosed in the Report, and according to the principles and extent described in the scope.

Responsibilities

Galp Energia’s board of directors is responsible for the presented information and disclosure of the presented performance information and the assessment criteria as well as for the systems and processes in respect of the collection, consolidation, validation and reporting thereof. Our responsibility is to conclude on the adequacy of the performance information based upon independent verification standards. We do not assume any responsibility by any other purpose, people or organization.

Scope

Our procedures were planned and executed using the International Standard on Assurance Engagement (ISAE) 3000 and having the Global Reporting Initiative, third version (GRI3), as reference, in order to obtain a moderate level of assurance on both the performance information reported and the underlying systems and processes. The extension of our procedures is lesser than an audit, consisting of questions and analytic tests and some substantive work and, consequently, the level of assurance is lower. The verification of the management self declaration on the application level of the Global Reporting Initiative GRI3, based on GRI’s Reporting Framework Application Levels, consisted on the verification of consistency with the applicable requirements. Part of the information required by GRI3 is available on the “Annual Report and Accounts 2008” and the “Corporate Governance Report 2008”, documents that should be used to obtain a full understanding of the developed activities, the corporate governance and the Group’s performance.

In this independent assurance, our procedures were as follows:

(i) questioning the management and main representatives of the analysed areas to understand the way how the information system is organised and those parties’ sensitivity to the matters included in the report;
(ii) identify the existence of internal management procedures leading to the implementation of economical, environmental and social policies;
(iii) testing the processes and systems effectiveness in respect of collection, consolidation, validation and reporting of the performance information previously mentioned through calculations and validation of reported data;
(iv) confirming that given operational units follow the instructions for the collection, consolidation, validation and reporting of the performance information,
(v) executing some procedures using a sampling technique in order to validate the reported information;
(vi) comparing technical data related to greenhouse gas emissions and primary energy consumption validated by the independent assurer under the European Emission Trading Scheme;
(vii) comparing financial and economic data with those in the “Annual Report and Accounts 2008” audited by the external statutory auditor, to appraise the external validation of the reported information;
(viii) comparing data related to refineries with previous data verified by an external statutory auditor;
(ix) validation of the material themes included in the Report based on the materiality principles of standard AA1000AS and GRI3, through the comparison of the Report’s content with the content of peer companies’ Sustainable Reports;
(x) verifying the existence of data and information required to reach level B, self declared by Galp Energia for applying the GRI3.

Environmental data marked in the table “Operational data” were not included in this assurance process.

Conclusions

Based on our work made in accordance with the scope, nothing has come to our attention that causes us to believe that systems and processes in respect of the collection, consolidation, validation and reporting of the information in the Report are not effectively working and that the disclosed information is not free of materially relevant distortions.

Based on our assurance of the Report and the GRI3 guidelines with the assumptions described on the scope, we conclude that the Report includes the data and the information required for the level Bin accordance with GRI3.

Lisbon, 31 March 2009

PricewaterhouseCoopers & Associados, SRDC, Lda. represented by António Joaquim Brochado Correia, Statutory Auditor
Appendix II. GRI indicators

