

## IN SEARCH

SUSTAINABILITY REPORT

## OF MORE

GALP ENERGIA

## AND BETTER

2009

ENERGY

GALP ENERGIA

SUSTAINABILITY REPORT 2009

GALP ENERGIA is an integrated energy operator with a presence across the whole oil and gas value chain as well and increasingly in renewable energy. Its operations are deployed over diverse geographical locations where South America and Africa play a prominent role, namely in exploration and production. To the list of countries where Galp Energia operates - Portugal, Spain, Brazil, Angola, Venezuela, Mozambique, Cape Verde, Guinea-Bissau, Swaziland, Gambia and East Timor – two new countries were added in 2010: Uruguay and Equatorial Guinea.

#### GALP ENERGIA

#### SUSTAINABILITY REPORT 2009

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# 

### **STATEMENTS**

SUSTAINABILITY IS
ALWAYS INVOLVED IN
GALP ENERGIA'S DAILY
MANAGEMENT DECISIONS,
GENERATING BENEFITS
FOR ALL THE COMPANY'S
STAKEHOLDERS.

### MESSAGE FROM THE CHAIRMAN OF THE BOARD OF DIRECTORS

Business innovation creates lasting value when the business internalises sustainability as a critical factor for success. This principle really is enshrined in Galp Energia's culture. Daily management decisions that generate benefits for all of the Company's stakeholders illustrate this, even during the periods of economic difficulty that are being faced globally.

Indeed, Galp Energia has contributed positively to Portugal's energy security, increasing significantly the oil resources at its disposal over recent years. The dynamics of the Exploration & Production (E & P) business in Brazil's "pre-salt" region, in which we actively participate, has opened up new frontiers in the development of the oil industry. Moreover, the on-going conversion of our industrial refinery plant will endow the country with technological skills both within the European and global sectors. It should be stressed that this is the largest industrial development in progress in Portugal, which will increase the Company's production capacity, at the same time reducing the power consumption of the refinery.

Under our vision of the future, renewable energies occupy a growing place within Galp Energia's business. The development of bio fuels in Mozambique and Brazil, and the development of wind energy in Portugal clearly show these efforts.

The recent creation of the Galp Soluções de Energia business offer is a new investment that illustrates sustainability as the driving force behind our business. By helping our customers manage their energy consumption in an integrated and efficient manner, we are contributing decisively to strengthening their and business and environmental competitiveness.

In turn, within the field of Corporate Social Responsibility, the Galp Energia Foundation has been established, tasked with creating social value through support for conservation of the historical and technological heritage of the energy sector, and activities that minimise the environmental impact of energy activity, and educational initiatives in the environmental, cultural, educational and scientific spheres.

The year 2009 also saw the creation of Galp Energia's Code of Ethics, a reference framework that safeguards respect for the ethical principles that underpin the sustainable development of our business.

It is through all these initiatives that Galp Energia traces a solid, robust, innovative and sustainable path towards business development, generating added value for all stakeholders.





BUSINESS INNOVATION

CREATES LASTING

VALUE WHEN THE

BUSINESS INTERNALISES

SUSTAINABILITY AS A

CRITICAL FACTOR FOR

SUCCESS.

SUSTAINABILITY REPORT 2009 · GALP ENERGIA

Francisco Murteira Nabo

Chairman of the Board of Directors

Galp Energia



#### MESSAGE FROM THE CEO

The implementation of a policy of Sustainability that creates value is the responsibility of each and every one of us who works for Galp Energia.

This is our third Sustainability Report verified by an independent body; it is another step taken by our Corporate Group to further our relations with all Galp Energia stakeholders.

The detail in which we describe and quantify the activities that support our sustainability policy is the clearest evidence of our willingness to share everything we do to ensure the sustainability of what we are and what we want to be with all those interested in the topics covered.

It is readily agreed that Sustainability is one of the great challenges of the 21<sup>st</sup> century. The concept of sustainability is indistinguishable from companies' environmental, economic and social performance, and creates value for all stakeholders.

The long-term Vision that we share at Galp Energia makes us want "to be, in the markets where we operate, the Benchmark Company within the energy sector."

In accordance with our Mission, we want to "create value for our Customers, Employees and Shareholders, acting in energy markets with ambition, innovation and competitiveness and promoting respect for the principles of ethics and sustainability."

Throughout the year we once again published the Environment and Safety Data Book for the two large industrial plants we operate, the Matosinhos and Sines refineries. The data disclosed in these publications without doubt show the effort and progress we have pursued and achieved in transforming our refineries into points of reference in terms of the environment and safety.

As an integrated energy operator, one of our major responsibilities is to contribute to the safe supply of energy in the markets where we operate. To this end, we have been significantly increasing our investments in research and oil and gas production, with results that have allowed us to build a resource base that is greatly contributing to our sustainability and guaranteeing the energy supply that the markets, and in particular the Portuguese market, demands.

Our major on-going investments in Sines and Matosinhos geared to improving energy and procedural efficiency are other examples that greatly contribute to the economic sustainability of refining in Portugal, to a substantial improvement in the country's energy balance and to control of the emissions associated with the production of petroleum products.

To ensure a long-term supply of natural gas, we have been involved in analysing and developing various gas liquefaction projects, namely in Angola, Equatorial Guinea, Venezuela and Brazil.

The strategic importance Galp Energia attaches to renewable energy is demonstrated by our involvement in vegetable oil production projects in Mozambique and Brazil, part of our project for second-generation bio fuels, and the wind energy project with which we are associated.

During the year 2009, we established the organisational unit Galp Soluções de Energia, geared to providing services to customers with particular emphasis on developing and promoting energy efficiency projects, the activity that will most contribute to the sustainability of the new energy paradigm that the world is engaged in building.

The relationships that we foster with the National Scientific System are critical elements for the success of our strategy of sustainability; in this report, we summarise just how much we have done in this area, with extremely encouraging results.

Establishing the Galp Energia Foundation is another milestone we cannot fail to mention; within it, in accordance with its Statutes, our Social Responsibility initiatives will be concentrated, which until now have been shared across various organisational units. Our Foundation will focus its activities on four areas: social solidarity, energy and knowledge, the environment and culture.

The implementation of a policy of Sustainability that creates value is the responsibility of each and every one of us who works for Galp Energia. On behalf of the Company's directors, I would like to express my appreciation of the quality and nature of the work done. However, more important than what we have done is what we still have to do; I am counting on the dedication, enthusiasm and professionalism of all so that, also in terms of sustainability, Galp Energia becomes the Benchmark Company in countries where we operate.

**OUR MAJOR ON-GOING INVESTMENTS IN SINES AND** MATOSINHOS GFARFD TO IMPROVING FNFRGY AND PROCEDURAL EFFICIENCY ARE OTHER EXAMPLES THAT GREATLY CONTRIBUTE TO THE **ECONOMIC SUSTAINABILITY** OF REFINING IN PORTUGAL. TO A SUBSTANTIAL IMPROVEMENT IN THE COUNTRY'S ENERGY BALANCE AND TO CONTROL OF THE **FMISSIONS ASSOCIATED** WITH THE PRODUCTION OF PETROLEUM PRODUCTS.

Manuel Ferreira De Oliveira

CEO

Galp Energia

# 02

### **BACKGROUND**





Galp Energia's sustainability strategy is based on the continuous innovation of management and the use of technologies and on the creation of business models leading to the sustained creation of economical, environmental and social value in the Company's entire value chain.

on a lor cial resurcholder

THE GALP ENERGIA

THE GALP ENERGIA
GROUP HIGHLIGHTS
THE IMPORTANCE OF
ENVIRONMENTAL VALUE
FOR THE DEVELOPMENT
OF ITS BUSINESS AND
SUPPORT FOR THE
SOCIAL DEVELOPMENT
OF SURROUNDING
COMMUNITIES.

A sustainable management consists on a long-term optimising of financial results and the creation of shareholder value searching for a balance between economical, social and environmental features inherent to the Company's activity. For this end, the goals of sustainable development restrict but also stimulate the activities of the Group.

The Galp Energia group is firmly assured its mission of shareholer value creation and customer satisfaction is fully compatible with its goal of contributing to the well-being of the communities with whom it interacts. Regarding this matter, we highlight the importance of the environmental value in business development

and the support to the social development of the surrounding communities.

Galp Energia's principles are grouped into the following values: customer focus, team work, entrepreneurship, result orientation, personal development and upgrade, innovation and continuous improvement, safety and environment and integrity and transparency.

The most focused features will be strategy, energy efficiency, environmental impact, partnerships with universities and research centres and products offered to clients and the committment to the well-being of employees and the communities where Galp Energia operates.

Drafted every year since 2006, Galp Energia's sustainability report follows the Global Reporting

Initiatives's guidelines in its third version (GRI 3), whose purpose is to disclose Galp Energia's economi-

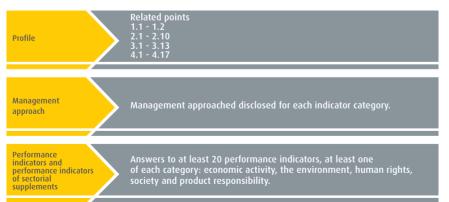
cal, social and environmental per-

formance under sustainability. This sustainability report was assured

by PricewaterhouseCoopers, an ex-

ternal accredited company.

#### Framework of the report



#### (GRI level: self-declared and assured)

CR CR							
GRI REPORT GRI REPORT	2002 IN ACCORDANCE	C	C+	В	B+	Α	A+
Mandatory	Self Declared				<b>/</b>		
Optional	Third party checked				<b>/</b>		
•	GRI checked						

## Galp Energia's vision of sustainable development and main measures in 2009

Galp Energia maintained in 2009 its committments in the several businesses regarding sustainable development.

In the Exploration & Production business segment, the search for new discoveries was focused not only on countries with high production potential but also in Portugal, which showed a diversified search for sustained energy safety.

Energy efficiency, sustainable mobility and the deepening of the relationship with the scientific community has been the main axes of Galp Energia's performance in sustainability, where it has positioned itself as a responsible company, namely due to its initiatives to reduce greenhouse gas emissions.

Under energy efficiency, the Company's efforts cover the entire value chain, from the implementation of the energy efficiency in the refineries the construction and development of new cogeneration plants in each refinery, the development of the wind project, which will increase the Company's energy flexibility, to the implementation of the Ecoposto refinery in the service stations.

In addition to these internally developed projects, Galp Energia sees energy efficiency as a responsibility to customers. Therefore, the Company has created a new unit called Galp Soluções de Energia.

Sustainable mobility is another important axis of Galp Energia's performance. To complement its refining and distribution activities of road fuel, the Company has seeked alternatives to conventional fuel, namely through the incorporation of biofuel, electrical mobility, the development of new additives to improve the efficiency of the engines and the reduction of the emissions of engines.



TO COMPLEMENT ITS
REFINING AND ROAD
FUEL DISTRIBUTION
ACTIVITIES, THE
COMPANY HAS SOUGHT
ALTERNATIVES TO
CONVENTIONAL FUELS.



#### Ethics code

In May 2009, the executive committee approved Galp Energia's ethics code. This important repository of standards is a fundamental instrument of orientation to the values, the vision and the mission of the Company and its main purpose is guiding the employees' conduct both internally and externally.

The implementation process of the ethics code creates awareness mechanism in every stakeholder, due to the reflection and discussion it requires.

The Company's accountability is an important innovation of the code. According to this principle, the Company is the first to make a commitment to society to follow the standards set out by the code.

Also regarding suppliers, the code introduces stricter criteria. Thus, the commercial relationship with Galp Energia enforces them to respect the Company's

code of ethics, when they do not have a code.

Regarding external commitments, the rules of the code are focused on the model conduct of employees towards the Company's partners. These standards are deliberately restrictive in relationships with both suppliers and customers in order to avoid privileges.

For this end, Galp Energia aims at making others respect the principles of impartiality and negotiating equilibrium, thereby moderating the effect of its position as a large-size company. Other principles that Galp Energia aims at guaranteeing are equality, reciprocity and proportionality.

The commitment to shareholders consists of providing the same information with the same degree of transparency to everyone, including small shareholders.

The code reflects the changes in the articles of association allowing every shareholder to participate in the management, since they can now vote, for example, remodellings of the board of directors in the general meeting. The two fundamental principles contained in the code for this area are transparency and strictness, indispensable in the management of a responsible company.

Regarding internal relationship, the code highlights respect for colleagues, non-discrimination, good work environment, good working conditions and reciprocity.



#### Main events





An incident in the utilities plant of the Sines refinery forces the stop of the refinery for a period of six weeks.





- The extended well test in Tupi, in the Santos basin, is started;
  The Autonomous Unit of Gas of Lamego comes on stream;
- Close of a €700 million funding facility for the refinery conversion project;
- The financing strategy of the Group's transformational projects is presented.





- The project of energy efficiency in the service areas is launched;
- · The first loading of Tupi oil is completed;
- · The Iracema well confirms the potential of light oil in Tupi.





- Oil production starts in the CPT at the Tômbua-Lândana field in
- Galp Energia debuts on the free electricity market selling to the first





• Test in the Tupi area shows high productivity of the reservoir.





- · Galp Energia enters the joint venture for the development of the
- natural gas liquefaction project in the pre-salt of the Santos basin; A Lump Sum Turn Key is signed with Tecnicas Reunidas for the conversion project of the Sines refinery;
- Galp Energia and Morgan Stanley Infrastructure acquire part of the distribution assets and the marketing activities of Gas Natural in the Madrid region.

#### Prizes

#### **IR** GLOBAL RANKINGS

- Galp Energia is awarded by the Investor Relations Global Rankings 2009 in the category of Best **Financial Disclosure Practices as:** 
  - 1<sup>st</sup> in Europe,
  - 2<sup>nd</sup> in the oil and gas industry
  - 3rd in the world.



Galp Energia is awarded at the Investor Relations & Governance Awards 2009 - Deloitte, Semanário Económico and Diário Económico the prize for the Best annual report of the Non-financial sector.

#### IRG Awards 2009 Investor Relations & Governance Awards

Prize awarded on 25 May in the cerimony of the APCE (Portuguese Association of Corporate Communications) in the category of "Corporate identity".



Galp Energia is ranked among the first eight winning projects in the Prize EDP electrical power environment 2008 - More efficient use of electrical power. Better environment.



Galp Energia also had four other merit prizes for the nominations in the categories of "Historical Responsibility and Corporate Memory", "Intranet", "Communication Campaign and Social Responsibility" and "Bulletin and Newsletter".

# SUSTAINABILITY REPORT 2009 • GALP ENERGIA

## Economic indicators and interpretation

CORE ECONOMIC INDICATORS	2008	2009	CHANGE (%)
Turnover (M€)	15,086	12.008	(20,4%)
Staff costs (M€)	292	339	16,1%
Retained economic value (M€)	28	439	1467,9%
Tax paid to the state (M€)			
Income tax	186	127	(31.7%)
Tax on oil products (ISP)	2,484	3,010	21.2%
Purchase of products and services (M€)	680	751	10.4%
Accounts payable (average number of days)	19	30	57.9%
Net profit (M€)	117	347	196.9%
Replacement cost adjusted net profit (M€)	478	213	(55.3%)
Capital expenditure (M€)	1,560	730	(53.2%)
Net assets(M€)	6,623	7,242	9.4%
Net debt (M€)	1,864	1,927	3.4%
EBITDA (M€)	449	819	82.5%
Replacement cost adjusted EBITDA at (M€)	975	619	(36.5%)
EBIT	167	459	174.2%
Replacement cost adjusted EBIT (M€)	693	287	(58.7%)
Capital expenditure in I&DT (M€) <sup>(1)</sup>	10,3	n.d. <sup>(1)</sup>	n.a.
Investment spending and current expenses on environment, quality and safety (M€) <sup>(2)</sup>	50,9	33.9	(33.4%)
Sold volumes in E&P (Mbbl)	3.8	3.0	(22.3%)
Probable and proven reserves of cruide oil (Mbbl)	28	35	26.6%
Sold volumes of refined products (Mton)	16,0	16.7	4.3%
Sold volumes of natural gas (Mm³)	5,638	4,680	(17.0%)
(1) Estimated value of the Group's Research and Technological Development. (2) Includes the most relevant invesments.			

Galp Energia's IFRS-based net profit was €347 million, including a positive inventory effect of €161 million. The replacement cost adjusted net profit in 2009 was €213 million, down €264 million when compared with 2008, a reduction caused by the fall of crude prices, the level of refining margins and the volumes

of natural gas, with impact on the operating performance of every business segment. The fall of the replacement cost adjusted net profit was attenuated by the lower IRB payable in Angola.

For further information, Galp Energia's 2009 annual report is available at www.galpenergia.com.

#### Risk management

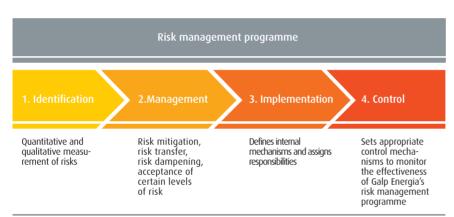
Galp Energia is exposed to several types of risks, such as market risks, operating risks and compliance risks. In this context, the Company set out policies and processes to measure, manage and follow its risk exposure. The purpose of the risk management policy is to help the business segment achieve their goals and follow the potential impact of risks on their results. Galp Energia's risk management policy seeks to optimise natural hedges in each business unit and



between different business units. In the second phase, Galp Energia identifies eventual residual market risks that may affect the expected financial flows or certain itens of the

balance sheet and analyses them in an integrated manner considering eventual correlations between exogenous variables that may affect the results of the Company's activities.

#### Implementation of a risk management programme



The purpose of introducing a risk management programme is to keep the risk linked to certain activities below levels that are acceptable to Galp Energia.

Galp Energia's risk management policy, which is set out by the board of directors, establishes goals and procedures and ascribes responsibilities for the management of the several risks. The Risk Management Committee has two members of the executive committee and several elements from the Corporate Finance department, the Refining & Marketing business segment and the area of Natural Gas Procurement. The committee sets out the mechanism of implementation and execution of the risk management policy and submits it to the approval of the executive committee. Results are evaluated on a monthly basis by the central unit responsible for every business unit. The committee may change the risk management policy within the guidelines set out by the board of directors or propose a new strategy at any time, if appropriate. The risk management policy of the price of raw material is implemented at the level of the business unit. The risks of interest rate, exchange and other financial risks are managed by the Company's departments of corporate finance and treasury. In addition, Galp Energia has other policies related to the management of treasury, insurance, environmental, health and information technology risks. All this information is available in detail in Galp Energia's annual report and accounts.



THE OBJECTIVE OF
THE COMPANY'S RISK
MANAGEMENT POLICY IS
TO HELP THE BUSINESS
SEGMENTS TO REACH THEIR
TARGETS AND MONITOR
THE POTENTIAL IMPACT
OF THE RISKS ON THEIR
RESULTS.

€18

MILLION
IN GRANTS

• In 2009, the Galp Energia Group received around €18 million in grants.



#### Financial incentives

The financial support provided by the Community Support Frameworks is an important financial lever to accomplish upgrade initiatives.

#### Incentives received

In 2009, the Galp Energia group received close to €18 million of grants corresponding to the following programmes and projects:

- From QCA III, for the infrastructures of natural gas distribution;
- From the Incentives System to the Creation of Research and Technological Development Centres in the Corporate Sector, for the creation of a research and technological development centre under the organisational structure of the Matosinhos refinery;
- From the IDEIA programme Support to Research and Corporate Development, for Petrogal to develop a new bitumen logistics system (SlogBetumes) in association with INEGI;
- From the European Social Fund, under PRIME, for training sessions.





€4.8 million. One of the applications to QREN has already been accepted.

Overall, these eight applications re-

present a total capital spending of

Regarding tax benefits, Galp Energia has made six applications to the SIFIDE related to the expenses with research and development made by six Galp Energia companies during 2008, which represent a capital expendinture of €10.3 million deductible for tax benefits.

Every application, except one, is still being evaluated by the entities.

The application of the "New Conversion Complex" project of Galp Energia's refining system, which was submitted in 2007 under the Articles of Tax Benefits, is still under the notification process to the European Commission.

Since the signing of the agreements between Galp Energia and the Portuguese state on March 2008, the analysis and approval process by European Commission is under way. It is a large project that will have an important impact, namely on the Portugal's trade balance and on the regional development of the implementation regions, mainly the creation of employment, energy efficiency and environmental protection.



IN TERMS OF TAX

INCENTIVES, SIX

APPLICATIONS WERE

AND DEVELOPMENT

EXPENSES, WHICH

REPRESENTED AN

**INVESTMENT OF** 

€10.3 MILLION.

SUBMITTED TO SIFIDE IN

**RELATION TO RESEARCH** 

Applications filed

Under QREN, the application to the Zeo+ project was presented to the SI&IDT, to be developed in the Sines refinery in consortium with the IST and the ISEL, whose purpose is evaluating the mechanical properties of the cement-based materials with the incorporation of the exausted FCC catalyst.

Also to QREN, Energy Regulation, six applications, one for each Autonomous Unit of Natural Gas, were presented, to be implanted in the concession areas of the several natural gas distributors.

The Strategic Study of Economic Viability for an Expansion of the Natural Gas Underground Storage Project in Portugal was submitted to the Trans-European Energy Networks (TREN).

# 03

### ENERGY CHALLENGES AND GALP SOLUÇÕES DE ENERGIA

ENERGY EFFICIENCY

MUST BE THE FIRST MEASURE

IN MITIGATING CLIMATE CHANGE

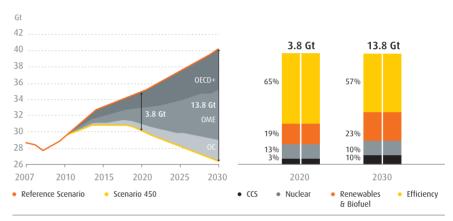
- IT IS IN THIS CONTEXT THAT

GALP SOLUÇÕES DE ENERGIA ARISES.



#### **ENERGY CHALLENGES**

Although there is no unanimity about what is considered sustainable in the long-term policies for the energy sector, there is a wide consensus about the need to limit the concentration of greenhouse gases and consequently the increase in global temperature.



Source: World Energy Outlook 2009, IEA

In 2009, the International European Agency (IEA), an autonomous body founded to implement an international energy programme, presented a scenario setting out that to decrease to half the probability of the global temperature not increasing over 2°C it is necessary to stabilise the greenhouse gases in the atmosphere in a concentration of 450 ppm CO<sub>2</sub> eq.

This scenario, known as *Scenario* 450, must arise from the combination of political measures, namely the creation of carbon markets, sector agreements and governmental initiatives to reduce greenhouse gases emissions.

In *Scenario 450*, the emissions of  $CO_2$  related to the production and consumption of energy will reach a

peak (30.9 Gt) just before 2020 and will decrease after 2030, reaching 26.4 Gt. The largest contribution to this reduction will come from efficiency in the use of end energy, which will represent over half of total savings in *Scenario 450*, in comparison with the Reference Scenario.