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<td>Economic performance</td>
</tr>
<tr>
<td>------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>EC1</td>
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<tr>
<td>EC2</td>
<td>Financial implications and other risks and opportunities for the organisation’s activities due to climate change</td>
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<td>EC3</td>
<td>Coverage of the organisation’s defined benefit plan obligations</td>
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<td>EC4</td>
<td>Significant financial assistance received from government</td>
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<td>EC5</td>
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<td>EC6</td>
<td>Policy, practices and proportion of spending on locally-based suppliers at significant locations of operation</td>
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<tr>
<td>EC7</td>
<td>Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation</td>
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<td>Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind or pro bono engagement</td>
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<td>EC9</td>
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<td>EN</td>
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<td>Percentage of materials used that are recycled input materials</td>
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<td>EN3</td>
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<td>Indirect energy consumption by primary source</td>
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<td>EN6</td>
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<td>EN7</td>
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<td>EN9</td>
<td>Water sources significantly affected by withdrawal of water</td>
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<td>EN10</td>
<td>Percentage and total volume of water recycled and reused</td>
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<tr>
<td>EN11</td>
<td>Size of land owned, leased or managed, or adjacent to, protected areas and areas of high biodiversity value outside protected areas</td>
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<tr>
<td>EN12</td>
<td>Description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas</td>
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<tr>
<td>EN13</td>
<td>Habitats protected or restored</td>
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<td>EN14</td>
<td>Strategies, current actions and future plans for managing impacts on biodiversity</td>
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<tr>
<td>EN15</td>
<td>IUCN Red List species with habitats in areas affected by operations</td>
</tr>
<tr>
<td>EN16</td>
<td>Total direct and indirect greenhouse gas emissions</td>
</tr>
<tr>
<td>EN17</td>
<td>Other relevant indirect greenhouse gas emissions</td>
</tr>
<tr>
<td>EN18</td>
<td>Initiatives to reduce greenhouse gas emissions and reductions achieved</td>
</tr>
<tr>
<td>EN19</td>
<td>Emissions of ozone-depleting substances</td>
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<tr>
<td>EN20</td>
<td>NOx, SOx and other significant air emissions by type and weight</td>
</tr>
<tr>
<td>EN21</td>
<td>Total water discharge by quality and destination</td>
</tr>
<tr>
<td>EN22</td>
<td>Total weight of waste by type and disposal method</td>
</tr>
<tr>
<td>EN23</td>
<td>Total number and volume of significant spills</td>
</tr>
<tr>
<td>EN24</td>
<td>Weight of transported waste deemed hazardous</td>
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<tr>
<td>EN25</td>
<td>Biodiversity value of water bodies</td>
</tr>
<tr>
<td>EN26</td>
<td>Initiatives to mitigate environmental aspects of products and services and extent of impact mitigation</td>
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<tr>
<td>EN27</td>
<td>Percentage of packaging materials that are reclaimed</td>
</tr>
<tr>
<td>EN28</td>
<td>Monetary value of significant fines and total number of non monetary sanctions for non-compliance with environmental laws and regulations</td>
</tr>
<tr>
<td>EN29</td>
<td>Environmental impacts of transportation</td>
</tr>
<tr>
<td>EN30</td>
<td>Total environmental protection expenditures and investments</td>
</tr>
</tbody>
</table>
Social performance

Management approach, goals, performance, policies and contextual information

LA1 Total workforce by employment type, employment contract and region
78, 8, 9, 62, 64, 70, 71, 72, 75, 78-81

LA2 Total number and rate of employee turnover by age group, gender and region
78, 79

LA3 Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations
78, 81

LA4 Percentage of employees covered by collective bargaining agreements
81

LA5 Minimum notice periods regarding operational changes, including whether it is specified in collective agreements
There is no minimum notice regarding operational changes. When there are changes, employees are notified.

LA6 Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programmes
The percentage of employees represented at HSS1 committees is 31.84%

LA7 Rates of injury, occupational diseases, lost days, absenteeism and number of work-related fatalities by region
71, 72, 78. Nota – Absenteeism index = ((total absenteeism days/average staff numbers’ 11’22))

LA8 Education, training, counselling, prevention and risk-control programmes in place to assist workforce members, their families or community members regarding serious diseases
Galp Energia has no ongoing education, training, counselling, prevention and risk-control programmes to assist workforce members, their families or community members regarding serious diseases.

LA9 Health and safety topics covered in formal agreements with trade unions
Complementary information may be found in page 70 of the Sustainability Report 2005/2006 available at www.galpenergia.com

LA10 Average hours of training per year per employee by employee category
78, 80

LA11 Programmes for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings
Galp Energia has no programmes for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.

LA12 Percentage of employees receiving regular performance and career development reviews
81

LA13 Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership and other indicators of diversity
78, 79 and 55-63 in Corporate Governance Report

LA14 Ratio of basic salary of men to women by employee category
Analysing every employee, there are the following salary difference men, women: 2007 – 1.08 e 2008 – 1.06.

Social performance – human rights

Management approach, goals, performance, policies and context
75

HR1 Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening
Galp Energia has not a policy for including human rights clauses in investment agreements but complies with existing legislation

HR2 Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken
Galp Energia does not screen suppliers or contractors on human rights but complies with existing legislation

HR3 Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained
Galp Energia has no employee training programme on human rights but complies with existing legislation.