In this context and taking into account the importance of energy efficiency for the future, Galp Energia has increased its focus on developing products, solutions and services that award the rational use of energy and energy from cleaner sources.

It was in this context that Galp Energia decided to create Galp Soluções de Energia.

#### GALP SOLUÇÕES DE ENERGIA

Being energy such an important factor for the sustainability of economic and social development in the world, higher efficiency in the use of energy – producing more with less energy – seems like the most immediate and unavoidable solution.

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All over the world, the incremental introduction of solutions and measures of energy efficiency fosters the gradual decrease in consumption and contributes to restrict greenhouse gas emissions, thus avoiding the execution of high capital spending in the capacity expansion of electrical power generation and reliefing the pressure from demand.

This effort tends to stabilise energy costs allowing a smoother and safer transition to alternative energy sources, namely renewable energy, and fostering a new economic activity related to the development and exploration of technological solutions that accelerate energy efficiency.

Being sensitive to these issues, Galp Energia launched in July 2009 a new organisational unit named Galp Soluções de Energia (GSE). This new unit is exclusively devoted to the development and implementation of technological solutions and integrated services of energy efficiency, mainly renewable energy sources. The purpose of GSE is to support Galp Energia's clients in the optimisation of energy use, allowing the reduction of energy costs and the decrease in CO<sub>2</sub> emissions, thereby contributing to global efficiency and energy sustainability.

THE PURPOSE OF GSE

IS TO SUPPORT

GALP ENERGIA'S CLIENTS

IN THE OPTIMISATION

OF ENERGY USE, ALLOWING

THE REDUCTION OF ENERGY

COSTS AND THE DECREASE

IN CO<sub>2</sub> EMISSIONS,

THEREBY CONTRIBUTING

TO GLOBAL EFFICIENCY

AND ENERGY

SUSTAINABILITY.





GALP SOLUÇÕES DE
ENERGIA OFFERS A WIDE
RANGE OF SOLUTIONS THAT
INTEGRATE SERVICES
AND TECHNOLOGICAL
SOLUTIONS TO IMPROVE
ENERGY EFFICIENCY
AND THE USE OF
RENEWABLE ENERGY
SOURCES, WHICH WERE
DEVELOPED CONSIDERING
THE CLIENTS' SPECIFIC
NEEDS, NAMELY IN
TRANSPORTS, BUILDINGS
AND THE INDUSTRY.

## Range of services directed towards the needs of the market

Galp Soluções de Energia offers a wide range of solutions that integrate services and technological solutions to improve energy efficiency and the use of renewable energy sources, which were developed considering the clients' specific needs, nam ly in transports, buildings and the industry.

Services provided by GSE are structured in accordance with the intervention with clients:

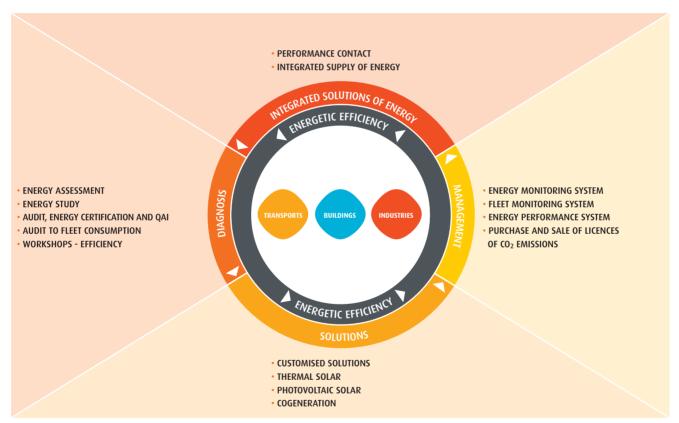
• Regarding *Diagnosis*, the included services are aimed at characterising, evaluating and studying the client's energy situation, the preparation of plans to improve energy efficiency and the eventual certification in accordance with the legislation;

- Regarding Management, several services of collection and treatment of information related to the clients' energy performance as well as support in the definition and implementation of eventual corrective measures;
- Regarding Solutions, GSE provides several technological solutions that allow clients to obtain important cost reductions with energy, such as heat or cold generation systems, cogeneration systems (combined production of heat and electrical power) and solutions based on renewable energy sources, namely thermal or photovoltaic solar systems;
- There are also provided *Integrated Energy Solutions*, which include the so-called *Contract of Energy Performance and the Integrated Supply of Energy.*



The *Performance Contract* arises from the definition, implementation and exploration by GSE of an investment programme composed of several measures and solutions whose goal is to capture the opportunities of efficiency improvement which were identified in a rigourous initial energy diagnosis. GSE supports the client throughout every phase of the implementation programme, namely in the inventoring and selection of technological options and equipments and in the assessment and sharing of every financial, technical and operating risk.

The Integrated Energy Supply service is aimed at satisfying several energetic needs, such as hot water, climatising, steam, heat, cold and electrical power, through the supply of useful energy that will be used in the client's applications. GSE chooses the most efficient solutions and technologies and promotes every activity, since the project and construction until the operation and maintenance of the systems which will supply the useful energy that the client needs.

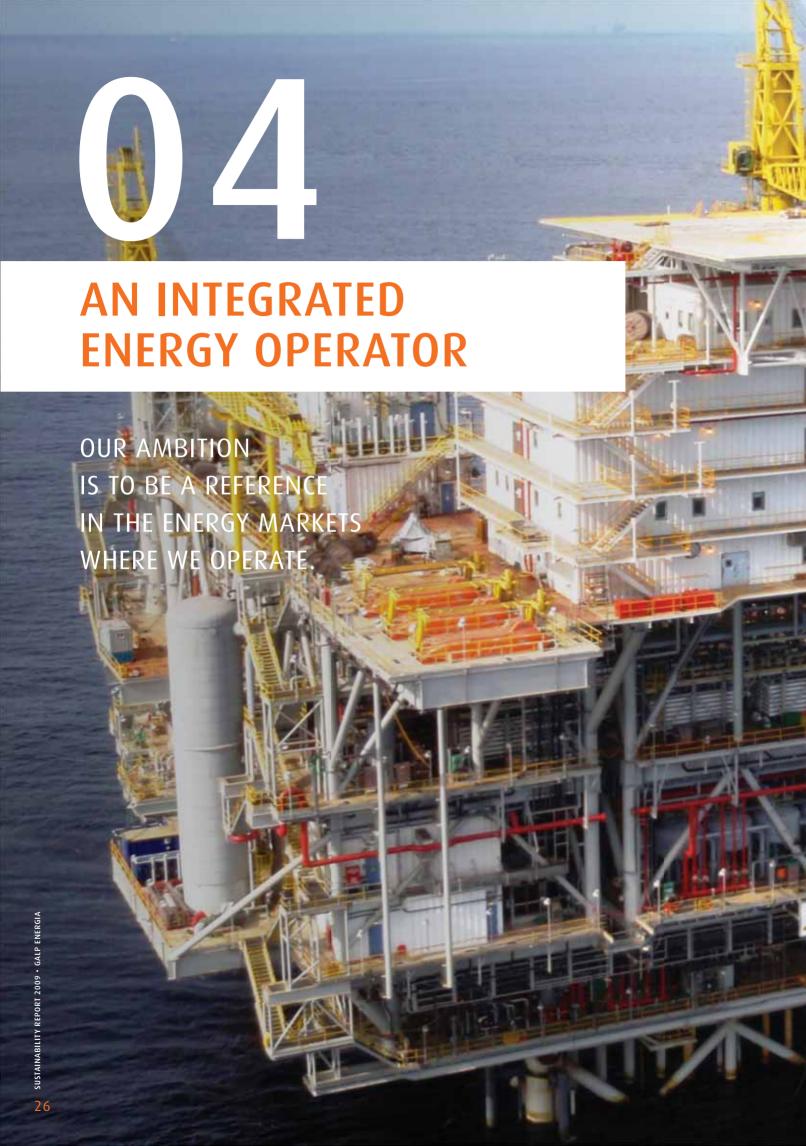


#### The first project of Galp Soluções de Energia

After a period of organisation, recruitment and selection of the human resources to be allocated to this new unit, GSE launched its activity in late 2009. Several commercial initiatives were developed and a set of projects were started.

Under its offer of integrated energy solutions and considering that its mission includes integrating renewable energy sources, the GSE agreed, in November 2009, with Parkalgar – Parques Tecnológicos, entity that owns the International Motor-Racing Track of Algarve, on the installation and exploration of a photovoltaic plant with 100 KW of injection power.

In this process, the GSE also identified, along with Parkalgar, the need to perform an energy audit to the current facilities of the motor-racing track, which consume in average close to 180,000 kWh per month. The goal of this energy audit consists of identifying saving opportunities and planning improvement measures of the energy performance.





#### **EXPLORATION & PRODUCTION**

## 3,065 мы

#### OF CONTINGENT RESOURCES (3C)

Galp Energia has a strong presence in exploration activities as it participates in one of the most important discoveries of reserves in present times:

the **Santos basin**, off the Brazilian coast, where the Tupi field has an estimated recoverable volume of between

#### 5 and 8 billion barrels.

Oil production is centred off Angola's coast, where there are strong expectations of growth beyond the current

13.9 thousand barrels a day.

In 2009, Galp Energia expanded its exploration portfolio with the addition of **new projects** to explore and liquefy natural gas in **Equatorial Guinea** and the **Santos basin's pre-salt** on top of new oil exploration in **Uruguay.** 

#### REFINING & MARKETING

16.7 Mt

#### **OF REFINED PRODUCTS SOLD**

Galp Energia refines petroleum and other raw materials, which it sources from more than 20 countries, in **two refineries** in mainland Portugal with a combined throughput capacity of **310 thousand barrels** per day. The ongoing conversion of the refining base will enable a better response to the rising demand for diesel in the Iberian Peninsula.

#### GAS & POWER

### 4.7 bcm

#### OF NATURAL GAS SOLD

Refined products are marketed mainly in Portugal and Spain, where 11.1 million tonnes were sold to direct clients in 2009. The acquisition of Agip's and ExxonMobil's Iberian subsidiaries raised materially the cover of refining activities by marketing activities. Galp Energia now operates around 1,500 service stations, mainly in the Iberian Peninsula but also in several African countries.

Galp Energia has contracts for the supply of **5.6 billion cubic metres of natural gas** from Algeria, by gas pipeline, and from Nigeria, by LNG tankers. The purchased natural gas is sold to more than one million clients in Portugal and Spain.

For its currently regulated distribution activities in Portugal, the company has

a network of close to 11 thousand km.

The expanding activities in the Power sector consist in the operation of cogeneration plants with capacity in place of **160 megawatts**.

Galp Energia is currently developing a project portfolio with new cogeneration plants, CCGT generation and renewable energy, mainly wind power.

## ABOUT THE EXPLORATION AND PRODUCTION OF OIL AND GAS

In the current environment of declining production in many onshore oil fields and the reduced probability of significant discoveries being made in these areas, companies in the oil sector have been investing in offshore exploration and production to replace reserves and sustain current production levels.

This trend is demonstrated by the fact that offshore oil production now accounts for almost one third of world output, with deep water and ultradeep water segments representing a new frontier of development for the oil industry.

Galp Energia has been significantly drawn to the attractive segment of deep water and ultra-deep water exploration and production, with more than two thirds of its current portfolio of exploration projects belonging to this category.

These new areas, with great potential resources, have become accessible due to the enormous technological advances witnessed over recent years.

From every exploration and production activity that took place in 2009, those concerning the presence of Galp Energia in the Santos basin will be highlighted, due to the state-of-the-art technologies being used and the relevance of the results.

Over the years, the average success rate in this segment has been higher than in onshore and shallow water exploration, and the sheer size of the discoveries has proved to be substantially higher.

# IN THE SANTOS BASIN TURN THIS REGION INTO A SUPPORT FOR GALP ENERGIA'S

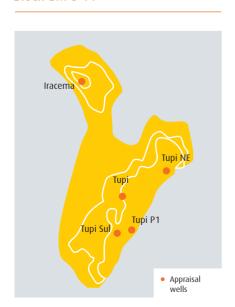
**LONG-TERM STRATEGY** 

FOR THE EXPLORATION &

PRODUCTION SEGMENT.

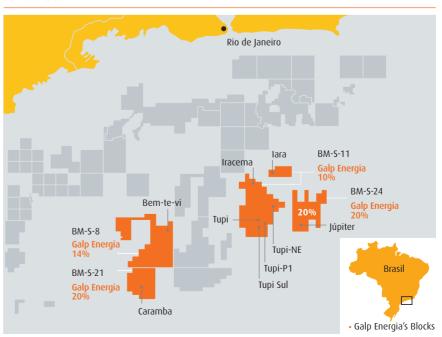
THE RECENT DISCOVERIES

#### Block BM-S-11



#### Oil in the Santos basin

Santos basin



In this basin off the Brazilian coast, Galp Energia operates in four blocks of ultra deep water, with areas spanning from 2,075 square kilometres and to 5,229 square kilometres in water depth between 1,600 and 2,500 metres.

The exploration of these blocks is focused on the pre-salt, i.e. accumulations of hydrocarbons located beneath a layer of salt with approximately two miles of thickness.

Recent discoveries in the Santos basin – Tupi, Iara, Iracema and Tupi NE in the block BM-S-11, Júpiter in the block BM-S-24, Bem-te-vi in the block BM-S-8 and Caramba in the block BM-S-21 – turned this region into the support of the long-term strategy of Galp Energia's Exploration & Production business segment.

The Tupi well confirmed the hydrocarbon potential in the pre-salt. Based on the results of this well and the geological and seismic information, recoverable volumes are estimated to range between 5 and 8 billion barrels of oil and natural gas.

The accumulation of oil is located between 5,000 and 5,500 metres bellow the sea level, under a depth of between 2,100 and 2,200 metres.



#### **Extended Well Test in Tupi**

On 1 May 2009, the extended well test (TLD ou EWT - Extended Well Test) was started in the Tupi field, which will spread over an estimated period of 15 months.

Production is being performed from the FPSO BW Cidade de São Vicente, which has enough capacity to process 30 thousand barrels of oil a day and is anchored on water depth of 2,170 metres, close to 280 kilometres off the coast of Rio de Janeiro.

The approval of the development plan of the Tupi field as well as the marketability declaration should occur until December 2010, in accordance with the agreement with the ANP.

In July 2009, the first export of oil of the Tupi field in the amount of close to 315 mil barris was made from the FPSO BW Cidade de São Vicente to the Nordic Spirit tank ship. This cargo was sent to the port of S. Sebastião, in the State of São Paulo, Brazil. In 2009, Galp Energia's total production in the TLD peaked at 283 thousand barrels of oil.

After the conclusion of the TLD, scheduled for late 2010, the pilot project will be started, whose FPSO has a capacity allowing a daily production of 80 to 100 thousand barrels of oil and 5 million cubic metres of gas, with an overall capital spending of Usd 3.7 billion related to the first phase of this project. This capital spending does not include the cost related to the renting of the FPSO and considers the capital spending in the pipeline to drain the natural gas that is produced.

In 2009 occurred the processing of the seismic data of blocks BM-S-8, BM-S-21 and BM-S-24. For 2010, it is scheduled the drilling of an exploration well in each of those blocks.



IN 2009, GALP ENERGIA'S

TOTAL PRODUCTION

IN THE TLD PEAKED AT

283 THOUSAND BARRELS

OF OIL.

## Project of natural gas liquefaction in the Santos basin

Galp Energia entered in 2009, with a stake of 16.3%, into a joint venture by Petrobras, the BG Group and Repsol. The consortium will develop three FEED projects for a floating liquefied natural gas unit (FLNG). This unit will operate in the Santos basin's pre-salt to recover the natural gas produced in the area.

Galp Energia's presence in the Santos basin, namely in the pre-salt blocks, as well as the future production of gas in these blocks prompted the study several of several options to monetise gas reserves by securing new sources of supply of natural gas and exporting to global markets, thereby implementing its long-term strategy of growing a business to market natural gas.

As a matter of fact, Liquefied Natural Gas (LNG) enables the supply of natural gas to customers located at great distances from production sites, who could not be supplied through the traditional solution, ie pipelines, due to economic reasons.

These are primarily projects based on large natural gas reserves located in the sea at a great distance from the coast and great depth. The most plausible solution consists of developing a technology that allows the liquefaction of natural gas near the production site, at sea, usually referred to as FLNG - Floating LNG.

The route that has been followed for the development of the FLNG concept lies in a combination of the FPSO - Floating, Production, Storage and Offloading solution traditionally used in the oil industry for the exploration of fields located in deep water, with the traditional solution of liquefying natural gas ashore. On the other hand, the creation of a model of modular and versatile unit that can be used in different projects is seeked.

The deployment of a FLNG solution is a huge challenge, due to both technical complexity and the volume of economic resources involved. To date, a unit has not yet been built and only a few went on to the execution phase of engineering. Of these, the only one that has clearly identified the target location and has a good chance of being the first facility to be built is the one being promoted by Petrobras jointly with the BG Group, Repsol and Galp for use in BMS – 9 and BMS - 11 of the Santos Bay.

In 2011, the best option for gas flow from the Santos Basin pre-salt will be decided, after the analysis of the technical and economic feasibility of FEED that will be presented to the FLNG unit and of other alternatives, such as the installation of new subsea pipelines. Completion of FLNG is scheduled for the beginning of the third quarter of 2015, if this solution is chosen.



ESTABLISHING AN FLNG
SOLUTION IS A HUGE
CHALLENGE, BOTH DUE TO
ITS TECHNICAL COMPLEXITY,
AND THE VOLUME OF
ECONOMIC RESOURCES
INVOLVED, AND IS HIGHLY
LIKELY TO BE THE FIRST
INSTALLATION TO BE BUILT.

# GALP POWER IN THE SALE OF ELECTRICAL POWER AND CO<sub>2</sub> LICENCES

Galp Power is the vehicle to develop the Galp Energia group's activity in the electrical power sector, including the marketing and the offer of technical services related to the conception and development of energy production facilities.

Under the development of its diversification strategy of the energy offer, Galp Power is a relevant competitor of the Portuguese incumbent of the sector. Galp Power aims at operating in the value chain of electrical power production and in every market segment by exploiting its unique potential to assert Galp Energia's position as a multi-energy supplier.

In 2009, Galp Power has prepared itself internally in terms of processes and procedures to present itself as a relevant operator in the electrical market and compete with companies that sell electricity in the Iberian market.

After the creation of the administrative infrastructure, the retail sale of electricity started on 25 September 2009 having been supplied close to 30 consumption points in the free market regime, thereby making this date a landmark for the entire Group. These first 30 clients were internal business units of the Galp Energia group, such as corporate services, several service areas of the Retail unit

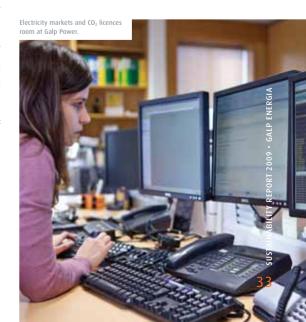
and logistics facilities. Although the supply was made in medium pressure in the start of the activity, the goal in the corporate segment is to increase the client portfolio and supply energy in every pressure level.

Also in 2009, Galp Power, in accordance with Galp Energia's positioning strategy as supplier of integrated energy solutions, continued setting up the trading department of electrical power and  $\mathrm{CO}_2$  emissions. The purpose is to develop the electrical power market in order to defend the natural gas client base in a deregulated market and manage in a centralised manner Galp Energia's portfolio of  $\mathrm{CO}_2$  licences, guaranteeing sustainable management and valuation.

Galp Power closes the year ready to trade licences of CO<sub>2</sub> and electrical power, with physical delivery in the Portuguese, Spanish and French electricty markets and financial delivery in the German market. Galp Power is a member of the following bourses: OMEL, OMIP, EPEX, EEX and ICE/ECX.



GALP ENERGIA INTENDS
TO ACT AND OPERATE
IN THE ELECTRICITY
PRODUCTION VALUE
CHAIN AND IN ALL
SEGMENTS OF THE
MARKET, TAKING
ADVANTAGE OF
ITS UNEQUALLED
POTENTIAL TO ASSERT
GALP ENERGIA'S POSITION
AS A MULTI-ENERGY
SUPPLIER.



## RENEWABLE ENERGY AND BIOFUELS

THE SEARCH FOR NEW
RENEWABLE ENERGY SOURCES,
THE DEVELOPMENT
OF THE WIND PARKS
OF VENTIVESTE AND
THE PRODUCTION OF RAW
MATERIAL FOR BIOFUEL
MARKED OUR ACTIVITY
IN 2009.





## MAIN DEVELOPMENTS

Besides continuing the search for business oportunities and performance priorities in the technological development and in the forecast of renewable energy resources, namely in offshore energy and small hydroelectric plants, Galp Energia proceeded in 2009 its energy diversification efforts through capital spending in the development of its subsidiary, Ventinveste, and the production of raw material for the production of biofuel.

#### **VENTINVESTE PROJECT**

In 2009, the activity of the development team of the six wind projects of Ventinveste, currently working at Galp Energia's facilities, focused on the assembly and monitoring of 16 towers of wind measuring, the search and acquisition of additional land, in order to maximise the production of wind farms, and on studies and procedures for the licensing of wind farms.



CONTRACTS ARE
BEING NEGOTIATED
FOR THE DESIGN AND
CONSTRUCTION OF
TURNKEY PROJECTS FOR THE
FIRST TWO FARMS (VALE
GRANDE AND DOURO SUL),
WORK ON WHICH WILL
COMMENCE IN 2010, WITH
STARTUP EXPECTED DURING
THE LAST QUARTER
OF THE YEAR.

As a consequence of this work, the Establishment Licence of the Vale Grande farm (10 MW) was obtained and a favourable Environmental Impact Declaration was given to the Douro Sul farm (172 MW).

For the parks of Picos-Vale do Chão (20 MW) and Cercal (34 MW) there were performed extraordinary evaluation works and studies for the elaboration of the respective environmental impact statements already with reception points attributed. The best location in terms of reception for the Tocha park (94 MW) is still being studied by the

responsibles of the public electrical network.

The conception and construction of the first two parks (Vale Grande and Douro Sul) on a turnkey basis are being negotiated, whose construction will start in 2010. The launch of the first park is scheduled for the fourth quarter.

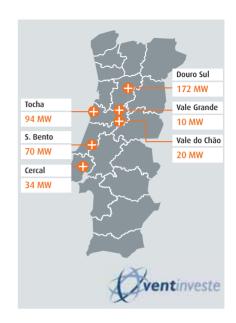
Regarding the component of the industrial cluster that completes the contracted project, which is of the responsibility of Grupo Martifer with the support of Repower AG, from Hamburg, and licensor of the aerogenerators that will be partly produced and assembled in Portugal, the capital spending in the 16 industrial units for components and for the construction, operation and maintenance of the parks continued. From the final assembly unit, 58 complete sets of nacelle have already gone to France and Italy.

Until late 2009, close to €66.08 million were invested having been surpassed the €66 million contracted with DGEG. Currently, there is high capital spending, namely in the Pás plant in Vagos, whose capacity will be increased.

At the same time, two of the six partial payments, each with close

to €4.18 million, have already been made to the Innovation Support Fund, as one of the counterparts agreed in the tender.

In terms of Ventinveste's share capital, the society that held the 30% stake of the ex-Grupo Enersis was acquired by Martifer in 2009 and its capital has already been splitin equal parts with Galp Energia in early 2010. After this operation, the shareholders of Ventinveste will directly or indirectly be the Galp Energia Group with 49%, the Martifer Group with 46.6%, Repower AG wth 2.4% and the Efacec Group with 2%.



### **BIOFUEL**

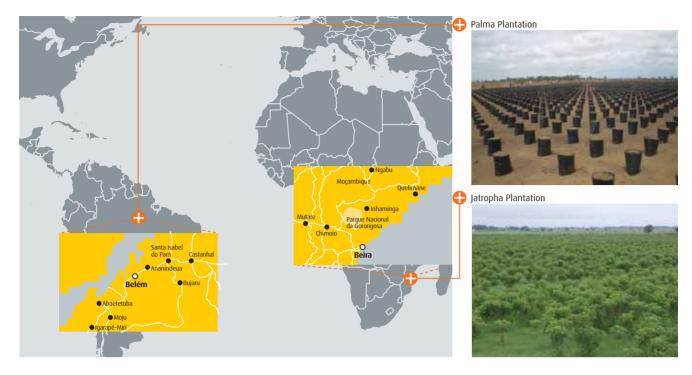
### Incorporation of biodiesel in the Iberian market

With the adoption of the Renewable Energy Directive to the transport sector, 2009 was a turning year in the biofuel sector in Portugal and Espanha. In accordance with the legal framework in force in each country, the incorporation of biofuel became mandatory. Galp Energia contributed decisively to the massive introduction of this renewable product in the daily life of every consumer.

Since April 2009, Galp Energia incorporates close to 5% (v/v: in volume) of FAME (1st generation biodiesel acquired in the market) in the road diesel sold in Portugal. This percentage rose to close to 6% (v/v) from August, in accorance with Decree-Law DL No. 49/2009, of 26 February, after the change of the European standard of this product (EN590). This legislative change allowed the increase in the maximum limit of FAME incorporation in road diesel, leading to the substitution in 2009 of an average of 4%

in terms of energy in transports. In Spain, due to compliance with *Orden ITC/2877/2008*, Galp Energia replaced 3.4% of fossil energy in the transport sector by renewable energy with biofuel that replaces road diesel and gasoline.

However, Galp Energia's project in this chapter is more ambitious, since it aims at becoming an integrated producer of second generation biodiesel (green diesel) to incorporate in the road diesel it sells.



## Plantations of raw material for biofuel in Mozambique and Brazil

Galp Energia's biofuel project achieved significant progress in 2009, with the installation of the first experimental portions of *Jatropha curcas Linn (JCL)* in Mozambique, by GalpBuzi and Moçamgalp, and the start of the production project of palm oil in Belém, Brazil. The first social support initiatives took place providing resources for the production of food for the workers and families involved in the projects.



THESE EFFORTS WILL BE
MULTIPLIED MANY TIMES
OVER THE NEXT FIVE YEARS,
PERIOD IN WHICH WE ARE
EXPECTED TO REACH
THE TARGET OF PLANTING
AT LEAST ONE TREE ON
BEHALF OF EACH OF GALP
ENERGIA'S CUSTOMERS
WORLDWIDE,
CONTRIBUTING ON THEIR
BEHALF TO A GREENER
PLANET.

Since the start of this project, Galp Energia's performance has been characterised by self-imposed criteria aimed at making its activities environmentally and socially sustainable, besides being efficient and profitable. This direction is aligned with the demands of the Directive 2009/28/EC of the Parliament and the European Parliament related to the promotion of the use of energy from renewable sources (Renewable Energy Directive).

Galp Energia anticipated these concerns since the beginning of its project and is based on clear and verifiable principles of environmental sustainability, which determined the location of the plantations. Soil with farming potential were excluded,

along with land, such as forest areas and land rich in biodiversity, whose changed use might affect natural carbon stocks.

Galp Energia's local technical teams also guaranteed the implementation of the best farming techniques known translating into the reduction of greenhouse gas emissions, the decrease in the use of production factors as fertilizers and phytopharmacy and a minimal or inexistent use of the soil.

Until now, close to 640,000 plants of JCL have already been planted in Mozambique corresponding to an approximate area of 500 ha.

In Brazil there are over 1,100,000 seedlings of palm in a greenhouse arboretum, whose plantation will occur throughout 2010 and cover 6,500 ha. This effort will be multiplied several times throughout the next 5 years.

During this period the goal is to plant at least one tree in the name of each customer in the world, thereby contributing to a greener planet.

### Project for the production of Jatropha in Mozambique

In 2009, several studies and rehearsals were performed in order to evaluate environmental benefits and the behaviour of green diesel (or HVO- Hydrotreated Vegetable Oil).

Tests for physical-chemical characterisation of the product were performed along with use rehearsals of green diesel in diesel engines. Performed studies in partnership with Petrobras and the LNEG proved the economic and environmental benefits of the product when compared to the alternatives, both when compared to the substitute fossil fuel (diesel) and traditional biodiesel, currently incorporated in the fossil.

Galp Energia performed a study on the analysis of the life cycle of the green diesel produced from JCL oil. The purpose was to calculate the reduction of greenhouse gas emissions in comparison with fossil road diesel, thus comparing the environmental effect of that product when compared with other alternatives.

In the constant search to connect Galp Energia to the Portuguese Scientific and Technological System, the study was performed in two stages. The first stage was performed in association with CESAM (Research Centre of the Environment and the Sea) of the University of Aveiro, for the assessment from the life cycle until the production of vegetable oil. In the second stage, the study was made in association with the Department of Chemical Engineering of the Technical University of Michigan, in the United States, for the phase of industrial processing of green diesel.

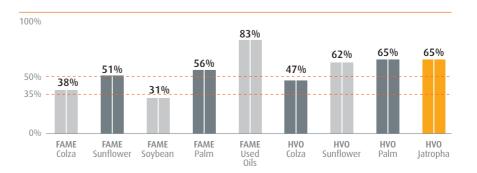
The achieved results were very satisfactory and showed the environmental potential of this product. For this end, after counting the emissions of every production operation of green diesel from JCL planted in Mozambique, it is estimated that the emissions of greenhouse gases - excluding those from the change in the use of soil - are 29 gCO<sub>2</sub>-eq/MJ of biodiesel. This amount represents a reduction of 65% when compared with fossil road diesel as well as a significant decrease in emissions when compared with first generation biodiesel which is currently produced by the transesterification technology (FAME - Fatty Acid Methyl Ester).

The figure below is a summary of the reductions considering the type of technology to proce biodiesel (FAME or HVO) and the raw material that was used. The last column (in orange) represents the reduction of the emissions of greenhouse gases related to the referred to study for the production of green diesel using JCL oil produced in Mozambique, which had one of the most significant reductions.



GALP ENERGIA HAS
ANALYSED THE LIFE
CYCLE OF GREEN DIESEL
PRODUCED FROM
JATROPHA OIL AND
IT IS ESTIMATED THAT
REDUCTIONS IN GHG
EMISSIONS COULD REACH
65% AS COMPARED WITH
FOSSIL-BASED ROAD
DIESEL.

Amounts of the reduction of greenhouse gas emissions, by default, in comparison with fossil road diesel I (100%), for the several types of biodiesel produced, not considering the liquid carbon emissions due to the changes in soil allocation (methodology of Appendix V, of RED).





There were 28 speeches. The following findings were announced:

- Jatropha curcas L. (JCL) is a culture with a small expression in the world vegetating spontaneously or in hedgerows, where it has value for the landscape and it used for medicine and energy;
- In several projects of biofuel production, JCL was included as an alternative to the supply of raw material based on the assumption that the plant has high oil productivity, low production cost for being perennial and resilient to hydrostress, which would be a significant advantage, mainly in semi-arid regions<sup>1</sup>;
- Sickling in extensive areas is a matter of concern, since the technical knowledge of this culture is still small;
- It is still difficult (1) to forecast its productivity, (2) to know the resilience and tolerance to hydrostress, (3) to dominate the problems caused by plagues and diseases, (4) to know how to appreciate its diversity (5) due to the absence of a sufficiently reliable production system;
- Expectations of high productive potential of oil for biodiesel and the significant advantages that JCL possesses proceed; and
- There is the need to reinforce capital spending on research related to this culture and its maintenance in the long term in order to obtain definitive results.

(1) In the biofuel legislation in Mozambique JCL is included in the list of allowed productions

### Organisation of a scientific seminar on biofuel

Under the scientific cooperation initiatives and the knowledge sharing with developing countries, the projects under the agreement with the Eduardo Mondlane University in Mozambique proceeded. From 10 to 12 September, the 1st Scientific Seminar on Biofuels took place in Maputo for the analysis of the environmental and social impacts of the agro-industrial projects of biofuel production. This seminar was organised in association with the Faculty of Agronomy and Forest Engineering of the Eduardo Mondlane University, Galp Energia and RIEAM - Network of Ecological and Environmental Research of Mozambique.

In addition to the academic entities, the Portuguese Ambassador in Mozambique, Moçamgalp's directors in Mozambique and the President of IPAD, which conducted the discussion in the first day, attended the opening cerimony.



# Sowing of sunflower made in 2009 by Galpbúzi in Mozambique.

### Social support initiatives to the population of Mozambique

At the same time of the installation of the first Jatropha plantations in Mozambique (in Búzi and Chimoio), GaplBúzi, associated company to Galp Energia in Mozambique, sow the seeds of 25 hectares of sunflower producing close to 14 tonnes of seed for the production of food oil for the local population. During a period of higher food scarcity, close to 1 tonne of corn flour locally produced was distributed to 200 workers and their families, as an income complement. There was a contribution to the development of the territory, to the improvement of the population's life conditions as well as to their food safety,

menaced several times by cyclically adverse climate conditions.

A GalpBúzi has under way the creation of a district network to complete its own production with productions guaranteed by small local farmers. Exploiting that network and the means available for its implementation, an association with the district farming authorities for the distribution of 1.4 tonnes of certified sunflower seeds for the development of familiar farming was created. In 2009, this green revolution covered close to 500 small farmers.

## Actions of development and improvement of social and training infrastructures

### Awarded scholarships

The memorandum of understanding with the Eduardo Mondlane University, which was referred to in the seminar about biofuel, set out the committment of awarding scholarships to students of agronomy of that university and also offering company internships aimed at integrating students in the labour market and developing their entrepreneurship spirit.

### Recognition of the IPAD

The local support and integration actions made by the two managing directors working in Mozambique at Galp Energia companies for the biofuel sector (GalpBúzi and Moçamgalp) were recognised by the IPAD (Portuguese Institute of Development Support) as relevant for cooperation in Portuguese-speaking countries. Therefore, they received the status of Portuguese Cooperation Agent for the second year running.



### Rebuilding and expansion of the School 1 de Junho

Under the social actions in 2009 of support to the surrounding populations of the biofuel projects, the construction, supported by Galp Energia, was completed at the Primary School 1 de Junho (school located in Companhia do Búzi), which had been started in late 2008, thereby allowing the improvement of the teaching conditions for the close to 1,000 children of the region. These children can now use proper facilities equipped in order to guarantee their pedagogical development.

### Other activities

### Signing of an agreement with the Agrarian Technical-Professional School of Chimoio

In order to promote the increase of knowledge and the exchange of technical and professional information about the Jatropha culture, in particular, and biofuel, in general, an agreement was signed with the Agrarian School of Chimoio, which includes internships to last-year students and the organisation of speeches to transmit the experience obtained with the first plantations in late 2008. The candidates were chosen by the Faculty of Agronomy and Forest Engineering (FAEF), in early 2009, and the scholarships were awarded to students who have already made projects related to the phytosanitary protection of the Jatropha culture and to the economic and social impact of that culture.

### Computer room of the Eduardo Mondlane Secondary School, in Chimoio

Galp Energia sponsored, in association with the Microsoft Foundation, the installation of a computer room equipped with 35 desktops and a multimedia projector in the Eduardo Mondlane Secondary School in Chimoio, Mozambique. This initiative helped over 3,000 students from this secondary school access new communication technology. The official opening of this space was attended by the Governor of the Province of Manica, the Province Director of Education and the Director/Coordination of the local delegation of the Ministry of Education.





#### Projecto Belém

This project was started in May 2007 with a memorandum of understanding between Galp and Petrobras. In October 2008, the initial memorandum was confirmed with an investment agreement for the creation of a joint venture for the sustainable production of palm oil in Brazil and the subsequent transformation in second generation biodiesel (green diesel) in Portugal.

### Important landmarks of the project

- June/September 2009 Installation of 1,100,000 seeds in greenhouses;
- 2011 Planting of the first 6,500 ha (1st parcel);
- 2013 Start of oil production which will reach close to 300,000t/year from 2018;
- 2015 Planting of the last parcel completing 50,000 ha.

# Social, environmental and economic sustainability at the production of palm oil at the State of Pará, Brazil

In 2009, the *Projecto Belém* was launched in the State of Pará, Brazil. It is a partnership between Petrobras and Galp Energia aimed at the production of oil palm in a region characterised by:

- · A long rain season with abundant rain;
- · Poor and old soil;
- A vegetable coverage predominantly of the equatorial forest type, partially delapidated in the decades of 70 and 80 for farming and cattle;
- Mineral extraction and wood exploitation as the main economic activities;
- Mainly rural population, which is predominantly devoted to subsistence and extractivism cultures, and considered socially poor.

Currently, due to the higher collective awareness of environmental problems and governmental incentive programmes to reforestation and rural recycling of these areas previously anthropized, there are adequate conditions for the development of the palm culture in the region of the State of Pará.

Given the background and after specialised technical studies, the region of Pólo do Dendê, in the State of Pará, was chosen as the best prepared region to develop the project in Brazil. Thus, the Projecto Belém relates the corporate goal of producing 300,000 tonnes a year of palm oil, with return and efficiency, to social and environmental sustainability in order to contribute to decrease the current inequalities in the region.



THE BELÉM PROJECT
ASSOCIATES THE
VALUES OF SOCIAL AND
ENVIRONMENTAL
SUSTAINABILITY WITH THE
OBJECTIVE OF PRODUCING
300,000 T/YEAR
OF PALM OIL.

### Social sustainability

Contribution to the improvement of the life conditions of rural populations:

- The Projecto Belém started with the production of 1,100,000 of palm plants and the future reforestation of 6,500 hectares of anthropized areas creating in average direct and indirect employment for 75 rural workers and reaching close to 200 workers in peak periods. In steady state, the project aims at creating close to 9,000 jobs, direct and indirect;
- The perennial character of the palm culture, with an economic life that may reach 40 years with the new varities, whose harvest is made throughout the year, with inherent improvements in cultural relationships, will allow a regular occupation of rural workers and families during a longer period;

- In the short and medium term, the project will promote the involvement of 2,000 families of farmers in palm production providing a family income higher than the average;
- The installation of social works in agro-industrial complexes to support rural workers and their families, such as schools, health centres and day cares supported by social assistance, is scheduled.

#### **Environmental sustainability**

Several initiatives guarantee the preservation and recovery of the environment:

- The project will occupy and recover areas degraded by human activities, previously deforested and currently abandoned and eroding.
   The reforestation will be made with the palm culture;
- For the installation of the first greenhouses, a degraded area was used covering only 20% of the
- overall acquired area. The remaining forest area was preserved; the protection of areas that still have not been deforested will be very important to stop the spread of that contagion.
- The Permanent Preservation Areas will also be subject to the special attention of the project.

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BIOFUELS ALLOW
SUSTAINABLE SOLUTIONS
TO BE CREATED
OPTIMISING EXISTING
TECHNOLOGY.

### The future

The production projects of economically, environmentally and socially sustainable raw material for the production of biodiesel will proceed within the defined strategy in Brazil, with the development of the agro-industrial operation for the production of palm oil, and in Mozambique, with the development of the production projects of vegetable oil of JCL. These initiatives are an important foundation of Galp Energia's sustainability strategy in the fuel sector.

Galp Energia develops its biofuel project creating the conditions to produce in the future a renewable project is sustainable in environmental terms but also in economic and social terms searching for the use of the current technological structure, logistics and engines without additional capital spending for the stakeholders,

thereby guaranteeing the effective reduction of emissions, contributing to the progressive decarbonising of the energy offer in the transport sector and placing Portugal in the front line of the use of renewable energy sources.



# 06

### ENERGY EFFICIENCY AND SUSTAINABLE MOBILITY

THE ECONOMIC CRISIS
AND THE HIGHER AWARENESS
OF ENVIRONMENTAL
SUSTAINABILITY CHALLENGED
THE DEVELOPMENT
OF INNOVATIVE SOLUTIONS
IN ENERGY EFFICIENCY
AND MOBILITY.



### PROCESSING CAPACITIES

**6,000** ton/day *Vacuum Visbreaker* 

**43,000** barrels/day *Hydrocracker* 

**90,000** m<sup>3</sup> of H<sub>2</sub>/hour Steam Reformer

### KEY NUMBERS OF THE MATOSINHOS REFINERY CONVERSION

**12,600** m<sup>3</sup> Volume of concrete

**2,000** ton
Weight of metallic structures

**72** km Length of piping

**350** km Total length of cables

**1,200** people
Peak manpower during construction

#### **SINES REFINERY**

**47,000** m<sup>3</sup> Volume of cement

**7,000** ton
Weight of metallic structures

600 km Length of piping

**2,750** km Total length of cables

**4,500** people Peak manpower during construction

### **ENERGY EFFICIENCY**

Until 2020 and referring to 1990, the European Union will have to reduce 20% of its greenhouse gases, 20% of energy production must come from renewable sources and energy efficiency must increase 20%.

Galp Energia is aligned with these goals. Therefore, Galp Energia promotes both internal initiatives and initiatives for clients to improve the efficiency of energy consumption and the management of its  $\mathrm{CO}_2$  emissions.

Galp Energia has developed several measures to improve its energy efficiency in the entire value chain. The main projects, which are part of the general plan for the conversion of refineries, are presented in this chapter.

### The Energy Efficiency Plan 2008-2011 at refineries

Continuing the energy efficiency plant for the 2008-2011 period, the projects scheduled for 2009 were implemented, including the come on stream of the cogeneration plant of the Sines refinery, with gas turbine and 82 MW of nominal electrical power. Besides replacing the burning of fuel oil by natural gas, a cleaner fuel, this unit will increase energy efficiency due to the simultaneous production of electricity and steam and will provide an important contribution to the reduction of  $\mathrm{CO}_2$  emissions still directly related to the refinery.

### ADVANTAGES OF THE NEW SYSTEM

The main advantages of its entry into operation are:

- Higher yields of diesel;
- · Greater flexibility in the choice of crude;
- Greater energy efficiency;
- Competitive operating costs;
- Equipment reliability and uptime in line with benchmark values.

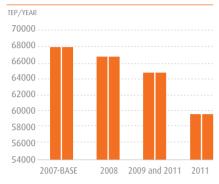
In 2009, there were other initiatives of energy efficiency, such as the streamlining of burning in furnances and the recovery of heat losses occurred in the steam networks.

Following the sequential capital spending plan, the construction phase of larger projects to be completed until the second quarter of 2011, in the Matosinhos refinery, and until the third quarter of 2011 in the Sines refinery, was started in November 2009.

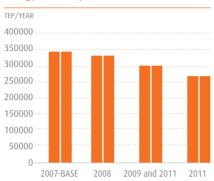
The charts show the expected reduction of consumption in both refineries until 2011. The base value for analysis is the consumption.

In 2007 and the expected reduction in subsequent years will be caused by the measures showed in the following tables.

#### **Sines refinery** Energy consumption



#### Matosinhos refinery Energy consumption



2008 Reduction with Optimisation of Temperatures, Pressures, Use of Steam Reboilers, Steam Recovery. Purger Revision;

2009 Reduction with Cogeneration /
 and Recovery of Steam and Condensates
 2010 / Increase in the Change Area /
 Energy Integration;

**2011** Reduction with the revamp of the change train of atmospheric distillation, ISOMAX Stop, Lower consumption in the Hydrogen Production Unit, Flare Gas Recovery, New Exchanger "Packinox".

### 2008 Reduction with the recovery of stream/condensates and furnaces losses;

2009 Reduction with Substitution/Installation (Purger / O<sub>2</sub> Analysers/ Steam meter)/Streamlining of furnaces;

2011

Reduction with Streamlining of Train Change of Atmospheric Distillation, Desulphurisation / Cogeneration Plant / Revamping of the Furnace of Atmospheric Distillation/ Flare Gas Recovery / Replacemement of the ISOMAR Turbine.

### THE NEW REFINERY PLANTS

#### VACUUM VISBREAKER

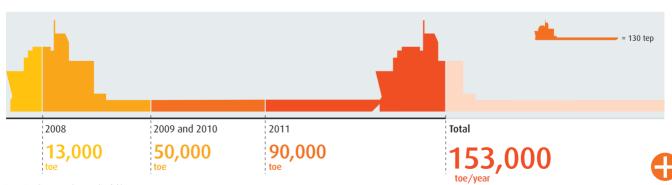
The vacuum distillation and visbreaker units to be built at the Matosinhos Refinery will be designed to treat 40,000 bbl/day of atmospheric waste produced in the refinery, which corresponds to an output of 975,000 tons/year of heavy diesel for hydrocracking and 725,000 t/year of fuel oil component.

#### **HYDROCRACKER**

The Hydrocracking Unit will use vacuum diesel and visbreaking heavy diesel produced in the Matosinhos and Sines refineries as feedstock. It will have a processing capacity of around 43,000 bbl/day, which corresponds to the use of 3,200,000 t/year of atmospheric residue as primary feedstock.

#### STEAM REFORMER

Steam reformer unit with uses natural gas or naphtha as its raw material to ensure the production of hydrogen necessary for the hydrocracking process.



Note: 1tep (Portuguese) = 1toe (English)

Considering the development of the projects and the improvement of the calculation of expected energy consumption for ongoing projects, energy consumption reduction of close to 153,000 toe/year is expected in both refineries until 2011, regardless of the increase in consumption due to the increase in production expected for this year.

THE ANNUAL REDUCTION
IN ENERGY CONSUMPTION
AT THE TWO REFINERIES
CORRESPONDS TO 1.2
TANKERS.