HR4 Total number of incidents of discrimination and actions taken
Galp Energia has not detected any incident of discrimination in 2008 at any of its operations.

HR5 Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk and actions taken to support these rights
There has been no change relative to what was reported in the Sustainability Report 2005/2006 (pages 44, 45)

HR6 Operations identified as having significant risk for incidents of child labour and measures taken to contribute to the elimination of child labour
N.A. Galp Energia does not deem any risk to exist in its activities for the occurrence of child labour

HR7 Operations identified as having significant risk for incidents of forced or compulsory labour and measures to contribute to the elimination of forced or compulsory labour
N.A. Galp Energia does not deem any risk to exist in its activities for the occurrence of forced or compulsory labour

HR8 Percentage of security personnel trained in the organisation’s policies or procedures concerning aspects of human rights that are relevant to operations
Galp Energia has no programme for training security personnel in aspects of human rights

HR9 Total number of incidents of violations involving rights of indigenous people and actions taken
N.A. Galp Energia does not deem its activities to cause impacts on indigenous people

Social performance - society

Management approach, goals, performance, policies and context
75, 78, 84 e 98

S01 Nature, scope and effectiveness of any programmes or practices that assess and manage the impacts of operations on communities including entering, operating and exiting
Galp Energia has no programme or practice to assess the impacts of its operations on communities

S02 Percentage and total number of business units analysed for risks related to corruption
Galp Energia was not a subject of any legal action in 2008

S03 Percentage of employees trained in the organisation’s anti corruption policies and procedures
Galp Energia has not trained its employees in any anti corruption policies or procedures

S04 Actions taken in response to incidents of corruption
Galp Energia was not a subject of any legal action in 2008

S05 Public policy positions and participation in public policy development and lobbying
29, 73

S06 Total value of financial and in-kind contributions to political parties, politicians and related institutions
N.A. Galp Energia does not contribute to any political parties or related institutions

S07 Total number of legal actions for anti-competitive behaviour, anti-trust and monopoly practices and their outcomes
Concerning the bitumen cartel process, Galp Energia contested the Commission’s condemnatory decision in December 2007. The most recent development was the European Commission’s answer in September 2008. Galp Energia awaits notice to participate in the court audience to present evidence and allegations.
<table>
<thead>
<tr>
<th>PR</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR1</td>
<td>Lifecycle stages in which health and safety impacts of products and services are assessed for improvement and percentage of significant products and services categories subject to such procedures</td>
<td>62, 74</td>
</tr>
<tr>
<td>PR2</td>
<td>Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their lifecycle, by type of outcome</td>
<td>No incident of non-compliance with regulations or voluntary codes concerning health and safety impacts of products and services during their lifecycle was recorded.</td>
</tr>
<tr>
<td>PR3</td>
<td>Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements</td>
<td>64: Galp Energia provides information about any hazards of products it offers to the market as well as recommendations for its safe use through safety data cards and labelling instructions in accordance with the legislation in force and subsequently placed on packages. Galp Energia currently has safety data for more than 400 products it markets. There is an internal procedure governing the preparation, availability and disclosure, internally and externally, of safety data cards and labelling instructions.</td>
</tr>
<tr>
<td>PR4</td>
<td>Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcome</td>
<td>No incident of non-compliance with regulations or voluntary codes concerning product and service information or labelling was recorded.</td>
</tr>
<tr>
<td>PR5</td>
<td>Practices related to customer satisfaction including results of surveys measuring customer satisfaction</td>
<td>29, 73, 97</td>
</tr>
<tr>
<td>PR6</td>
<td>Programmes for adherence to laws, standards and voluntary codes related to marketing communications including advertising, promotion and sponsorship</td>
<td>All marketing communications including advertising, promotion and sponsorship follow the existing legal framework as set out in government decree Decreto-lei no 300/90 of 23 October 1990</td>
</tr>
<tr>
<td>PR7</td>
<td>Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications including advertising, promotion and sponsorship, by type of outcome</td>
<td>2 monetary fines for not licencing advertising and one monetary fine for not announcing promotional dates and prices</td>
</tr>
<tr>
<td>PR8</td>
<td>Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data</td>
<td>No complaint regarding any breach of customer privacy was received. Galp Energia has its customer databases duly filed with the Comissão Nacional de Protecção de Dados, the entity charged with protecting data privacy.</td>
</tr>
</tbody>
</table>
| PR9  | Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services | - 10 fines for installing to store gas fuels without installation and exploration licence;  
- 1 fine for absence of gasoline oozes control;  
- 2 fines for absence of licence for storing and approving reservoir under pressure;  
- 1 fine for renovation request of the functioning permit of under pressure equipment – LPG reservoir;  
- 6 fines for the existence of storing deposits of unlicensed gasoline;  
- 9 fines for absence of licence of LPG storage installation,  
- 2 fines for absence of licence of storing and approval of reservoir under press. The amount of each fine is not known since there is an interval.  |
Appendix III. Acronyms