#### Matosinhos Refinery-short-term plan

Installation of the Thermal Cracking Balloon and Fraccionator of the Visbreaker Unit

17/18 November 2009

Start of the assembly of the furnace
Of the Vacuum Distillation Unit
28 November 2009

Start of the assembly of the Vacuum Distillation Column

25 January 2010

Start of the assembly of the Separation Column Of Acid Waters

25 January 2010

Completion of the Paving of the units of Vacuum and Visbreaker

29 January 2010

Completion of the Passage over Street M

19 February 2010

# COGENERATIONS AS HIGHLY EFFICIENT CAPITAL SPENDING IN ENERGY

Galp Power is responsible for the management of the cogeneration plants where the Galp Energia Group is a fully owner or has a major stake.

The Powercer Plant, which supplies steam to the factory installations of Sociedade Central de Cervejas, and the Plant of Carriço Cogeneration, which supplies hot water to the salt factory of Renoeste are included in this group. Recently, the Sinecogeração plant, which supplies steam to the Sines refinery, came on stream.

The Carriço plant is composed of a tur-

bo generator group running on natural gas with 30 MWe and a recovery boiler for the production of hot water with 40 thermal MW of capacity.

The Powercer Plant is composed of a turbo generator group running on natural gas with 7.2 MWe and a recovery boiler, with additional burning, for production capacity of 30 ton/h of saturated steam on 13 bar.

#### Sines Refinery-short-term plan

Start of the assembly of the Isobutane Separation Column15

January 2010

Completion of the mobilisation of mechanical construction contractors

20 January 2010

Start of the installation of piping in the connections to the Hidrocracking

1 February 2010

Start of the installation of aero coolers 10 February 2010

Completion of the foundations of the tanks

15 February 2010

Hydrocracking reactors – arrival to the location

15 March 2010

Completion of the Civil Engineering works of the First Substation

15 April 2010



The Sinecogeração is composed of two turbo generator groups running on natural gas with 40 MWe and two recovery boilers, with additional burning, with 125 ton/h of overheated steam on 82 bar and 520 °C of production capacity. This installation is part of the refinery's upgrade plan and represented €77 million of capital expenditure.

The plants of Carriço and Powercer have individual environmental licences. Powercer's licence was achieved in 2009. The licencing of the Sines plant was integrated in the environmental licence of the Sines refinery.

The plants comply with the standards and guidelines of best environmental practices, such as complying with the emissions of CO, NOx and particles, residue management, etc. Measures that are implemented in order to comply with every legal requirement are annually reviewed.

Besides compliance with legal requirements, some measures to improve the efficiency of the plants' performance are implemented, thereby achieving increasingly demanding performance levels.



In 2009, the construction project of the cogeneration plant of the Matosinhos refinery was started. This plant will be composed of two turbo generator groups running on natural gas with 40 MWe similar to those installed in Sines and two recovery boilers, with additional burning, with 130 ton/h of overheated steam on 66 bar and 450 °C of production capacity.

The purpose of the current project of the installation of two new cogeneration plants in the refineries of Sines and Matosinhos is to supply high-pressure steam to refineries benefiting from the advantages of the combined production of electrical and thermal power through the burning of natural gas in gas turbines, which is the technology with the higher energy efficiency in the production of steam in the necessary conditions for the refineries. Steam to be produced in the new cogeneration plants will substitute most of the steam currently produced in the boilers on fuel.

In terms of emissions to the atmosphere, decreases in comparison with the current situation will be significant in elements such as

sulfur oxide (considering that the fuel of the cogeneration plant will be natural gas) or even particles, nitrogen oxides and carbon dioxide (particularly in the component related to thermal energy). Concerning production electrical the power, these three installations jointly avoided the emission of 372,289 tonnes of CO<sub>2</sub> in 2009 in Portuguese electroproducer system by replacing the same 551 GWh produced in conventional thermal plants (for a correspondence of 750  $gCO_3/kWh$ ).

CONCERNING THE
PRODUCTION OF
ELECTRICAL POWER, THESE
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JOINTLY AVOIDED THE
EMISSION OF 372,289
TONNES OF CO<sub>2</sub> IN 2009
IN THE PORTUGUESE
ELECTROPRODUCER SYSTEM.

	CARRIÇO	POWERCER	SINECOGERAÇÃO	TOTAL 2009
Natural gas consumption (Mm <sup>3</sup> )	56	16	113	186
Thermal production (GWh)	283	94	1,357	1,734
Electrical power production (GWh)	219	36	296	551
CO <sub>2</sub> emissions (ton)	120,986	35,100	246,746	402,832

The workings of these plants are a measure of energy efficiency promoting the reduction of the use of primary energy sources and the subsequent reduction of CO<sub>2</sub> emissions and contributing significantly to the improvement of the performance in the energy efficiency of both refineries of the Group and in Portugal.

### **Ecoposto project**

The application of the Ecoposto concept in a service station guarantees, according to the performed pilot project, 20% of energy savings. In average, its implementation allows the offset of close to 30 tonnes of  $CO_2$ /year, the equivalent of close to 200 thousand kilometres made by a car that releases 160g of  $CO_2$ /km.

In June 2009, Galp Energia presented the Ecoposto project in order to promote the energy efficiency of its service areas. This goal is being accomplished by implemen-

ting sustainable solutions with positive impact on energy efficiency and autonomy through the use of renewable energy sources for energy production.

 The Ecoposto project was among the first eight places in the Prémio EDP Energia eléctrica e ambiente 2008, presented in 2009. In the first phase, this project covered 12 stations. The service area of Seixal was the first service area where the Ecoposto concept was fully implemented.

Among the main measures implemented in the Ecopostos, there was the installation of photovoltaic solar panels for electrical microgeneration, with 62,470 kWh of overall production and 3.6 kW of power

unit (43.2 kW overall). At the same time, efficiency measures were adopted in the use of lighting, cooling equipments and air conditioning equipment. In addition, the heating of bathroom water was introduced or improved using solar thermal energy. This set of measures allowed the reduction of consumption maintaining the comfort and operationality of the service areas.



The impact of individual behaviours on the continuous improvement of energy efficiency is very important. Therefore, the Ecoposto project also comprises intense awareness and training in order to generate behaviour changes regarding the use of energy in service areas.



THE APPLICATION OF
THE ECOPOSTO CONCEPT
ENSURES AN ENERGY
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AVERAGE, IT ALLOWS
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AROUND 30 TONS OF
CO<sub>2</sub>/YEAR, THE
EQUIVALENT OF ALMOST
200 THOUSAND
KILOMETRES TRAVELLED BY
A CAR THAT EMITS 160G
OF CO<sub>2</sub> PER KM.

### The Ecopostos have an integrated system of energy management

The Ecopostos are permanently monitored by a custom-made integrated system of energy management. This solution provides the real-time measurement of both consumption and the production of electrical power through microgeneration, thereby identifying the timeliness and

impact of efficiency measures to be implemented. With this system, Galp Energia will be able to intervene in a sustained manner in the energy performance of its service areas as well as compare the performance of its service areas, in accordance to their typologies.

### The expansion of the Ecoposto to Galp Energia's direct management network

Integrated in a set of internal initiatives to promote energy efficiency, the Ecoposto concept will be gradually extended to Galp Energia's network of direct management, which is composed of over 100 service areas in Portugal. Simultaneously, this concept is also being promoted in the reseller network, requested by resellers themsel-

ves. This expansion is scheduled for 2010.

The Ecoposto project reinforces the Company's interest in the constant search for more sustainable, innovative and efficient ways of using energy, which achieve the double goal of improving the economic and environmental performance.

### Energy efficiency for clients

### Energy audits to industrial clients of natural gas

In 2009, a wide set of services, among which energy audits consisting of the strict analysis to energy use in every equipment, activity and building of an industrial facility, was provided for the industrial segment of clients of natural gas.

An audit allows the client to know, in its facilities, the energy waste points, assess the efficiency of the equipments and obtain solutions

that optimise their energy consumption as well as decrease greenhouse gas emissions.

### Thematic actions in energy efficiency

Under this set of services of energy efficiency promotion, several thematic actions were performed to raise the clients' awareness to the need and benefits of the rational use of energy and natural resources.

These initiatives had special incidence in the following areas:

- · Water resources;
- · Compressed air;
- · Electrical power;
- · Thermal systems.

Using practical examples, the employees of Galp Energia's corporate clients were moved to the adoption of good energy practices in order to increase the efficiency and return of the Company.





### Se o destino é o mesmo, porque não irmos juntos?

Poupe dinheiro, poupe o seu carro e poupe o ambiente. Partilhe o carro com quem tem o mesmo destino. Vamos ser positivos acerca da energia.

Registe-se em www.energiapositiva.pt e adia ao Galpshare



Overall, 450 thousand vehicles enter Lisbon every day. From 1991 to 2001, the percentage of circulating cars with only one the driver on board increased 19 per cent. This trend generates increasing problems related to pollution, traffic and decrease in the quality of life within cities. These issues also exist in Porto, since close to 300 thousand vehicles enter in the city every day, 130 thousand of which enter in the rush hour, from 7:30 to 9:30.

The findings of several studies show that there are two million emply places in both cities every day, along with an occupation rate of cars close to 1.4 places/car. A study conducted by the Universidade Fernando Pessoa shows us that if we increase this average to two people per car we can reduce the emissions of CO<sub>2</sub> to the atmosphere in 25%.

### SUSTAINABLE MOBILITY

In early 2009, Galp Energia launched the Sustainable Mobility Programme, a long-term project that involved several innovative initiatives related to the promotion of energy efficiency in mobility.

The Sustainable Mobility Programme was launched in a context of growing economical difficulties and a higher awareness of environmental sustainability problems,

where a set of new problems arised. It was necessary and urgent to find new solutions and adopt new behaviours.

### Galpshare and the Empty Seats campaign

Based on studies that helped us to understand transport lifestyles, habits, attitudes and behaviour and, more generally, mobility, Galp Energia has launched a campaign entitled Empty Seats, which appeals to the spirit of citizenship to implement a new culture of own car use by citizens: car sharing with other users, who, on a daily basis or in specific situations, travel the same route.

This programme also covered several partnerships between Galp Energia, the Government, municipalities, companies and universities. The agreement signed with the Ministry of the Environment, in whi-

ch both parties agreed to support projects related to mobility, is one of those partnerships. Under this agreement, Galp Energia supported and assumed its participation in the European Mobility Week.

#### The energiapositiva.pt website

Galp Energia developed the energiapositiva.pt website, a 2.0 web community developed in open source, which can be accessed for free, in order to create a centre for sharing and researching content related to sustainable mobility and energy efficiency.

This platform provides several functionalities including Galpshare, which allows the creation of social networks for the sharing of transportation means (cars and other) by people whose route and schedule are similar

The initiative was aimed at consumers, citizens and public and private agents, whose change of attitute regarding the use of energy may lead

to benefits to the environment, the economy and the family budget.

Among the several initiatives, the Galpshare platform was the official mobility partner of summer festivals. Under the motto "If the destination is music, let's go together" several initiatives were developed to promote car sharing in trips to summer festivals with the offer of tickets.

Also under the motto "If the destiny is football we will go together", Galp Energia, as fan number 1 of Portugal's national fooball team, promoted the offer of access tickets to the games of the Portuguese squad by awarding the sustainable mobility behaviour of fans.





### The Galpshare campaign had top-of-mind recall close to 70%

Since it was introduced, the Galpshare campaign showed levels of visibility close to 70%, at the level of campaigns such as those of Euro 2004. These results were obtained through a recall study, in which 49% of respondents who saw the

advert stated a desire to share the car. Close to 80% respondents considered Galp Energia's campaign as very positive, highlighting its contribution to a better environment and greater savings of both energy and costs.

### Electric car

Galp Energia participated in the Electric Mobility Programme, which was promoted the Portuguese government, thereby fulfilling its role as energy operator especially focused on mobility.

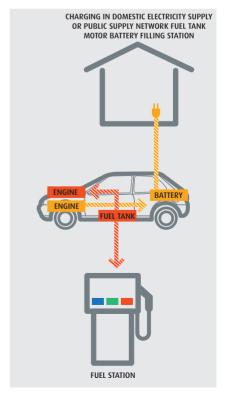
In order to extend its range of solutions for electric mobility, Galp Energia intends to become an infrastructure operator to recharge electric vehicles and plug-in hybrids in several contexts presenting a complementary offer of services.

### Ongoing development of the Rapid Charge Post

In this context, Galp Energia is developing in partnership with Efacec (a Portuguese company that operates in the electricity sector) a prototype of rapid charge, which whill

be installed in a service area during 2010 in a pilot phase.

Under the projects developed on the theme of sustainable mobili-



ty, particularly on mobility based on new electrical and PHV hybrid propulsion systems, Galp Energia is forging closer links with the automotive industry. The goal is to tailor the mobility solutions tailored by the Company to the technological trends of motor vehicles, thereby asserting Galp Energia as a true mobility operator.

#### Focus on the connection to the automotive industry

Following this strategic positioning, Galp Energia and Toyota Caetano Portugal (TCAP) signed a partnership agreement in December 2009 for the performance of a real test in Portuguese cities of five PHV hybrid cars during a period of three years, starting in June 2010. This project is part of the Toyota's European Programme of Road Test of Hybrid PHV, connected to the mains, which will include over 150 vehicles in Europe.

By participating in this programme of PHV use, Galp Energia plans to deepen its knowledge about trends of technological development in the automotive industry and increase the adaptation degree to the needs of consumers.

That road test will assess the performance of the vehicle in urban driving conditions, while it collects information on the experience of drivers and passengers.

### Greater Lisbon Area at the entrance to Lisbon



#### Profile of car users

In order to test the performance of the Toyota PHV vehicle, a method for drafting the profile of potential users of this car was followed. The method was based on the characterisation and analysis of commuting in the metropolitan area of Lisbon (MAL).

The segmentation of commuting of MAL was based on the proximity factor from the municipalities to Lisbon and on the main point of confluence of vehicles and passengers, considering an autonomy factor of the electric engine of the Toyota PHV 20 km.

Thus, we defined ranges that represent different types of user profile:

- Commuting to and from Lisbon;
- Commuting to Lisbon, less than or equal to 40km (round trip: 20km+20km);
- Commuting to Lisbon between 40km and 80km (round trip);
- Commuting to Lisbon, greater than or equal to 80 km (round trip).

### Supply of fuels with sulphur content of 10 ppm

In order to produce more environmentally sustainable fuels, its specifications have been updated, namely through the requirement for reduction of sulphur content.

In accordance to the regulation in force, namely Decree-Law No. 89/2008, of 30 May, Galp Energia started selling gasoline and diesel with a sulphur content of 10 ppm in the entire Portugueses territory, since 1 January 2009.

Galp Energia has ensured that throughout its entire logistics system the supply of fuel complies with the new specification.

### Agreement with the Instituto Superior Técnico in 2009

Galp Energia signed an agreement on sustainable mobility with the Institute of Mechanical Engineering (IDMEC) – Centre of the Instituto Superior Técnico.

Annually, a plan is drafted defining the studies and projects to be developed in the following subjects:

- Applied research in the energy and fuel sectors;
- Development of initiatives and innovation projects related to energy, mobility and transport fuels;
- Transfer of information on technology in the fields of energy, mobility and fuels.

In this context, a study on the analysis and development of scenarios about the evolution of the fleet and on their impacts on energy consumption was performed in 2009, allowing Galp Energia to set out medium-term strategies. This study also deepened the analysis of issues related to the lifecycle of fuels and car technologies, both in energy consumption and  $\mathrm{CO}_2$  emissions.



# Market research – energy efficiency and sustainable mobility

According to a study performed in two phases (January and December 2009) by the Marketing Research Institute, Galp Energia, which previously was not seen as an entity that should act in sustainable mobility, was seen as having an active role in this area.

In comparison with January, the main change identified in December was the definitive entry of sustainable mobility in the perception of the Portuguese gaining visibility thanks to the communication effort mainly developed by Galp Energia.

However, there is the lack of a significant change in behaviours or a committment to change future behaviour in the area of sustainable mobility. However, the first step to raise awareness and alert to the issue was clearly given by Galp Energia with Galpshare, an initiative that positively positioned the company in this context.

WHAT SPECIFIC INITIATIVES REGARDING SUSTAINABLE MOBILITY MADE BY GALP ENERGIA DO YOU REMEMBER?

	JAN 09	DEC 09
INVESTMENT IN LESS POLLUTING FUELS	15.7	37.7
AWARENESS CAMPAIGNS	3.8	28.2
• GALPSHARE	-	27.7
• EXCHANGE OF FAST POINTS FOR TRAIN TICKETS	-	25.9
• OTHERS	8.1	0.8
• DON'T KNOW	74.1	17.4
Source: Market Research Institute		

#### PERCEPTIONS AND EXPECTATIONS

	JAN 09	DEC 09
I am satisfied with the performance of the (Entity), in relation to Sustainable Mobility	2.43	3.77
I am Satisfied with the performance of the (Entity) in relation to <b>Energy Efficiency</b>	2.61	3.77
Source: Market Research Institute		

From the respondents' perspective, the focus on non-pollutant fuels emerges as a key initiative to be developed by Galp Energia.

Ltotally

Regarding capital expenditure and the strategy to face the challenges of sustainable mobility, the recognition obtained by Galp Energia's campaigns is positive.

WHAT MEASURES SHOULD BE CARRIED OUT BY GALP ENERGIA IN RELATION TO ENERGY EFFICIENCY? (%)

	JAN 09	DEC 09
INVEST IN THE DEVELOPMENT AND MARKETING OF FUELS	20.6	44.1
• AWARENESS CAMPAIGNS	11.2	13.1
• INCREASE SUPPLY AT FILLING STATIONS	3.4	1.8
SUPPORT FOR RESEARCH AND DEVELOPMENT IN THE AREA OF ENERGIES	5.5	1.0
• INCREASE IN THE PRICE OF FUELS	0.8	-
• OTHERS	23.9	2.8
• DON'T KNOW	38.7	38.5
Source: Market Research Institute		

### "Redeem your fast card points for train tickets" campaign

The "Redeem your fast card points for train tickets" sustainable mobility programme consisted of a partnership between Galp Energia and CP in order to help combat the nearly 2 million empty seats in cars entering Lisbon and Oporto every day.

The redemption of points was held at adherent filling stations, where the customer received a receipt that should be shown at a box office at CP, along with the cartãofast and the identification card, to lift the tickets.

### **Zero Carbon Promotion**

Galp Energia, in partnership the certification agency Carbono Zero, launched a campaign in the summer of 2009 aimed at raising customer awareness of the need to reduce their carbon footprint.



Awards were chosen to motivate the winning customers to practices for energy efficiency, under the slogan "You win and the planet wins". The prizes included a Chevrolet Captiva car on LPG Auto, an Efficient House kit comprising analysis and certification of energy efficiency, equipment and materials to increase energy efficiency and class A appliances, among others. These prizes were awarded by lottery to those who made purchases of Galp products and services, with price equal or higher than €30 at any adherent Galp filling station.

This promotional campaign also annulled its own impact on the environment by offsetting the carbon emissions related to the resources deployed during the campaign.

Thus, 130 tonnes of CO<sub>2</sub> were neutralised through the accumulation of carbon credits under the reforestation project of the Tapada de Mafra. Due to its biodiversity, this park plays an important role in conservation and has been developing environmental awareness activities with the civil society, namely promoting school trips and visits from associations and citizens



# Training in defensive and economic driving, in partnership with Carris, for Galp Energia's clients

Galp Energia, as an operator in the fuel market with clients operating in the transport market, recognises the importance that this sector has in terms of energy consumption and CO<sub>2</sub> emissions.

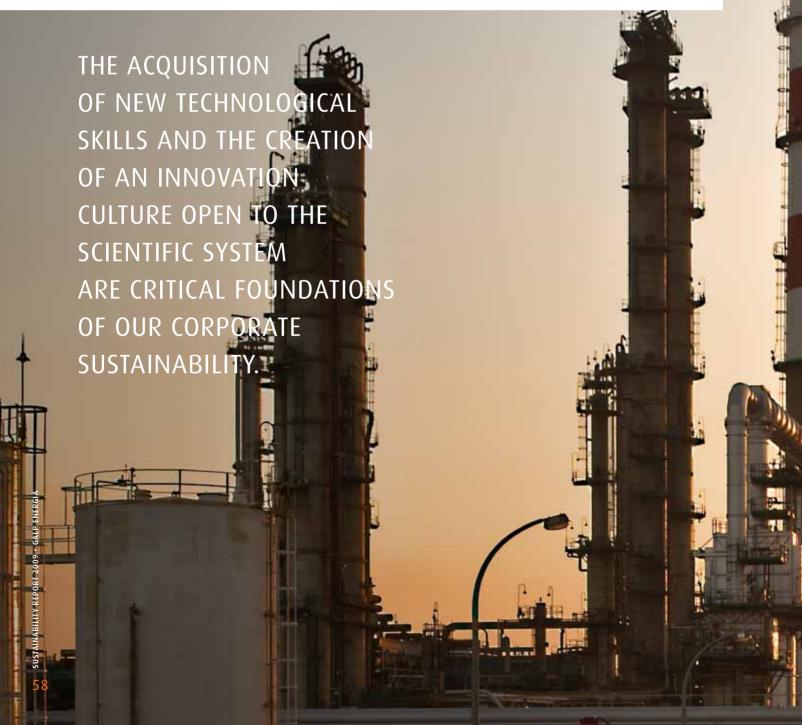
Thus, Galp Energia signed an agreement with CARRISTUR, an affiliate of CARRIS, in order to create and develop joint programmes for the promotion of sustainable mobility systems, thereby contributing to improve the efficiency of urban transport and the quality of the environment in city of Lisbon.

In this context, initiatives were developed in training in defensive and economic driving, which have potential for significant reduction in the mobility bill of Galp's clients and their employees.

During 2009, three pilot projects at the companies Resende, Transporte Sul do Tejo and Lusiaves were held. Subjects such as prevention and safety, cost control, quality of life, better use of resources and the protection of environmental conditions were focused.



# INNOVATION, TECHNOLOGY AND RELATIONSHIP WITH THE SCIENTIFIC COMMUNITY





### INNOVATING FOR SUSTAINABILITY

In 2009, Galp Energia continued developing and promoting a culture of innovation, not only through the acquisition of new competencies but also through the development of interfaces with the outside world in order to develop more open, more unique innovation and with greater potential for creating value. As a matter of fact, an open attitude to the outside world and change is essential for consolidating the Company's competitive position.

#### Interface network with the scientific system

ROI on innovation: increased customer satisfaction, launch of new products and services, increase in profitability

Web 2.0 digital innovation market, in which the scientific communities respond to the innovative challenges submitted by the business areas of Galo Energia.

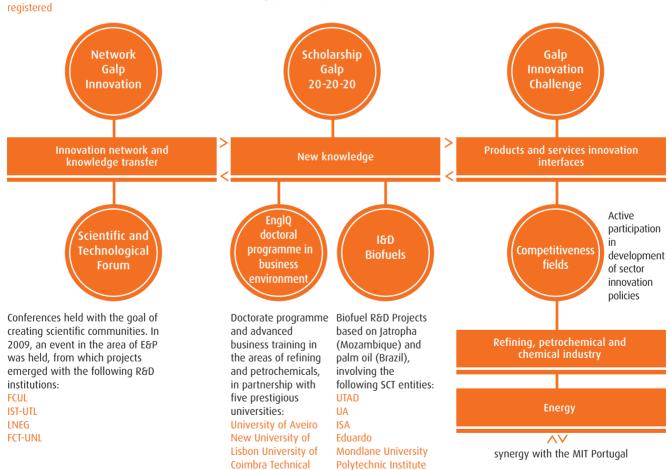
Eight innovation communities, more than 200 researchers and scientists registered

Programme of university cooperation with the Universidade de Aveiro and the Instituto Superior Técnico in which 20 scholarship students developed sustainable energy solutions for 20 customers. Case studies are available at http://galp.web.ua.pt

Innovation contest launched at the SCT for developing new products and services.

In the Hotspot Design contest, 20 Road shows were held at universities and around 120 entries were received.

**MIT** Portugal



of Portalegre

**EPAMIG** 

University of Lisbon

University of Oporto



The three main performance axes in 2009 were (I) the diversity of the markets where the Company's activity took place, through the offer of new services adapted to the clients' needs and expectations, (II) the promotion of closer ties with the National Scientific and Technological System as well as with clients and (III) the active participation in the deve-

lopment of sector policies that will be the base for the future development of the energy sector and the petrochemical and refining sector.

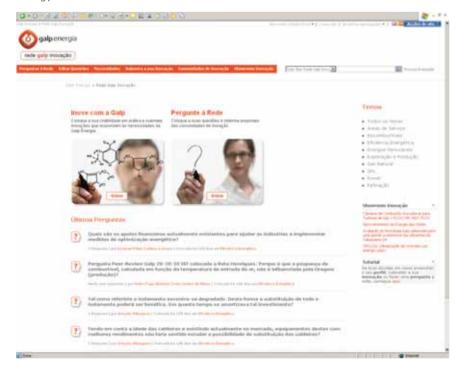
Some of the projects that were developed in the Company and in collaboration with several external partners throughout 2009 are an example of this performance.

### **Galp Network Innovation Portal**

The opening of the Galp Innovation Network to the «Universities and scientific and technological community» and the «Technology-based companies» communities will take place gradually, both nationally and internationally and by business segment. At the moment, close to 200 scientists and researchers in eight scientific communities are registered.

Thus was created the «Galp Innovation Network» website, designed according to the paradigms of «Open Innovation» and Web 2.0, to connect in a collaborative manner the company to the collective intelligence of «Universities and scientific and technological community» and «Technology-based companies» communities that operate in the energy area and in related sectors.

The main goal is to create a unique and original innovation space for the Portuguese system of science and technology to collect ideas for the creation of new processes, products and services that enhance the value creation for Galp Energia's customers in an innovative manner through the set-up of a true network.



PRESENTLY, NEARLY
200 SCIENTISTS AND
RESEARCHERS ARE
REGISTERED IN EIGHT
SCIENTIFIC COMMUNITIES.

#### How to collaborate with the Galp Innovation Network

- If you are a researcher, a scientist or an entrepreneur in the energy area and you want to innovate with Galp Energia, you may apply to be a member of the Galp Innovation Network send an email to redegalpinovacao@galpenergia.com with your curriculum vitae and the motives of your application. Within 3 days you will receive an answer. If you are accepted, you will be placed in one of the Scientific Communities and you may connect to Galp Energia's innovation networks.
- Being a member of the Galp Innovation Network, you may submit proposals for projects or innovative patents. For this purpose, just click on the 'Submit your innovation' button and fill out the application form. Within a week you will receive the first feedback.
- Did you develop an innovative technology and you would like to disclose it among the members of the Galp Innovation Network? Write the content on the «Innovation Showroom» section, receive comments and partnership proposals.
- Do you have a question about a new technology or about the way Galp Energia is positioned in one of its business areas? Use the «Ask Network» functionality and learn with the collective intelligence of the Galp Innovation Network.
- In the Web 2.0 platform you can find out the innovation needs of the several business areas by clicking on the «Needs» list. If you find a new ideia, you just have to submit your proposal.



FIVE PRESTIGIOUS
PORTUGUESE UNIVERSITIES
ARE INVOLVED
IN THE PROGRAMME:
THE TECHNICAL
UNIVERSITY OF LISBON,
THE UNIVERSITY OF PORTO,
THE NEW UNIVERSITY OF
LISBON, THE UNIVERSITY
OF AVEIRO AND THE
UNIVERSITY OF COIMBRA.

#### PhD students inside companies:

Ana Rute Ferreira Marta da Silva Sandra Lopes da Silva Tiago Lopes Ruth Morais da Costa Ana Bela Coelho

Galp's employees in advanced training:

Ana Rita Silva Marques Márcia Gonçalves Patrícia Alves Ana Cátia Lopes João Prelhaz Rita Pinto

# EnglQ – PhD Program in Business Environment and Advanced Training in Refining Engineering, Petrochemistry and Chemistry

The Business Environment Doctoral Programme in Refining Engineering, Petrochemistry and Chemistry is defined as a project of excellence at the 3<sup>rd</sup> Bologna Cycle, strongly oriented to research in the business environment, developed in close collaboration with Galp Energia and businesses integrating the Pole of Competitiveness of the Petrochemical, Chemical and Refining Industries (see text 'Competitiveness and Technology Poles'), and based on proven research and collaboration with the industry of teachers and researchers from several departments, associated laboratories and proponent research centres.

Five prestigious Portuguese universities are involved in the programme: the Technical University of Lisbon, the University of Porto, the New University of Lisbon, the University of Aveiro and the University of Coimbra.

This Doctoral Programme aims to train highly qualified professionals who can play an important role in research, technological development, endogenisation of technologies and the ability to undertake and lead in the Refining, Petrochemistry and Chemistry, with a direct impact on the companies where they work. In this sense, Galp Energia is not only home to six doctoral students in business environment but also put some employees to attend the advanced training programme.

In this initiative, the following R&D projects are being developed:

- Extraction of mercaptans by Ionic Liquids;
- · Streamlining of the Parex Unit;
- · Development of the Hydrodemetallization Catalyst;
- Oligomerization of Olefines C<sub>5</sub> C<sub>8</sub>;
- · Improvement of the Alquillation;
- NMR Technology to characterise crude oils and some processing currents.



## Hotspot Design innovation contest - Galp Innovation Challenge

The Galp Innovation Challenge consists of launching a challenge to the university community and to technology-based companies to propose technological solutions to issues that Galp Energia is confronted with by providing a prize and a proposal for collaboration in the subsequent development of the solution.

The Hotspot Design – Innovation Challenge by Galp Energia is the first innovation contest oriented to the university community and to technological startups in order to develop new products. The first edition of this contest started in the second half of 2009 and was focused on the develo-

pment of a new concept of an outdoor heater to integrate Galp Energia's Comfortable Terraces product range. A requirement for applying to the contest is a degree in Industrial Design and Engineering. For the first stage of the contest, there were over 370 applications.



### 0

INNOVATION WITH
THE SCIENTIFIC AND
TECHNOLOGICAL SYSTEM
CREATES VALUE
FOR A SUSTAINABLE
DIFFERENTIATION
OF THE BUSINESS.

### Galp Energia's Scientific and Technological Forum

The organisation of Scientific and Technological Forum, which is one of Galp Energia's goals for the business areas, aims at identifying and creating professional ties with the Portuguese scientific community in specialties that are of the interest of the business areas.

The first Scientific and Technological Forum took place in 2009 and its theme was "The Exploration and Production of Oil and Gas". Close to geoscientists participated in the event as well as representatives of Petrobras, one of Galp Energia's partners in the Brazilian offshore. Six innovation challenges were launched, which originated the following R&D projects that will start in 2010:

- 1. Modelling and characterisation of fractured reservoirs;
- 2. Seismic imaging in reservoirs bellow evaporite masses;
- 3. Integration of seismic with Soft Data in the Modelling and Characterisation of Reservoirs:

- Study of Depositional Environments and Diagenetic Processes in Carbonated Reservoirs;
- 5. Measures of the Thermal Conductivity and the Magnetic Susceptibility in Wells.

These projects, which will be explained further on in the report, will be developed in association with the following universities and R&D institutions:

- Faculty of Sciences of the University of Lisbon;
- · IST, Technical University of Lisbon;
- · LNEG;
- Faculty of Sciences and Technology of the Universidade Nova de Lisboa.

### Galp Energia's Scholarships Regulation

In 2009, Galp Energia obtained the certification awarded by the Portuguese Foundation for Science and Technology. The company saw the scientific level of its activity and its technicians being and has another

mechanism to create value in collaboration with the Scientific System, thereby generating new opportunities to capture talents and to make critical R&D competencies endogenous to the business.

### The R&D Coordination Board of Galp Energia

The R&D Coordination Board was created and started its activities in 2008. Its purpose is to contribute to the definition of Galp Energia's

Research & Development strategy and for a better organisation of the activities. Every business unit is part of the board.

### Galp 20-20-20 programme

The Galp 20-20-20 University Cooperation Programme was developed in 2009. The 3<sup>rd</sup> Edition was implemented at the University of Aveiro (UA) and the 1<sup>st</sup> Edition began at the Instituto Superior Técnico (IST).

The purpose of this initiative is to develop 20 studies and projects annualy aimed at identifying sustainable energy systems applicable in the industry and in the Portuguese buildings. The studies are generally based on the performance

of energetic audits, including the verification of the compliance with technical regulations of energy and safety of the networks and equipments to be performed in corporate clients after Galp Energia's indication.



The Galp 20-20-20 programme was started in the University of Aveiro in 2007 and was later opened in IST. Until now, close to 40 scholars were placed in 40 companies.

The companies where the initiative will take place are defined by Galp Energia in accordance with its business areas, such as Distribution Oil, Natural Gas and Galp Soluções de Energia. Every year Galp Energia chooses 20 corporate clients from several sectors, both industrial and services, where each scholar will draft a research project during a period of six months, after a selection process.

Each scholar is closely followed by three tutors: a tutor of the company, a tutor of Galp Energia, usually the account manager, and the tutor of the university.

After the period of six months and the end of the internships, the scholars draft a final report following a previously defined structure. This report is only considered after the acceptance of the three tutors. Afterwards, there is a final presentation session of the internship.

To complete the Galp 20-20-20 programme, the scholar may apply to a contest organised under the programme with prize money for the first three places in the podium, respectively €6,000, €3,000 and €1,000.

#### Galp 20-20-20 in the energetic and environmental optimisation of Transportes Sul do Tejo fleet

Under the 1st edition of Galp 20-20-20 IST, the energetic and environmental characterisation of the fleet of TST (section of Moita) was completed and measures for the energetic and environmental optimisation were proposed.

The TST's section of Moita was a high-profile challenge because it was developing a pilot project within its facilities since October 2007 (in partnership with Galp Energia). The main fuel was a mixture of diesel and biodiesel (B20).

This study focused on three main features:

- Characterisation of the fleet's energy consumption (in terms of the fuel consumption of the TST fleet);
- Inventory of the CO<sub>2</sub> emissions and other pollutants of TST's fleet;
- Determination of the reduction potential of fuel consumption and emissions of CO<sub>2</sub> and other pollutants through the recommendation of measures to reduce consumption and emissions (fleet renewal, consumption monitoring, promotion of eco-driving, optimisation of the distubance to the fleet in each course, among other measures).

#### The prizes for Aveiro

The winner of the 3rd edition of Galp 20-20-20 UA was scholar João Estima for his research project conducted at Cerâmica de Quintas. His project consisted in developing and creating a software tool named Integrated Simulator of Energy Management (SIGEN) providing several findings and recommendations in terms of energy consumption and improvement of energy efficiency.

The second prize went to Bruno Lamas for his work at Sorgal, S.A. The main goal of this study was energy audit of the company in both electrical and thermal power. The optimisation of the recycling of condensates and cooling water of cogeneration engines based on pinch analysis (a methodology that minimises energy consumption through chemical processes) was performed. Two optimisation solutions were obtained, which were evaluated through a energetic, economic and thermoeconomical analysis. A potential reduction of close to €97,000 a year was found, representing 28% of the energy cost of fuel oil in the year of reference.

Finally, the third prize went to the energetic diagnosis drafted by the scholar Paula Quinteiro for Faianças. The diagnosis fostered the creation of a set of measures for the rational use of energy including a pressure control system in intermittent furnaces; the installation of solar thermal collectors; the collection of natural light through the installation of solatube (a solution that captures natural light) and the installation of a electronic variator of electricity. Most measures required a small amount of investment and generated return in less than a year.

Corporate clients that participated in the Galp 20-20-20 programme:

- Sonae Indústria
- Grupo Amorim
- Bosch
- · CUF Adubos de Portugal
- Grupo RAR

# Launch of the *GALP 20-20-20* website on http://galp.web.ua.pt/

In order to share the knowledge accumulated in previous editions with the several participants of the GALP 20-20-20 programme, a website was created, http://galp.web.ua.pt/, where the experiences of the scholars are posted.

Until now, close to 40 research projects were created through this initiative, which recorded a high amount of energy efficiency projects in industrial clients of several sectors, from food, ceramics, wood, metal mechanics and electricity to metallurgy, paper, chemi-

cals and plastics, glass, and in several performance areas, such as buildings, electrical power, compressed air, car fleets, lighting, productive processes, production of heat and cold, isolating materials and the CO<sub>2</sub> footprint.



### HIGHLIGHTED R&D PROJECTS

### **COMET**

Galp Energia participates in seeking means of transporting and storing carbon captured in the major combustion facilities.

Galp Energia, along with 5 companies of the energy sector, 7 national and international research institutions and 4 universities, is working on a consortium project financed by FP7 and leaded by LNEG, under the CCS (Carbon dioxide Capture and Storage).

The project lasts three years and the goal is to identify a  $\mathrm{CO}_2$  transport and storing infrastructure covering the West Mediterranean, mainly the Iberian Peninsula and Morocco, with the identification of places and their capacity to store

CO<sub>2</sub> in geological formations.

The need to study the technical and economic viability of  $\mathrm{CO}_2$  transport and storing is a strategic issue in the medium and long term. Therefore, the possible development scenarios of the energy system are identified and studied considering the creation and implementation of new plants and new  $\mathrm{CO}_2$  emission sources. In addition, the potential storing locations in each country will be identified.

### EPREVE and the creation of the Prewind spinoff

The growing production of electrical power based on wind energy has created the need to manage in a scientific manner not only the national electricity network but also the wind farms. To this end, a safe and anticipated forecast of the electrical power produced in wind farms became essential.

With this goal, a group of seven promoting companies, among which Galp Energia, formed on 22 March 2006 the EPREVE consortium – Studies and Forecast of Wind Energy to guarantee the financing and management of the development and execution of a forecast model of electrical energy from wind energy as well as the set of computational applications related to the parks.

Afterwards, EPREVE signed an agreement with an university consortium composed of INESC Porto, INEGI – Instituto de Engenharia Mecânica e Gestão Industrial, the Engineering Faculty of the University of Porto and ICAT – Instituto de Ciência Aplicada e Tecnologia da Faculdade de Ciências of the University of Lisbon.

Completed during 2008, the model was tested and improved in 17 wind parks under operation, until October 2009, and in accordance with the second agreement, which was signed in the meanwhile.

The encouraging findings from the systematic comparison between the 72- hour forecasts based on the we-

### Participating research centres and universities

- LNEG
- · University of Évora
- · University of Utrecht
- · Instituto Geológico y Minero of España
- Bureau of Recherches Géologiques et Minières
- · Institut Scientifique of Rabat
- Office National des Hydrocarbures et des Mines
- · University Mohammed Premier
- Applied Systems Analyses, Technology and Research, Energy Models
- Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas
- Foundation of the Faculty of Sciences and Technology of the Universidade Nova de Lisboa
- · Forschungszentrum Juelich GmbH

#### **Companies**

- · Galp Energia
- EDP
- Endesa
- · Office National d'Electricité
- · Tejo Energia



IN 2009, GALP ENERGIA
RECEIVED CERTIFICATION
FROM THE SCIENTIFIC
ENTITY GRANTED BY
THE SCIENCE AND
TECHNOLOGY FOUNDATION,
A RECOGNITION OF THE
SCIENTIFIC LEVEL OF
ITS TECHNICIANS AND
OPERATIONS.

service for any pa motor, generating investment and padded information.

Testbed in Carris

The use of biofuel at the calculation of the calculati

ather data of the Portuguese Institute of Weather and Geophysics and the energy produced by the parks consorpened the possibility to explore, on a commercial basis, the forecast demic service for any park or wind promotor, generating return from the investment and providing valuean enadded information.

From here came the idea to create PREWIND, a spin off of the university consortium, which will include PhD graduates that completed their academic training during the project. The retribution to Galp Energia was the satisfaction for participating in an entrepreneurship initiative in the field of science.

### Testbed of R&D with biodiesel in Carris and Barraqueiro

The use of biofuel arises some issues, namely:

- Beneficial effects on the environment (in the plan of atmospheric emissions);
- · Secondary effects on vehicles;
- Periods for lubricant changes.

To respond to some of these issues, a partnership between Galp Energia, the Grupo Barraqueiro Transportes and Carris was created in order to make camp test during 13 months.

- In Barraqueiro, this camp test consisted of testing two types of biodiesel mixtures: B15 and B30, in 6 vehicles. In Carris, this test consisted of using two types of biodiesel mixtures, B15 and B30, in 6 vehicles of the company.
- The results demonstrate that the level of wear in the engine is similar to that of road diesel. In terms of consumption significant variations were not registered as compared with road diesel.

### Green additive

In the third quarter of 2009, an agreement between Galp Energia and the Engineering Faculty of the University of Porto was signed for the development of the production of the green additive for road diesel in the laboratory using the SMBR (Simulated Moving Bed Reactor) technology and renewable sources such as bioethanol, biobutanol and especially glycerine (by-product of the production of first generation biodiesel) in order to obtain higher efficiency and decrease energetic and operating costs.

In a subsequent phase, Galp Energia will evaluate its potential for a future pilot installation. This action is part of the R&D projects that Galp Energia has been developing in the production of second generation biofuel, actively

promoting scientific collaboration with the Portuguese research centres searching for future solutions with environmental impacts.

### R&D projects in Exploration & Production

After the innovation challenges launched under the E&P Scientific and Technological Forum and disclosed in the Galp Innovation network website, the following R&D projects will be developed:

#### Modelling and Characterisation of Fractured Reservoirs

Recent studies show that the association of fracture patterns identified through geomechanics and 3D DFN modelling (Discrete Fracture Network) improve the predictability of fracture patterns in the reservoir as well as its consistency with the area's geology.

In its E&P portfolio, Galp Energia has several assets whose production of hydrocarbons depends on the knowledge of fracture pattern that usually affect formations with low porosity and permeability (example: carbonates or foundation). In this project, the goal is to use patterns of faults and fractures currently identified in the seismic (interpreted at Galp Energia) and use geomechanical modelling (rheology of materials and application of regional and local pressure fields) to characterise them and improve their predictability.



THE GEOSCIENTIFIC
COMMUNITY IS CRITICAL
FOR GALP ENERGIA
TO OVERCOME THE
21<sup>ST</sup> CENTURY E&P
TECHNOLOGICAL
CHALLENGES.

### Seismic Imaging in Reservoirs Below Masses of Evaporites

Using data from wells in Galp Energia (VSP, Vertical Seismic Profiling) it is possible to apply seismic interferometry (IS) to improve seismic imaging below masses of evaporites and therefore obtain a better image of the zones where potential reservoirs are located without using additional data acquisitions. Recently, this methodology has been successfully applied in the prospection of hydrocarbon reservoirs. The seismic interferometry

is based on a virtual exchange between sources and receivers that originated the Vertical Seismic Profiling in the well, thus obtaining a record that does not depend on the bodies located above the reservoirs, in this case salt canopies. The second component of the project is aimed at transferring the Delft Technological University's know-how of seismic interferometry technology to Portuguese institutions, particularly Galp Energia.

### Integration of Seismic as Soft Data in the Reservoir Modelling and Characterisation

This project is aimed at developing and implementing a software prototype to derive information

from seismic amplitudes as raw material to be integrated in the characterisation model of reser-



IS PARTICIPATING
IN ONE OF THE
MOST CHALLENGING
EXPLORATORY PROJECTS
OF THE LAST 30 YEARS.
BESIDES OTHER
TECHNOLOGICAL
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A GREAT CHALLENGE
FOR GEOSCIENTISTS
FROM BOTH THE SCIENTIFIC
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IN THESE PROJECTS.

voirs. The result will be used as a conditioner to the geo-statistical population of the geocellular model in the areas without well control. Having a distribution of porosities at the reservoir level not only limited by the well data (precise but ponctual information in area – hard data) but also by the seismic data (information

inferred but covering the whole reservoir area – soft data), it will be possible to calculate internally the expectable volumes of hydrocarbon resources in the reservoir with a lower uncertainty than before. This is Galp Energia's final internal goal, for which the outcome of the project will contribute.

#### Study of Depositional Environments and Diagenetic Processes in Carbonated Reservoirs

Galp Energia is participating in one of the most challenging exploratory projects of the last 30 years. Besides other technological difficulties, there is a Great challenge for geoscientists from both the scientific community and the companies involved in these projects. The scarcity of geological information and the enormous dimension of the sedimentary basin where the recent discoveries of the Santos basin took place in the Brazilian deep water bring about interpretation and integration problems. The carbonated nature of the reservoirs increases

the difficulty degree of this type of problems. Therefore, it is necessary to develop geological models that frame the information that is being obtained and identify known or contemporary similar cases in order to solve the problems. In a subsequent phase, the goal is to draft distribution models of facies and diagenetic evolution patterns that allow the prevision of the special distribution of the areas with better reservoir characteristics, with a view to decrease the exploration risk and increase the return of the financial resources required by these operations.

#### Measures of the Thermal Conductivity and Magnetic Susceptibility in Wells

The purpose of the current project is to propose a new method based on thermal conductivity and the magnetic attributes of the rocks to distinguish formations inhered with oil from those inhered with water. Using this new method, it will be tried to solve the current problem with the interpretation of the conventional profiles made in the wells, where the resistivity amounts of water and oil are

very similar. Since it is a project with significant scientific and technological components, some of the outcomes may be subject to patent registration and publication in several scientific journals. This project focuses on a truly innovative concept. If it succeeds, it will help Galp Energia to achieve the goal of being an excellence centre in a new area of development technology.

### **R&D** projects in refining

#### **GINSENG**

The Ginseng project is amied at developing a network of wireless sensors (WSN) for monitoring and control in the industrial environment. During 2009, the fundamental knowledge that will be the basis of the future tests to be applied in the Sines refinery was pro-

duced. The purpose of this R&D activity was the definition of the tests to be applied in Sines refinery as well as the start of the software development to be used in wireless transmitters. The first prototype will be developed and tested during the first guarter of 2010.