ACT – Acordo Colectivo de Trabalho (Collective bargaining agreement)
AMEPETROL – Mozambique’s oil trade association
APETRO – Portugal’s oil trade association
BATS – Best Available Techniques
BCSD – Business Council for Sustainable Development
CAPEX – Capital expenditure (or investment spending)
CCT – Comissão Central de Trabalhadores (Central Workers’ Council)
CCIPA – Câmara de Comércio e Indústria Portugal-Angola (Portuguese-Angolan Chamber of Commerce)
CERES – Coalition for Environmentally Responsible Economies
CLC – Companhia Logística de Combustíveis
CO₂ – Carbon dioxide
CONCAWE – European Association for Environment, Health and Safety in Refining and Distribution
COTEC – Associação Empresarial da Inovação (enterprise forum for innovation)
CSR – Corporate Social Responsibility
EBITDA – Earnings before interest, taxes, depreciation and amortization (lucros antes de juros, impostos, depreciação e amortização)
EC – European Commission
EQS – Environment, Quality and Safety
EU – European Union
EU ETS – European Union Emissions Trading Scheme
EUROPIA – European Petroleum Industry Association
FAR – Fábrica de Aromáticas (aromatics plant)
GEE – Greenhouse gas
GESB – Galp Exploração Serviços do Brasil
GESTES – Galp Energia’s filling stations
GN – Natural gas
GPL – Gás de Petróleo Liquefeito
GRI G3 – Global Reporting Initiative, 3rd issue
INETI – Instituto Nacional de Engenharia, Tecnologia e Inovação (Engineering, Technology and Innovation institute)
IRC – Imposto sobre o Rendimento das Pessoas Colectivas (Company income tax)
IRG – Instalações Receptoras de Gás Natural (Natural gas-receiving plants)
IRRRC – Investor Responsibility Research Center
ISP – Imposto sobre os Produtos Petrolíferos (oil tax)
ISQ – Instituto de Soldadura e Qualidade
ITG – Instituto Tecnológico do Gás
LCPs – Large Combustion Plants
km – Kilometre
kton – thousand tonnes
mbopd – thousand barrels of oil per day
MMMBBL – one billion barrels
MMSCF – Million Standard Cubic Feet
MTD – Melhores Tecnologias Disponíveis
MWh – Megawatt Hour
N₂O – Nitrogen oxides
NGO – Non-Government Organisation
PALOP – Países Africanos de Língua Portuguesa (African Portuguese-speaking country)
PNAC – Plano Nacional para as Alterações Climáticas (National plan for climate change)
PNALE – Plano Nacional para Atribuição de Licenças de Emissão (National allocation plan of emission licences)
PRCE – Planos de Racionalização de Consumos Energéticos (Plans for rationalising energy use)
RGCE – Regulamento de Gestão do Consumo de Energia (Regulation for the management of energy use)
RL – Replacement Cost
ROACE – Return on Average Capital Employed
SAAGA – Sociedade Açoreana de Armazenagem de Gás
SO₂ – Sulphur dioxide
STCP – Sociedade de Transportes Colectivos do Porto (Porto’s local transportation company)
toe – tonne of oil equivalent
ton – tonne