#### **EnglQ**

Under the EnglQ Business Environment Doctoral Programme, the following

R&D projects are being developed:

#### Mercaptans Extraction by Ionic Liquids

The high residence times required to convert mercaptans with high molecular presence of disulfides, through a catalytic reaction with air in the Merox Units of oil (jet), causes capacity bottlenecks in the treatment row that makes the pro-

cessing of some crude strains with a good cost/quality relation impracticable. If the industrial feasibility of the extraction process by ionic liquids is proved, the forecast of margin increase is Usd 12 million/year.

#### • Streamlining of the Parex Unit

The Parex Unit used to separate the p-xylene contained in the flow of mixed xylene, by selective adsorption in molecular sieve, may be considered as the industrial application of the SMB technique with more impact on the refining industry. From the aromatic hydrocarbons used in

petrochemistry, the p-xylene is the most valued in the market. Admitting the viability of a production increase of p-xylene of 10% for the project capacity of the installation (450t/d), the expected gain of gross margin will be close to Usd 5 million/year.

#### Catalyst development of Hydrodemetallization

The return of refineries depends on the capacity and nature of the installed conversion units. In the semi-regenerative processes, one of the performance factors, with impact on the return of the installations, is the duration of the functioning cycle. This applies to the Hydrocracker unit, whose duration of the functioning cycle depends

on the contamination level of the feedstock (heavy diesel of Vacuum-VGO) by organo-metallic compounds and their retention capacity in the demetallization section of the cargo, composed of several specific catalyst beds for this type of service. If the service cycle is extended to a month, the increase in gross margin will be close to Usd 30 million/year.

USD 77
MILLIONS/YEAR

 First estimate of the possible gains in refining margin arising from R&D projects by EnglQ.



#### Oligomerization of Olefines C<sub>5</sub> – C<sub>8</sub>

One of the components of commercial gasolines with higher value added in production is cracking gasoline, whose lightest fraction has high amounts of amylenes, which are a good feedstock for processes of oligomerization of olefines C<sub>5</sub>-C<sub>8</sub>. This process may produce distillates with a number of carbons corresponding to oil and diesel, products with high market demand. If the assumption is confirmed, the production of cra-

cking gasoline would not be affected and the availability of diesel to the market would be reinforced allowing the maximisation of the gross margin.

The installation of an oligomerization unit with capacity to produce 280kt/year of oligomerized is expected to generate an increase in the gross margin of close to 30 million/year.

#### Improvement of alquilation

The process of butilene alquilation with isobutane produces a component of gasolines, known as alquilate, with excellent blending properties and therefore with significant value added.

However, the alquillation process uses acid (sulphur or hydrofluoric) as reaction catalysts, which cause delicate issues in terms of the environment and the safety of people and goods. The study to be developed will allow the deepening the mechanisms of reactions and will help understand some operational problems that have occurred, some of which caused unpredicted stops of the installation. The quantification of benefits is still premature, since data is still not available.

#### NMR Technology for characterisation of crude oil and some processing currents

Due to conditionings in crude supply and restraints in the management of the storage tanks, the processing periods of each crude mix do not exceed five days. Therefore, in the change period from one run to another, there is certain instability in the units, particularly in atmospheric distillatio, caused by differences of composition, yields, API, etc. This kind of instability, of variable duration, generates efficiency losses that negatively affect the margin. On the other hand, some of the main units already benefit from some advanced control applications,

whose effectiveness depend on the information produced by in-line analysers.

Given this framework, arose the interest in developing analysers based on the NMR technique capable of providing relevant information in continuum for a fast stabilising of the units and for feeding the AC applications. The minimisation of the instability periods and the increase in the effectiveness of the AC applications foster margin gains that may peak at several million dollars a year.

### **Process innovation**

#### Migrar Galp

The Migrar Galp project is aimed at changing the Via Verde concept, migrating from the dedicated post to another payment mode available in every station. The goal is to make the payment system similar to that of parking lots. With this process innovation and thanks to the introduction of the "button" solution, it will be possible to reduce installation and

maintenance costs and uniformise the procedure in the use of *Via Verde*.

The test made in the Service Area of Oeiras confirmed the attractiveness of the new solution. There was a 40% increase in refillings paid with *Via Verde* as well as a significant decrease in the number of failures

## Project Management System of Escapes of Filling Stations

Filling stations face a recurring problem: the escape of drivers who do not pay the fuel. The goal of this initiative is to develop a system to manage and control escapes, which automatically inhibites the refilling of an already signed car.

The newly developed system works as follows: after refilling the vehicle, the operation is validated and the registration of the registration number is deleted from the system. If the payment is not made, the registration number is maintained in the system and it is blocked, which means that the next time the vehicle enters any Galp Energia filling station the filling spot next to which the vehicle is stopped is automatically blocked as soon as its registration (front and rear) is read and recognised.

#### Tiger programme

The TIGER programme consists of restructuring the information systems that support the area of fuel marketing, integrating them with an internationally recognised management platform that is capable of responding to the needs of Galp Energia's customers.

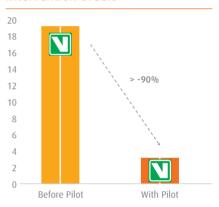
In 2009, the project has concluded the FEBO phase (Front End of Own Means Operations and Back Office Payment Modes), which integrated several operational and business management systems, thus enabling the streamlining of the current processes and the update of the decision support information. This new reality is supported by the WM-Card software package, an integrated management system of operations and own cards that can manage any payment mode, ensuring the centralisation of bank card operations.

This innovation will provide Galp Energia with the streamlining and automation of current processes, which are enabled thanks to the greater integration of the various systems of operational and business management and to the availability of more and better decision support information.

#### Number of refillings paid with Via Verde



#### **Intervention Orders**



- "Traffic Light" solution 2 Islands (4 Supply Fronts)
- "Button" solution
   10 Islands (20 Supply Fronts)



IN THE AREA OF MEANS OF PAYMENT, GALP ENERGIA HAS DEVELOPED TWO NEW CARDS BASED ON A MARKET SEGMENTATION STRATEGY, WHICH HAS ALLOWED IT TO RESPOND MORE EFFECTIVELY TO ITS CUSTOMERS' NEEDS.



## Innovation of Marketing, Product and Service

#### SOMA programme: Focus on cross-selling

With the aim of creating a single view of the customers of Galp Energia's several businesses - Galp Customer -, the main elements that support effective management of customer relationships in the various businesses were analysed, given the knowledge of and relationships with the customer, the offer of products and communication campaigns.

Galp Energia's goals with the Soma programme are the following:

 To adjust the product offer to customers' value potential;

- To achieve an integrated view of the customer segmented by value;
- To set out a unique customer care model covering every business unit, standardizing the relationship with customers in the several channels available;
- To consider the electrical business for the vision of the Galp customer;
- To integrate the several systems in order to obtain integrated information about the customer in any business.

## Fuel marketing and retail

#### A new offer for the payment modes

In 2009, Galp Energia developed in the area of payment methods two new cards based on a strategy of market segmentation, allowing a more effective response to customer needs.

Thus, the new Galp Frota card, for corporate fleet owners, and the Galp Frota Pro card targeted at transport companies of goods and passengers were developed.

The new Galp Frota cards provided even more benefits and special conditions in a network of 1,400 filling stations in Portugal and Spain and Portugal, of which the following stand out:

- For greater security in supplies, the PIN has become valid in every station in the Iberian Peninsula;
- Through partnerships with Via Verde in Portugal and the Via T in Spain, it became possible to pay tolls without stopping.

Designed for companies that manage and exploit car fleets, the Galp Frota card is a credit mode of payment in the consumption of fuels and Galp Energia products and services (including lubricants, gas, auto services, tolls and parking, among others).

As a complement, the Service of Customer Care is now available 24 hours a day.

#### **Electronic Invoicing to Corporate Clients**

After the launch of the Business to Business (B2B) website – GalpNet – with a sole access login to every product and service that Galp Energia provides to its corporate clients, a service whose goal is to improve communication with clients and ease the access to information was developed throughout 2009: the electronic invoicing system.

This system allows the sending and receiving invoices, with legal and tax acceptance, through an electronic format that does not require the sending of paper, thereby increasing security, speed and efficiency for both Galp Energia and the client.

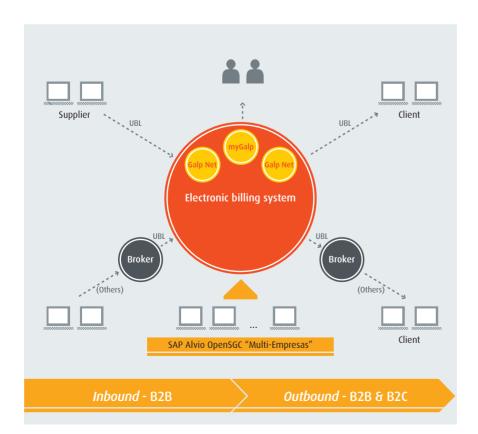
In addition to the direct integration of bills in the system that the electronic invoicing system enables, the B2B clients will also be able

to view and download data from invoices in PDF format, at the B2B website - GalpNet.

The electronic billing service has the following advantages:

- No errors in the integration/launch of invoices in the system;
- Greater reliability in the delivery of the invoice;
- · Less use of paper;
- Guaranteeing safety in the invoicing process (electronic signature);
- Reduced payment deadlines;
- · System working 24 hours a day;
- Availability of billing data in PDF format at the GalpNet website.





ANOTHER SERVICE WHOSE
GOAL IS TO IMPROVE
COMMUNICATION WITH
THE CUSTOMER AND
FACILITATE ACCESS TO
INFORMATION: THE
ELECTRONIC BILLING
SYSTEM.

## Natural gas



#### Natural Comfort services

Galp Energia launched in 2009 Natural Comfort, a range of exclusive services for residential customers of natural gas. The hiring of these services is aimed at guaranteeing to customers the safety of using gas and advising them about their routines, thereby promoting the rational use of energy.

These new services arise from the experience gained by Galp Energia in the area of natural gas and provide a seal of quality to offer in this segment. With them, Galp Energia intends to lead consumers to a new dimension of comfort, naturally positive.

In response to customer needs, were created unique solutions were created:

- Technical support Comfort Line;
- Maintenance of installations and equipments – Comfort Care;
- Sale of equipment that guarantees high standards of excellence and quality through a team of highly skilled people – Comfort Solutions.

The Natural Comfort team was carefully trained regarding technical skills, behaviour and safety and in November the training session was reinforced, where a balance of the first half of activity, the analysis of results and the identification of improvement opportunities took place.

#### Comfort Line

Technical support service available 24 hours a day, every day of the year. With the Comfort Line service, failures found are corrected in one single visit and the inspection and reopening of the gas occurs thanks to a team specialising in gas, in a maximum of six hours.

#### Comfort Care

Programmed annual maintenance service, which includes the manpower needed for the intervention. Regular maintenance of equipment contributes to the proper functioning, with higher levels of energy efficiency and savings in the bill of Natural Gas. Due to this service, the customer also receives an inspection certificate in the intervals required by law.

In the corporate segment, the hospitality channel (hotels, restaurants and cafes) represents a segment where the maintenance of networks and gas appliances is essential, mainly due to intensive use. Technical assistance and the maintenance of gas appliances (stoves, ovens, grills, water heaters, boilers, etc.) in the catering sector are critical to the success of these businesses, since they allow avoiding malfunctions or risk situations that jeopardise the supply of natural gas.

The *Comfort Care* service also comprises an offer for condominiums, named *Comfort Care* - Condominiums. Similarly, the service also aims to fill needs for maintenance and mandatory inspections that are necessary in the common areas of the buildings.

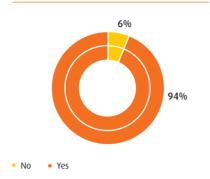


#### Comfort Solutions

Sales and installation of equipment that comprises three different areas: sale of natural gas household appliances, sale of carbon monoxide detectors and central heating systems.

The results obtained in 2009 in every *Natural Comfort* line has been very positive, both in the number of contracted services and customer satisfaction.

## Would you recommend the Comfort Service to a relative or friend?

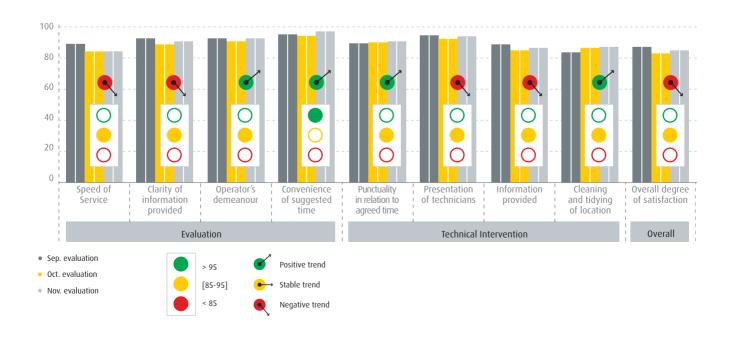




# Assessment of customer satisfaction

Excellence is our guideline and it is in this direction that we will continue training and encouraging those that work for the sucess of *Natural Comfort* services and contribute to the satisfaction of our customers.

For 2010 the focus will be on extending the range of services throughout the country and expanding the offer to other services that ensure safety and the rational use of energy, such as providing solar solutions.



## 4

GALP ENERGIA
IS THE FOUNDING
COMPANY OF THE
COMPETITIVENESS AND
TECHNOLOGY POLE
OF PETROCHEMICALS,
CHEMICALS AND REFINING,
WHICH WAS CREATED
UNDER THE COMPETE
PROGRAMME, OF QREN.

# Competitiveness and Technology Poles

Galp Energia is the founding company of the Competitiveness and Technology Pole of Petrochemicals, Chemicals and Refining, which was created under the Compete Programme, of QREN.

The Competitiveness and Technology Pole of Petrochemicals, Chemicals and Refining, which brings together companies, R&D centres and universities, is aimed at achieving critical economic know-how and the capacity to attract investment from high tech industries in the mentioned sectors. The first major action was the establishment of a in-company doctoral programme, the EnglQ, already mentioned.

The Competitiveness and Technology Pole of Energy will assign special importance to sustainable mobility, renewable energies and energy efficiency. The founders and facilitators were Galp Energia, EDP, Efacec and Martifer, with support from the MIT Portugal, but the cluster is open to new members.

Born of the desire to increase the average technological content of the Portuguese industry and with the resulting trade deficit, the Competitiveness and Technology Pole intends to address the weaknesses of national innovation processes, strongly focusing in areas such as energy efficiency and exploiting renewable energy sources with atractive prospects for growth in demand and where Portugal may have competitive advantages.

In its search for an identity of easy reference in the future, the pole has adopted the designation of ENER-GYIN, which currently is in the process of registration in the European Union.



#### The five lines of action of ENERGYIN

Acting as an observatory of the technologies in development and the qualification of human resources and seeking to streamline the several national and European networks, the ENERGYIN elected five lines of priority action:



- The offshore ocean energy (wind and waves at sea), taking advantage of the natural conditions of the Portuguese Atlantic coast and the undeveloped state of these technologies;
- Solar power for the production of heat and decentralised electricity in small scale or for producing solar thermal electricity on a larger scale, taking advantage of the excellent conditions of sunshine in Portugal;
- Energy efficiency in all sectors and systems using energy, thus promoting the development of services, management tools and equipment with potential for economic internalization;
- Advanced electrical networks as a way to ensure its sustainability given the focus on the decentralised production of electricity from renewable sources and their use to regulate their supply through storage;
- · Sustainable mobility.

To strengthen the link between companies and the Portuguese system of science and technology, the direction of ENERGYIN will be supported by a Scientific Council and an advisory board that bring together 22 representatives from laboratories, universities and business associations of the sector.

The first public presentation of ENERGYIN took place at the Portugal Technology show held at FIL in Lisbon from 7 to 10 October 2009. Several competitiveness poles and clusters created under the Compete Programme participated, promoting mutual understanding and interaction with other key R&D agents.

At the ENERGYIN stand, Galp Energia presented, raising great interest, its project for the production of Jatropha in Mozambique as raw material for the production of vegetable oil, possible base of second generation biodiesel, as mentioned in Chapter 5 of this report.



THE MANAGEMENT
OF ENERGYIN WILL
BE SUPPORTED BY A
SCIENTIFIC COUNCIL AND
A CONSULTATIVE COUNCIL
WHICH COMPRISES A TOTAL
OF 22 REPRESENTATIVES
OF LABORATORIES,
UNIVERSITIES AND
BUSINESS ASSOCIATIONS
IN THE SECTOR.

## THE ENVIRONMENT, QUALITY, **SAFETY AND SECURITY**

GALP ENERGIA' POLICIES FOR QUALITY SAFETY AND SECURITY, HEALTH AND THE ENVIRONMENT IS A CONTINUING CHALLENGE IN THE SEVERAL SINES REGULATED SUBJECTS IN BOTH PORTUGAL AND THE EUROPEAN UNION, WHICH PROMOTES THE **PROACTIVITY** AND INITIATIVE OF OUR ORGANISATION FOR FULL PARTICIPATION IN THESE PROCESSES.



GALP ENERGIA, **ACTING ON SEVERAL** FRONTS OF THE ENERGY BUSINESS. IS SUBJECT TO MANY CHALLENGES IN VARIOUS THEMES ON THE SSHE **LEGISLATION TO** COMMUNITY LEGISLATION, WHICH PROMOTES **PRO-ACTIVITY** AND THE INITIATIVE OF THE COMPANY FOR TECHNICAL **PARTICIPATION** IN THESE PROCESSES.

# SAFETY, SECURITY, HEALTH AND THE ENVIRONMENT

# Participation in law development processes

In 2009, Galp Energia continued monitoring law developments with impact on its business. The themes of the environment, safety and security have deserved special attention. In recent years, they have been important themes within the EU regarding production regulation.

The participation of Galp Energia in these multilateral processes, both through their own national executive bodies, executive or otherwise - DGEG, DGAE as through the associations in Portugal and Europe, representing the sector - the Portuguese Association of Oil Companies, the Concawe, Europia, provides the capitalization of Company's expertise and experience in many areas, contributing to the robustness, consistency, maturity and quality of some pieces of legislation for which Galp Energia, or the

associations that represent it, are consulted.

Galp Energia, acting on several fronts of the energy business, is subject to many challenges in various themes on the SSHE legislation to Community legislation, which promotes pro-activity and the initiative of the Company for technical participation in these processes.

Briefly, these are some of the activities developed in 2009:

#### The Climate and Energy Package and the Climate Change Policy

In March 2007 the European Council adopted the EU target of 30% reduction of GHG emissions by 2020 compared to 1990 emissions, provided other countries are committed to equivalent reductions. But with the recent failure of the 15<sup>th</sup> Conference of the Parties in Copenhagen, the EU's commitment is unilateral until the goal of reducing emissions by 20% by 2020,

possibly backing up to 30% if future agreements allow so. To meet the challenges it poses to itself and before the awareness of his leading role in combating climate change, the EU has produced regulations which impact on several sectors including the activities of refining and marketing oil products, on the one hand, and the production of electricity on the other.

The set of rules made in this area has been commonly referred to the Climate and Energy Package and is based on several pieces of legislation:

- · European Trade of Emission Licences;
- Effort-sharing Contribution of the State members sectors out of the trade regime;
- Carbon capture and storage;
- · CO, emissions from cars;
- Renewable energy sources, namely biofuels;
- Specifications for fuel.

The European Trade of Emission Licences remains a prime tool to reduce emissions in industrial sectors. For the period after 2012, the European trading scheme brings major challenges to the industry. Considering the reduction target, a specific limit value for emissions across the EU, measured a reduction target of 21% compared to verified emissions in 2005, ceasing gradually the emissions freely awarded and the award will start being held by auction. For the electricity sector the free allocation of licences will cease in 2013 since this sector reflects the costs of the carbon market and given the fact that competition does not suffer from significant extra-community competition.

This scheme comprises risks for the competitiveness of the European industry and risks of relocation of the industry to regions with no commitments to reduce GHG emissions – an effect commonly known as carbon

leakage. To address this risk, the EU plans to exclude the industries exposed to that risk to the conditions of allocation of allowances. For these sectors, there will be a part of freely awarded allowances based on the benchmarking defined by of 10% average of the more efficient facilities in each sector.

Aware of the challenges underlying the ETS scheme for the 2013-2020 period, Galp Energia has actively participated in all developments in this field, with particular emphasis on the work done within the group "Benchmarking CO<sub>2</sub>", coordinated by Concawe and the international consultant Solomon.

The main difficulties stem not only from the need of alignment with the benchmark but also from the access to different types of crude oil and the availability and quality of fuels, which interfere very significantly with the emissions of greenhouse gases.

#### Review of the Industrial Emissions Directive (The IPPC Directive and the Review of BREFs)

In 2009, the Directive for the Protection and Integrated Pollution Control (IPPC) was reviewed, which is currently more demanding and was renamed to the Industrial Emissions Directive (IED). They also reviewed the Reference



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GALP ENERGIA HAS
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THE SAFETY AREA
OF GALP ENERGIA'S
CORPORATE EQS
PREVENTIVELY
AND ACTIVELY MONITORS
LAW DEVELOPMENTS
IN SAFETY. IN 2009,
SPECIAL ATTENTION
WAS GIVEN TO THE
SEVESO DIRECTIVE.

Documents on the Best Available Techniques (BREF), particularly the reference document of the refining sector. Given the importance of the subject, Galp Energia took part in the discussion of these proposals in collaboration with European peer companies, again under the coordination of the European

associations representing the sector, such as the Concawe and the Europia. The Sines refinery also received the technical representative of the Joint Research Centre of the European Commission and responsible for coordinating the review of the refining BREF for a visit / technical meeting.

#### Soil Framework Directive

The protection of soils is a subject that has been under discussion in the EU for some years. The experience of Galp Energia, which owns and operates a wide variety of facilities of different types, sizes and degrees of risk, has been capitalized through the technical contributions made under the procedures of consultation with stakeholders, driven by the Directorate General for Energy and Geology.

#### Review of the Seveso Directive

The Safety Area of Galp Energia's Corporate EQS preventively and actively monitors law developments in safety. In 2009, special attention was given to the Seveso Directive, in two different but equally crucial features in the operation of the covered facilities:

## 1. Implications of the current version concerning the urban planning

Currently, the Directive (through Decree-Law No. 254/2007 of 12 July) provides for fixed distances between the appropriate safety facilities that are covered and vulnerable elements such as sensitive areas, residential areas, schools, hospitals, protected areas, etc.

These distances, set out by municipalities, must follow the criteria set by the APA and will shape the future licensing processes, the modification and expansion of facilities. Existing facilities, such as the Matosinhos refinery, if for some reason it is not possible to

protect those distances, operators must develop additional technical measures for mitigation.

Aware that this is a sensitive issue, whose solution is only possible thanks to the effort and the commitment of all stakeholders, Galp Energia has actively participated in the initiatives undertaken by the APA, the College of Environmental Engineering, the Society of Engineers and the ISO.

## 2. Preparation of the review of this Directive by CE

This review reveals itself of particular importance for the company because it will introduce a greater degree of demand at several establishments, so the anticipated knowledge of these new conditions allows its business units to have a faster adaptation and adjustment to the legislation to be published.

#### REACH regulation

On June 1 2007, the REACH - Regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals came into force (1907/2006).

Having been completed within the stipulated deadline the pre-register of the substances it manufactures and imports, Galp Energia increased in 2009 its internal activity in the various business areas to obtain the data required for storing, carrying out hearings to customers, internal awareness actions, the final list of substances to be registered and the preparation of Regulatory Guides (RG) for the several areas.

## Corporate guidelines

Galp Energia, through its own bodies, has been producing technical documents to regulate the procedures to be adopted in its business areas in different subjects.

## •

#### **Regulated substances**

In order to guarantee full compliance with current legislation and the consolidation of sustainable management practices of regulated substances, Galp Energia published in 2009 three GR subordinated to management in their life cycles, asbestos, of polychlorinated biphenyls (PCBs)

and substances that deplete the ozone layer. The motivation behind the publication of the GR was the dissemination of best management practices among Galp Energia's several business units and areas, thereby harmonising criteria for prevention, control and performance.

## Reporting and management of regulation information

The entry into force of the legal regime of RA (Decree-Law No. 147/2008 of July 29) reinforces the principles already established in Galp Energia, namely the principle of prevention of incidents (environmental, personal and material) and reducing their impact of the environment

Nonetheless, much work has been developed to improve and consolidate the methods of risk assessment of Galp Energia's facilities, the characterisation of the environment and its natural resources and the reporting and information management in light of the degree of AR, as well as the le-

gal status of Seveso (Decree-Law No. 254/2007 of 12 July).

Regarding risk assessment, technical guidelines on the application of different methods were developed to include in this assessment the environmental risks and the vulnerabilities related to the activity of a facility.

GALP ENERGIA
PUBLISHED IN 2009
THREE GR SUBORDINATED
TO MANAGEMENT IN THEIR
LIFE CYCLES, ASBESTOS,
OF POLYCHLORINATED
BIPHENYLS (PCBS)
AND SUBSTANCES
THAT DEPLETE
THE OZONE LAYER.



#### i Natural Resources

- Flora
- Fauna
- Structure of ecosystems
- Protected species and habitats

#### ii. Physical environment

- Bodies of surface water or groundwater
- Coastal zone Air quality

#### iii Human resources and social and economic resources

- Health and well-being
- Historical and cultural heritage
- Soil services and uses
- Economic activities in the Landscape area

- Resilience of the natural environment
- Environmental factors that serve as the vehicle transmitter or multiplier of a trigger event

During the work, there was need to integrate and align the requirements related to safety and the environment as well as to standardise criteria for reporting within the organisation. In this sense, the publication of a guide on the internal communication of external events under Seveso and / or RA implemented the integration of best practices for reporting and information management relating to incidents within the legal instruments mentioned above.

#### Galp Energia Procedure Standards

Once established the Galp Energia's Safety, Security, Health and the Environment (SSHE) Policy, the Safety Programme of Galp Energia (SPGE) has been fostering the development and implementation of standards of corporate procedures for SSA (Galp Energia's Procedure Standards) applicable throughout the organization, aimed at improving Galp Energia's SSHE management system, thus establishing detailed benchmarks for compliance.

The major initiatives made in 2009 were the following:

· Review of Galp Energia's Procedure Standards of Environment and Safety Preventive Observations (OPAS in Portuguese), considering the experience gained in its implementation and thus contributing to the continuous improvement of the system;

- · Approval of Galp Energia Procedure Standards for Emergency Response, which is aimed at ensuring that all units have a plan, training and preparedness for effective response to emergencies in order to minimise their potential impact on people, the environment, the premises and the community;
- · Stimulation of the creation of Corporate Excellence Groups in order to develop and implement the corporate procedure standards of SSE Management of Service Providers, Risk Analysis and Management of Modifications.

These activities have helped 2009 to be marked by a significant advance of the company's SSE culture.

THE GALP ENERGIA SAFETY PROGRAMME (PSGE) HAS BOOSTED THE DEVELOPMENT AND IMPLEMENTATION OF CORPORATE HSS **STANDARDS** AND PROCEDURES APPLICABLE THROUGHOUT THE ORGANISATION.

#### Process indicators

Triggered by the number and severity of recent incidents in process safety of the global energy sector, the Safety Management Group of Concawe, of which Galp Energia is a member through the Area of Corporate Safety, decided to address the issue of process safety firmly and in a more objective manner.

To this end, in 2009, it was decided to start collecting and processing the process safety information in a systematic manner, which will be reflected in indicators of regular publication, starting in 2010, identical to those defined by the American Petroleum Institute (API).

As a guideline for the UN / UG, the Corporate Safety prepared a Technical Note on Process Safety Indicators, which clarifies the criteria for inclusion in several levels and provides examples.

## Projects and investments in SSE

# Analysis of risk to human health and the environment of the quality of soil and groundwater

Given the legislative development and in the course of several years of experience in quality management of soils and groundwater, Galp Energia has identified the need for and interest in carrying out Quantitative Risk Analysis (QRA) for human health and the environment regarding the soil and groundwater of some facilities - refineries, storage parks and the Perafita Gas park.

The method used by QRA, at the service of an economic management of the risks of the activity, allows the evaluation of the risk to human health and the environment arising from the quality of soils and groundwater, identifying concentrations indicative of risk of several pollutants and for the various scenarios,

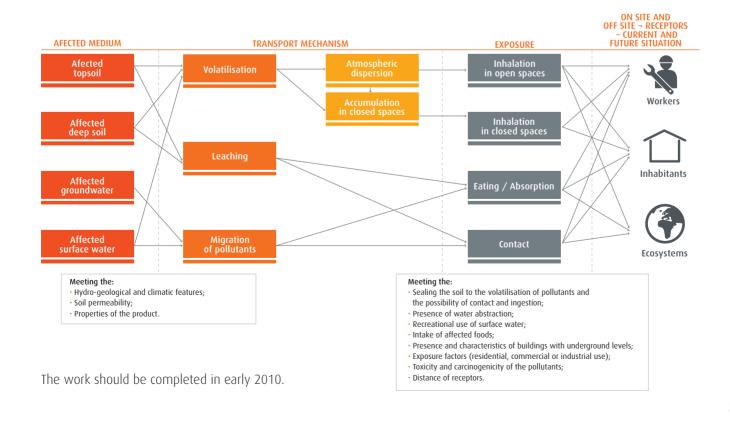
i.e. concentrations of pollutants that would justify an intervention and remediation of soil or groundwater.

The method used is recognised due to its merit, albeit very conservative, of meeting the specific characteristics of the medium, to the surrounding land uses, the mobility mechanisms of pollutants, and the types of exposure and toxicity of pollutants, ending the consideration of synergies between pollutants, their reactions in soil and stimulated effects.

The following illustrates the approach of the QRA and the elements considered in the evaluation and the chain of exposure of receptors to pollutants:



GALP ENERGIA
HAS IDENTIFIED THE NEED
FOR AND INTEREST
IN CARRYING OUT
QUANTITATIVE RISK
ANALYSIS (QRA)
FOR HUMAN HEALTH
AND THE ENVIRONMENT.



THE PROJECT AIMS
TO DEVELOP A TOOL
TO SUPPORT PRIORITIZATION
AND DECISION MAKING,
GIVEN THE ENVIRONMENTAL
RISK RELATED
TO EACH POSITION.

## Analysis of Environmental Risk in the Positions of Liquid Fuels

The area of fuel marketing began in December 2008 the project of the Environmental Risk Analysis of the Positions of Liquid Fuels, focusing on retail locations and Galpgeste, i.e. filling stations and service areas. The project aims to develop a tool to support prioritization and decision making, given the environmental risk related to each position.

This study starts with a field survey of environmental and technical parameters, followed by loading the database and developing action plans / recommendations to the scale of each individual supply in

order to reduce the level of risk. The survey of environmental parameters considers the sensitivity of the area, the vulnerability of surface water and groundwater, the groundwater level, the existence of water abstraction in the environment, biodiversity (flora and fauna of protected areas or high ecological value) and soil permeability.

The study is being completed for the Retail and will be followed up in 2010 with the inclusion in the analysis of other positions of liquid fuels of Oil Marketing - Companies, Contractors, Lubricants and Marine.

#### Data books of Safety, Security, Health and the Environment of the refineries

For the second year running, the refineries of Sines and Matosinhos published Data Books of the Environment and Safety, whose goal is to present in a factual and clear manner the environment and safety performance of the refineries.

These documents have a privileged graphic format, transmitting information and data on refineries and its performance since 2005 in several subjects and characteristic descriptors of the activity, the environment, health, safety and security.

Data Books are a source of reliable

information, reproducible and relevant, having been checked and assessed by an external entity, Deloitte & Associados.

The reports have included recommendations of the checker and suggestions from readers and already have some visibility, serving Galp Energia and the refineries in audits and actions of external and internal communications. There has been a concern to meet the interests of stakeholders, devoting several pages to items with specific topics changing from edition to edition, continuing its publication in 2010 and subsequent years.

#### CULTURA

- **E01** Management Committment
- E02 Policy of Safety, Security, Health and the Environment
- E03 Integrated Organisation
- E04 Responsibility of the Management Team and the Reporting Line
- E05 Goals, Objectives and Plans
- E06 Professionals of Safety, Security, Health and Environment E07 Procedures and Levels of Operational Performance
- E08 Training and Development
- E09 Communication
- E10 Motivation and Awareness
- E11 Audits and Observations
- E12 Investigation of Accidents

#### Assessment of the SSE culture

In late 2009, there was an internal evaluation to the SSHE Management System and an evolution of the SSHE culture was identified since the beginning of the project, which translates into the continuous improvement of the system.

This assessment has been performed by the

structured observation of the development and implementation of the requirements of the 22 elements of the internal reference attached to Galp Energia's SSHE policy, through which the company publicly assumes detailed commitments to safety, security, health and the environment.

In this evolutionary process the visible commitment of the management team and the reporting line to assume that the management of SSHE is a direct responsibility of the leaders stands out and risk prevention is a shared responsibility.

Note, first, the work that has been developed in the investigation of incidents, both in understanding the learning potential related to the correct identification of the root cause of an incident such as the implementation of

corrective actions and, secondly, a substantive change implemented at the beginning of this process with the creation of Committees of SSHE as specific management forums for discussing, decision making and monitoring of issues of SSHE led by Galp Energia's managers.

In this chapter, there are examples of practices and activities imposed on the premises and UN, which, in everyday life, from a technical and behavioural point of view, contribute to Galp Energia's performance in these subjects.

#### **OPERATIONAL**

#### Staff

- E13 Change of People
- E14 Service Providers

#### Facilitie

- E15 Planning and Control of the Life Cycle of Facilities and Equipments
- E16 Pre-launch Review
- E17 Mechanical Integrity
- E18 Change Management Facilities

#### Technolog

- E19 Information of Process Safety
- E20 Change Management Tecnology
- E21 Risk Analysis
- E22 Preparation and Emergency Response

#### Natural gas

In the day-to-day operation of the natural gas business unit, the concern about the efficient use of resources is reflected. For example, in Retail Sales, procedures for contact with the customer came to be made via the web as it leads to a significant reduction in paper consumption, increasing the effectiveness of the message to convey.

The development and provision of a manual on counter explosive industrial facilities, a publication involving customers in collecting information on the evaluation of explosion hazards also deserves to be highlighted. This initiative was followed by thematic actions to clarify customers in order to achieve effective performance in ensuring the operation of facilities, in safety procedures and in preventive and / or corrective maintenance actions.

On the other hand, Lisboagás implemented a monitoring program of environmental and safety performance of contractors in order to foster continuous improvement



of processes and reduction of the number of non-conformities.

In addition, knowing the recurrence of accidents caused by others in infrastructures for distribution of natural gas, a working group was created with the aim of developing successive measures to minimise the risks and harm on the network by third party action. This project led to the organisation of 7 awareness raising actions for relevant bodies such as the Civil Protection and companies that operate underground, also giving continuity to the work done last year with municipalities.

#### **Exploration & Production**

The SSHE management is also a constant concern in Exploration & Production.

Thus, seismic acquisition campaigns in prospecting for oil, it is ensured the presence in ships of marine mammal observers who monitor their activities. Therefore, operations are initiated only after 30 minutes of visual and acoustic observation of cetaceans and are aborted if there is a presence in a radius of 500 m from the airguns. During the night periods, passive acoustic monitoring systems (PAM) are used.

On the other hand, the time selec-

ted for these activities considers the weather along with the cycles of migration of whales in order to minimise impacts on marine life.

Also in exploration, there are also taken special care in terms of reconciling operations with fishing activities, of management and controlled occupancy of the maritime corridor, port activities, etc.

At production level, the main risks are related to the discharge of hydrocarbons or drilling fluids. These risks are fully considered and there are procedures and control mechanisms in order to minimise them.

#### Refineries

As important industrial units with environmental impact, refineries demonstrate many concerns in everyday life, with the multiple features that make up the environment in its broader concept.

Safeguarding the safety and minimising the impact on the environment is a priority, establishing in the day-to-day life of premises a variety of actions whose sole purpose is to ensure that priority. There are assigned teams, at all times, solely dedicated to these matters. Nevertheless, it is essential to instill good practices and procedures to the routine of employees and service providers, so the refineries are highly trained in SSHE as being of great importance for both human resources and service providers, ministering to them the areas of Environment and Safety and training on the reception, awareness and warning.

At Galp Energia's refineries there are dedicated teams to continuously safeguard the security and minimise the impact on the environment.

#### TRAINING RECEIVED BY GALP ENERGIA EMPLOYEES

	No. of hours of training in the Environment and Safety in 2009	No. of participants in training in the Environment and Safety in 2009	No. of training courses in the Environment and Safety in 2009
Sines Refinery	7,494.60	528	91
Matosinhos Refinery	6,348.50	467	68

#### TRAINING GIVEN BY GALP ENERGIA EMPLOYEES

	No. of hours of training given in courses in the Environment and Safety in 2009	No. of participants in the training courses in the Environment and Safety given in 2009	No. of training courses in the Environment and Safety given in 2009
Sines Refinery	121.00	6,346	411
Matosinhos Refinery	763.30	4,305	594

#### The Environment and Safety Preventive Observations

During 2009, Galp Energia's Safety Programme drew particular attention to the implementation of specific tools, namely the consolidation and improvement of a system of performance monitoring in SSHE, through proactive and reactive indicators.

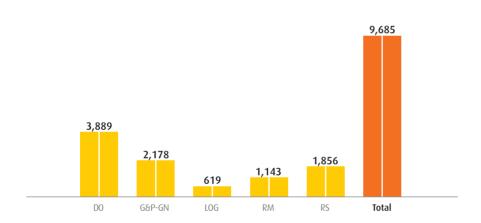
One of the main proactive tools consists of the Environment and Safety Preventive Observations (OPAS in Portuguese) as a method for observing the own employees or the employe-

es of third parties (service providers) in carrying out their activities. This is a positive approach technique, with the purpose of raising awareness and motivating for SSHE.

During 2009, there were close to 10,000 hours of Environment and Safety Preventive Observations made by accredited Galp Energia workers, trained in the tool and with monthly goals defined in accordance with the corresponding Galp Energia's procedure standard.

THE PREVENTIVE
OBSERVATIONS ON THE
ENVIRONMENT AND
SAFETY ARE A PROACTIVE
TOOL THAT AIMS TO
INCREASE AWARENESS
AND MOTIVATION
FOR THE SSA.

#### **Number of hours OPAS**



#### Training and coaching

Under Galp Energia Procedure Standards, there were a set of awareness sessions and techniques in the SSHE, which 620 Galp Energia employees received in order to be equipped with the knowledge and techniques necessary to implement the SSHE Management System, namely:

- Awareness and Management in SSHE; (ELW and Key Leaders);
- Analysis of the Safety of the Task (AST);
- Work Permits and Priority Procedures (Working at Height, Confined



IN 2009, SEVERAL
COACHING SESSIONS FOR
OPAS AND INVESTIGATIONS
INTO INCIDENTS WERE
CONDUCTED WITH AROUND
200 EMPLOYEES TRAINED
PREVIOUSLY.

Spaces, Excavations and Control of Hazardous Energy);

- Environment and Safety Preventive Observations (OPAS);
- Investigation and Analysis of Incidents and Non Conformities.

The training sessions on AST and Work Permits were performed in the Train the Trainer regime. The purpose and advantage of this method is that training skilled people in the areas fosters the transmition of the acquired knowledge, both

internally and in each business unit, thereby ensuring training to new employees and subsequent recycling sessions.

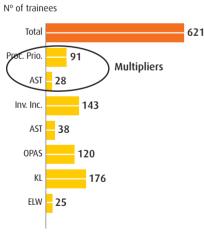
In addition to these training sessions, there were also carried out several coaching sessions on the Environment and Safety Preventive Observations and Investigation of Incidents with close to 200 employees previously trained in order to consolidate and standardize concepts that were learned, with special emphasis on the practical application of specific standards related to risk activities.

#### **SSHE** alerts

In 2009, 12 SSHE alerts were disseminated throughout the Group, by the Corporate EQS, concerning internal occurrences and three occurrences related to accidents outside

Galp Energia's universe but whose lessons and recommendations are important for the several areas in order to prevent similar occurrences.

#### **PSGE Training**



**Proc. Prio.** -Priority Procedures and work Permits:

**AST** - Analysis of Assignment Safety;

**Inv. Inc.** - Research and Analysis of incidents and non conformities;

**OPAS** - Environment and Safety Preventive Observations;

KL - Key Leaders;

**ELW** - Executive Leaders Workshop.

#### **Quick Wins**

During 2009, approximately 330 Quick Wins were reported by Galp Energia's areas contributing to improve the SSHE to easy-resolution situations.

#### Outcome of the SGSPAG Audits (Seveso)

As provided for in Decree-Law No. 254/2007 on the prevention of major accidents involving dangerous substances, audits to each one of the 13 sites covered by the top level of dangerousness of the Seveso Directive were performed in 2009. In these audits only one major non-conformity was identified, which was immediately corrected without jeopardising the

declaration of conformity issued by the verifier. The 51 minor nonconformities that were accepted triggered corrective actions that are part of a plan that is currently running.

Four of these audits were followed in situ by the APA, which was thus able to observe the performance of the facilities.

## **Environmental performance**

#### Operating data

The following table shows the main material environmental indicadors for Galp Energia.

	CORE ENVIRONMENTAL INDICATORS	2008	2009	VARIATION (%)
	TREATED CARGO (kt)	14,068	12,173	-13.47%
	ENERGY CONSUMPTION:			
	CONSUMPTION OF FUEL GAS (kt)	332	306	-7.83%
	CONSUMPTION OF NATURAL GAS (t)	25	171	584.00%
	CONSUMPTION OF FUEL PROCESSING RESIDUE (kt)	470	319	-32.13%
	CONSUMPTION OF ELECTRICAL POWER (GWh)	583	536	-8.06%
REFINERIES	ELECTRICAL PRODUCTION (GWh)	519	685	31.98%
(INCLUDING	CONSUMPTION OF WATER (10 <sup>3</sup> m <sup>3</sup> )	7,918	7,464	-5.73%
THE LUBRICANTS	VOLUME OF REUSED WATER (103 m³)	757	830	9.64%
PLANT AND THE	VOLUME OF EFFLUENTS (103 m3)	4,200	4,778	13.76%
AROMATICS PLANT)	CO <sub>2</sub> EMISSIONS (INCLUDES THE AROMATICS PLANT) (t)	2,949,947	2,616,075	-11.32%
	NOx EMISSIONS (t)	5,948	4,404	-25.96%
	TOTAL EMISSIONS OF NOX PER PROCESSED CARGO (%)(7)	0.4228	0.3618	-14.43%
	SO, EMISSIONS (t)	14,038	9,384	-33.15%
	TOTAL EMISSIONS OF SO, PER PROCESSED CARGO (%)	0.998	0.771	-22.76%
	PARTICLE EMISSIONS (t)	1,073	657	-38.77%
	TOTAL PARTICLE EMISSIONS PER PROCESSED CARGO (%)	0.0763	0.0540	-29.26%
	TOTAL MOVEMENT IN LPG GAS PARKS (kt)	459	417	-9.15%
	TOTAL MOVEMENT IN LOGISTICS PARKS (kt)	6,882	7,250	5.35%
	CONSUMPTION OF DIESEL IN LOGISTICS PARKS (t)	1,038	414	-60.09%
	CONSUMPTION OF ELECTRICAL POWER IN LPG GAS PARKS (MWh)	2,484	2,208	-11.11%
LOGISTICS	CONSUMPTION OF ELECTRICAL POWER IN LOGISTICS PARKS (MWh)	3,220	2,404	-25.34%
	CONSUMPTION OF WATER IN LPG GAS PARKS (10 <sup>3</sup> m <sup>3</sup> )	7.9	6.9	-12.66%
	CONSUMPTION OF WATER IN LOGISTICS PARKS (10 <sup>3</sup> m <sup>3</sup> )	20.8	18.3	-12.02%
	KM FOR THE TRANSPORT OF PRODUCTS (km)	36,350,263	32,311,431	-11.11%
	EFFLUENTS - REJECTED VOLUME (m³)	85,508	70,631	-17.40%
EXPLORATION (2)	BURNING GAS (MMSCF) (1)	296	722	143.97%
SIGÁS	CONSUMPTION OF ELECTRICAL POWER (MWh)		1,735	
NATURAL GAS DISTRIBUTION COMPANIES (3)	CONSUMPTION OF ELECTRICAL POWER DISTRIBUTION COMPANY BUILDINGS (MWh)	946	1,129	19.34%
	CONSUMPTION OF WATER IN DISTRIBUTION COMPANY BUILDINGS (103 m <sup>3</sup> ) (1)		8	
	PRODUCTION OF STEAM (GWh)	386	377	-2.33%
	PRODUCTION OF ELECTRICAL POWER OF CARRIÇO COGERAÇÃO AND POWERCER (GWh)	244	255	4.51%
COGENERATIONS(4)	CONSUMPTION OF ELECTRICAL POWER (MWh)		528	
	CONSUMPTION OF NATURAL GAS (M m³)	71.8	73	1.67%
	CO <sub>2</sub> EMISSIONS (t)	152,440	156,087	2.39%
SERVICE AREAS SPAIN	CONSUMPTION OF ELECTRICAL POWER (MWh) (1)	13,804	15,482	12.16%
	CONSUMPTION OF WATER (m³)(1)	245,891	232,339	-5.51%
SERVICE AREAS PORTUGAL	CONSUMPTION OF ELECTRICAL POWER (MWh)(5)	25,589	31,830	24.39%
	CONSUMPTION OF WATER (m³) (1)	1,036,150	1,041,900	0.55%
	PRODUCTION OF ELECTRICAL POWER (kWh)		62,473	
	CONSUMPTION OF ELECTRICAL POWER (MWh)	4,693	4,112	-12.38%
BUILDINGS (TOWERS OF LISBON	CONSUMPTION OF GAS (m³)	33,883	26,281	-22.44%
AND R.ALECRIM)	CONSUMPTION OF WATER (m³)	16,354	17,390	6.34%
	CONSUMPTION OF ELECTRICAL POWER (MWh)	977	1,420	45.34%
AVIATION <sup>(6)</sup>	CONSUMPTION OF WATER (m³)	1,852	4,042	118.25%
REFINERIES, LUBRIFICANTS AND AROMATICS PLANTS, LOGISTICS AND LPG PARKS, AVIATION	NON-HAZARDOUS INDUSTRIAL RESIDUE (t)	4,277	2,546	-40.48%
	HAZARDOUS INDUSTRIAL RESDIUE (t)	15,875	17,768	11.93%
GALP ENERGIA FLEET	CO <sub>2</sub> EMISSIONS (t)	14,106	14,625	3.68%
EXPLORATION	CO, FROM AIRCRAFT FLIGHTS (t)	1,012	1,728	70,73%

<sup>(1)</sup> Indicators not verified.

<sup>(2)</sup> in 2009, the TL-CPT entered production and an annual average figure was used. No injection of gas occurred in Kuito due to a technical problem detected in the (2) In 2009, the 15-CFT effected production and an annual average figure was used. No injection of gas occurred injection riser.
(3) In 2009, Setgás and Tagusgás were included in the scope of verification.
(4) Data includes the Carriço and Powercer cogenerators.
(5) In 2009, 7 more Service Areas were added.
(6) The total amount does not cover the Faro, Porto Santo, Funchal, Horta, Ponta Delgada and Santa Maria Pool.
(7) The amounts relating to 2008 have been corrected.

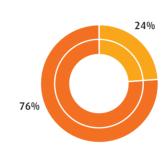
#### Resource consumption

One of the concerns of the refineries in recent years has been to maximise the reuse of water. For example, the Matosinhos refinery developed a project in 2009 to build a tank to store water from

the wastewater treatment plant to supply the Fire Service Network.

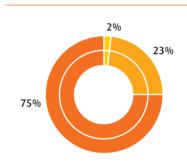
The several facilities consume water from boreholes, wells, or from municipality services:

#### **Sines**



Wells • Santo André waters

#### Matosinhos



Public net
 Ave River
 Cávado River

#### Sinecogeração:

Water from the utilities of the Sines refinerys.

Groundwater abstraction and/or supply from Municipal Services.

#### Carriço Cogeração:

Groundwater abstraction for industrial and residential use, washing and irrigation, included in a REN area.

#### Powercer Cogeração:

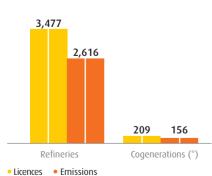
Service Areas:

Consumption of water from Central de Cervejas.

#### Fuel parks:

Groundwater abstraction and/or supply through Municipal Services.

#### CO<sub>2</sub> emissions in 2009 (kton)



(\*) Cogeneration – solely includes Powercer and Carrico.

#### **Atmospheric emissions**

In terms of air emissions, refineries are Galp Energia's premises with greater relevance. Indeed, the intensive consumption of energy - fuel consumption - fuel processing residue, fuel gas and natural gas is underlying the refining activity. The refineries have been prioritizing the consumption of cleaner fuels, which has led to a clear reduction in emissions by the

level of activity, as can be seen in the table in Operating Data.

The chart on the left shows, in a sectoral approach, the CO<sub>2</sub> emissions from Galp Energia's installations that are covered by the ETS, evidencing the remaining emissions in comparison to the allocated emission licences.

#### Production of residues

The production of residues is inherent in the activity; it depends on the contracting cycles and the operations of stop and cleaning. Nevertheless, Galp Energia has made efforts to maximise the separation of residues in order to enhance its recovery and rehabilitation.

As it is known and in order to manage the packaging related to the life cycle of the products put in the market, Galp Energia has joined the Integrated Green Dot as a Packer/Importer, thereby transferring to the Sociedade Ponto Verde (SPV) the responsibilities that Galp Energia is committed to under the law in force in this matter.



#### **Biodiversity**

Galp Energia's activity is performed in several contexts, spaces and realities. Due to the impact of different activities or the environmental sensitivity of the sites where it operates, Galp Energia recognises some businesses and facilities as a priority. This recognition, in order to be full and informed, follows naturally from the consciousness of the need for assessment of the activities and the environmental contexts in which they operate.

It was also aiming to improve the knowledge of the impacts of the activity on biodiversity that began in 2009 the performance of risk assessments for human health and the environment arising from the quality of soils and groundwater

in the fuel parks and refineries. In this context, the previously mentioned study on risk analysis of the filling stations, which allowed the composition of the inventory and the environmental characterisation of the surrounding positions, should be highlighted.

Surrounding the Sines refinery, there are some classified sites, which are marked by the presence of endemic species of flora and fauna, namely migratory birds as well as the presence of natural habitats, protected semi-natural habits and dune systems. The Matosinhos refinery is located quite far from classified sites. Therefore, its activities do not interfere with the spaces.

GALP ENERGIA BEGAN
ANALYSING RISKS TO
HUMAN HEALTH AND THE
ENVIRONMENT ARISING
FROM THE QUALITY OF
SOILS AND UNDERGROUND
WATERS IN THE FUEL
YARDS AND REFINERIES.





### **Accidents**

Galp Energia, as an organisation that aims at acting in the market in a responsible manner and effectively contribute to sustainable development, sees Safety, Security, Health and the Environment (SSHE) as core values to promote and preserve in the company's strategy and activity, making them the commitment of all employees and service providers.

In its path to excellence, Galp Energia has been continuously monitoring its performance. The goal is to achieve zero accidents, whether personal, material, environmental, operational or road accidents, either in employe-

In 2009, continuing the alignment effort with the best international practices in communicating performance indicators, the frequency indices (number of accidents per million working hours) of personal accidents with sick leave for employees were disclosed, excluding in itinere accidents, employees of service providers' frequency index of accidents with sick leave and the Global Frequency Index. This last index is the company's frequency index role model and translates the accident rates of Galp Energia's employees and service providers.

Comparing the 2.1 result of the Galp Energia Group with the the European sector – Concawe, whose frequency index<sup>(1)</sup> (2008) was 1.7 (employees and service providers,

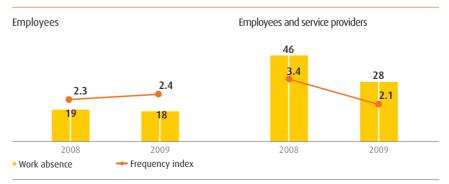


GALP ENERGIA

SEES SAFETY, SECURITY,
HEALTH AND THE
ENVIRONMENT (SSHE)
AS CORE VALUES
TO PROMOTE
AND PRESERVE IN THE
COMPANY'S STRATEGY
AND ACTIVITY,
MAKING THEM
THE COMMITMENT
OF ALL EMPLOYEES
AND SERVICE PROVIDERS.

#### **Accidents at Galp Energia**

es or service providers.



IF - number of accidents per one million worked hours

<sup>&</sup>lt;sup>(1)</sup> – European downstream oil industry safety performance - Statistical summary of reported incidents – 2008; Prepared for the Concawe Safety Management Group by: A. Burton and K.H. den Haan.

marketing and refining), there was an improvement, due to the awareness raising and training work developed this year with greater intensity among service providers.

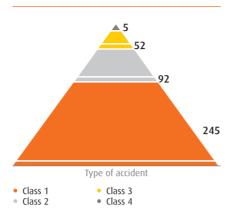
On the other hand, Galp Energia's standard procedure related to the communication and Incident Investigation establishes criteria for the classification, research, analysis, documentation and dissemination of accidents, illnesses, quasi-accidents and critical SSHE non-conformities that are critical or systematic and monitors the actions to minimise risks and prevent their recurrence, occurrence of the same or similar nature, in order to control or eliminate the causes identified.

Since its adoption in 2007 and during all the work since then, Galp Energia has contributed to the continuous improvement of the system, resulting in increased quality of the entire process.

In 2009, the reported accidents are included in the figure below. It is noteworthy that it includes accidents involving customers and service providers that resulted in property damage or have involved Galp Energia, even if they did not occur in the regular development of the company's activities.

The significant improvement in the reporting of incidents (accidents and quasi-accidents) originated in 2009 the increase in the total number of recorded incidents, particularly in the less serious classes, reflecting a greater sensitivity to the importance of reporting all occurrences, which also arises from

#### Total accidents



the sedimentation of Galp Energia's safety culture.

However, there were three major accidents with personal damage involving third parties, of which two were fatal accidents and one had multiple injured people, including a fatality with carbon monoxide. All these accidents were properly investigated and occurred under conditions not controllable by Galp Energia.

In 2009, there was still a material accident with loss of product, with significant costs. This accident was internally investigated having been reported and followed by the authorities. The causes that were found led to recommendations and to a plan that the company promptly implemented in order to prevent its recurrence.

Finally, there was an accident at Sines refinery following a fire which occurred with significant material damage in the utilities plant. This accident did not cause personal or environmental damage, but forced the emergency shutdown of the facility, and some plants restarted working after about three months, with consequent economic losses for the Company.



THE SIGNIFICANT
IMPROVEMENT IN THE
REPORTING OF INCIDENTS
(ACCIDENTS AND
QUASI-ACCIDENTS)
ORIGINATED IN 2009
THE INCREASE IN THE TOTAL
NUMBER OF RECORDED
INCIDENTS,
PARTICULARLY IN THE LESS
SFRIOUS CLASSES.

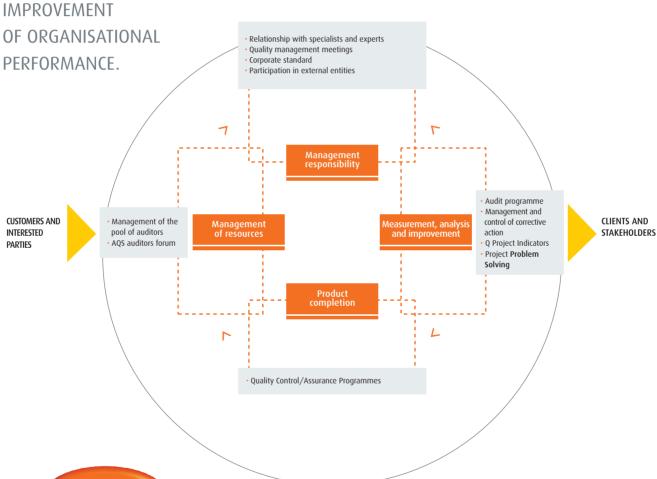
GALP ENERGIA BELIEVES
THAT THE INVOLVEMENT OF
PEOPLE AND TEAMWORK
ARE A FOUNDATION
FOR SUSTAINABLE
DEVELOPMENT, TAKING
AS KEY VALUES CUSTOMER
FOCUS AND THE
CONTINUOUS
IMPROVEMENT

## Quality

#### Responsibility of management

Galp Energia believes that the involvement of people and teamwork are a foundation for sustainable development, taking as key values customer focus and the continuous improvement of organisational performance.

Thus, Galp Energia developed in 2009 an approach to the management of Quality Systems focusing on the efficient use of resources and consistent satisfaction of the expectations of every stakeholder in order to ensure flexibility and responsiveness to the market.





QUALIDADE **POSITIVA** 

In 2009, Galp Energia promoted the strengthening of inter-functional communication involving the quality managers of the several organisational units and representatives from other areas in regular forums of monitoring and discussion of topics related to quality management as a way to consolidate a culture of positive and proactive quality.

In addition to analysing and monitoring indicators related to quality control processes, audit management and corrective actions, the forums addressed issues such as streamlining complaint management, RDI in Galp Energia, evaluation of suppliers and Six Sigma.

#### **Portuguese Quality System**

Galp Energia is committed to sustainable development of the country by supporting institutions that have contributed most to the development of quality in Portugal.

For this reason, the Company actively participates in the Portuguese Quality System, particularly in the aspect of standardisation, and matching the IPQ in the highest category. As such, Galp Energia is recognised by the IPQ "supporter of the System" company, a status held in 2009.

Galp Energia believes that quality also implies absolute confidence in the laboratory results and, as such, supports the activity of RELACRE - Association of Accredited Laboratories of Portugal since its establishment in 9 May 1991. Petrogal is a founding partner.

This association is a private, independent, not-for-profit, resulting from the need felt by the Portuguese accredited laboratories of having greater opportunities to access scientific and technical information by acting together to defend their interests in accreditation.

In 2009, Galp Energia supported the 34<sup>th</sup> Quality Colloquium, which was held under the motto "SUCESS - In every crisis there is an opportunity" and was organised by the APQ. This year, Galp Energia has joined the governing bodies of the APQ through the participation in the general meeting committee for the next triennium.



GALP ENERGIA

CONSOLIDATED ITS

STRATEGY IN THE REALM

OF ENVIRONMENTAL

MANAGEMENT, QUALITY

AND SAFETY, GIVING

CUSTOMERS CONFIDENCE

IN THE USE OF ITS

PRODUCTS AND SERVICES.

 The mission of the APQ is to add value to the members and contribute to the sustainable development of the Portuguese society by creating and disseminating knowledge and promoting innovative practices in the areas of Quality and Excellence.

#### **Certifications**

In terms of management systems of the environment, quality, safety and security, the Group's strategy in this area has been continued and consolidated in 2009 in order to provide confidence to customers using its products and services. The existing qualifications were maintained and five new certifications were achieved: the Environment, Safety and Security for the Sines refinery and the Environment, Quality, Safety and Security for Retail Sale of Last Resort (Natural Gas).

NP EN ISO 9001	NP EN ISO 9001 E OHSAS 18001/NP 4397	NP EN ISO 9001/ OHSAS 18001/ NP 4397 NP EN ISO 14001	OHSAS 18001/NP 4397 NP EN ISO 14001
Lubricants business, Aviation fuels, Base oils, Galp Químicos, Galp Gás, Inspecção da Sines refinery, Bitumen business, Probigalp, Galpgeste	SAAGA	Setgás, CLC, Beiragás, Lisboagás, Lusitâniagás, Parks of Aveiro and Porto Brandão, Retail Sale of Last Resort (Natural Gas)	Sines refinery

TO COMPLY WITH
LEGISLATION, GALP ENERGIA
HAS SPECIFIED STRICT
INTERNAL SPECIFICATIONS,
AROUND THIRTY OF WHICH
WERE REVISED IN 2009,
FOR A WIDE RANGE OF
PRODUCTS.

#### **Evolution of the specifications**

The year 2009 was marked by the publication on 23 April 2009 of the Directive 2009/30/CE of the EP and the EC (the Fuel Quality Directive), which amended Directive 98/70/EC regarding the specifications for gasoline and road and non-road diesel and the introduction of a mechanism to monitor and reduce emissions of greenhouse gases.

With this legislation, the EU's main goal is to contribute to the decarbonization of fuels used in the transport sector in order to meet the goals of the Kyoto Protocol on reducing greenhouse gas emissions. A set of changes related to the environmental specifications of diesel and gasoline was introduced: the percentage of incorporation of biofuels, steam pressure, polycyclic aromatic compounds, metallic additives, sulphur. For gasolines it is currently allowed a maximum incorporation of 10% of ethanol (v / v: volume) (grade E10) and diesel to a maximum FAME 7% (v / v) (grade B7).

In response to the publication of the the Fuel Quality Directive, the CEN TC19/WG21 is reviewing the EN 228 standard related to the requirements for road gasoline in order to include those levels of ethanol.

In order to comply with the targets set in Portugal for the incorporation of biofuels in the transport sector, Galp Energia has regularly incorporated FAME in road diesel and diesel for non-road machinery, agricultural and forestry tractors, as well as in

coloured diesel and marked for the uses set out paragraph 3 of the Article 74 of Decree-Law No. 566/99 of 22 December.

For the sulphur content of fuels, Galp Energia, in line with the legislation in force, started marketing fuels with a maximum sulphur content of 10 mg / kg in 2009 across the territory, thus contributing to better air quality and anticipating the requirements of the Fuel Quality Directive, which provides only for 1 January 2011 the entry into force of this requirement.

In terms of marine fuels and regarding the implementation of Directive 2005/33/EC in accordance with Decree-Law No. 69/2008 of 14 April establishing the sulphur content of certain types of liquid fuels, including fuel oil, diesel and marine fuels, Galp Energia sold in 2009 marine diesel, for use in the country, with a maximum sulphur content of 0.1% (m / m: mass), except as required by law.

In order to fully comply with regulatory and market requirements, Galp Energia established stringent internal specifications, of which about thirty were subject to review in 2009 for a comprehensive range of products: diesel and road gasoline, heating diesel, fuel oils, chemicals and bitumen.

Thus, the Company promotes confidence in its products, ensuring quality throughout the life cycle, from production to delivery to the customer.

#### Regulatory, legislative and technological framework

Given the increasing pressures of the Portuguese, the EU and the international legislation related to fuel quality and emissions in the transport sector, Galp Energia maintained and strengthened in 2009 its participation in international bodies of recognised prestige and influence. Galp Energia extended its participation in the CONCAWE and kept a close monitoring of the Portuguese standard process by taking part in technical committees of the Portuguese Institute of Quality, particularly in CT38 related to oil products.

With the participation in the CON-CAWE - Fuel Quality and Emissions Management Group, an organisation with a clear strategy in the field of fuel quality, Galp Energia plans to:

- · Anticipate the implications of future legislation and changes in vehicle fuel quality and its impact on refining;
- · Have the know-how necessary for the discussion of fuel specifications;
- · Participate and / or support programmes of research on vehicles and fuels in order to support the development of the specification;
- · Foresee future situations through monitoring of strategic initiatives.

Indeed, Galp Energia closely follows every initiative of this body.

## **Quality control**

The quality of Galp Energia's products is subject to strict controls. For this end, Galp Energia has laboratories with recognised expertise provided by teams of qualified and experienced technicians and equipment with high technological level.

All laboratories are accredited by the IPAC, in accordance with the NP EN ISO IEC 17025 standard, providing its customers and wider society the quarantee of integrity and competence in carrying out the tests that allow the approval of its products meeting specifications of both the domestic market and the international market.

In 2009, the continued recognition of this competency was maintained and the accreditations of Galp Energia's three laboratories were held, after audits by individuals appointed by the IPAC.



L0037 Ensaios

Laboratory of the Matosinhos Refinery is accredited

Laboratory of Galp

Ensaios

Laboratory of the Sines Refinery is accredited

Ensaios

The IPAC is a member of the existing international accreditation organisations:

- EA: European Cooperation for Accreditation (www.european-accreditation.org), in Europe;
- ILAC: International Laboratory Accreditation Cooperation (www.ilac.org), in the world of laboratories and inspection:
- IAF: International Accreditation Forum (www.iaf.nu), in the world of certification and inspection.

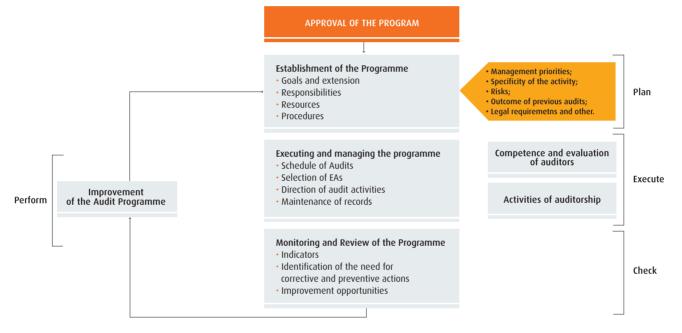
#### Audits of the Environment, Quality and Safety

The completion of internal audits for assessing the compliance degree with environmental, quality and safety requirements is a key element in achieving Galp Energia's sustainability agenda.

In order to achieve consistent results, maximise the effective use of resources and order improve-

ment opportunities, the EQS audit programme is run to generate indicators to support decision making.

Galp Energia approved at the highest level the Programme of QQS 2009 Audits having been conducted 50 audits involving 70 internal auditors, in a total of 94 participations.



In the establishment of the 2009 audit programme the following criteria were taken into consideration:

- Ensure the performance of annual audits to the certified or accredited management systems;
- Guarantee that audits to the Safety Management System for the Prevention of Serious Accidents in order to meet paragraph c vii) of the Appendix III of Decree-Law No. 254/2007;
- Ensure the representativeness of the selected audits for 2009 given the critical nature and the risk related to developed activities.

Galp Energia has a pool of auditors that includes the auditors carrying out internal audits across sectors.

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Quality - 60;
Environment - 33;
Safety - 46;
Laboratory - 18.
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These auditors are classified as:

- · Coordinator Auditors;
- · Auditors or training auditors.

Audit teams may include technical auditors who are experts in the sector under consideration.

## 0

#### **Quality Indicators project**

This project was intended to align the activities of the Quality Area with the priorities of the organisation by consolidating the approach to be applied in identifying, structuring and measuring the indicators that support Galp Energia's performance in the area of quality.

The project was developed throughout 2007, 2008 and 2009 in order

to select the most reliable and representative indicators of performance, which support the relationship management with business units and the monitoring of processes.

In 2009, the parameterization of the several selected indicators was consolidated in the SIAQS (Environment, Quality and Safety Information System). SINCE 2007,
GALP ENERGIA HAS
BEEN DEVELOPING AN
ACTIVITY OF SELECTING
MORE RELIABLE AND
REPRESENTATIVE QUALITY
INDICATORS, WHICH
HAVE ALREADY BEEN
PARAMETERISED.



#### **Problem solving**

In 2009, the implementation of the "Structured resolution of problems" approach through the five-step methodology was extended to new

business units. This effective tool continued being used to solve problems by identifying the underlying root causes.

#### PROBLEM SOLVING

Fostering the existence of a culture of problem solving at GALP ENERGIA:

- Reducing the variability of processes
- Reducing/ Eliminating activities without value added
- Eliminating costs of Non Quality

In the 2009 Programme, close to fifty research teams of new problems were formed at the refineries of Sines and Matosinhos, Parque da Boa Nova, GIM and the Lubricant Plant, involving about one hundred employees.

#### Phases of the Problem Solving project



SUSTAINABILITY REPORT 2009 · GALP ENERGIA

## Resource management

#### 3rd Forum of Galp Energia's EQS auditors

Under the theme "Auditing with effectiveness," the 3<sup>rd</sup> Forum of EQS auditors was held in June 2009, which was primarily aimed at the elements of the exchange of Galp Energia's EQS internal auditors as well as members of top management. The main guest speaker was Nigel Croft, a renowned international expert in the field of EQS audit, accreditation, certification and standardization.

In this forum the challenges faced by the auditors of the exchange and Galp Energia to ensure the effectiveness of audits and the continuous improvement of this process were highlighted.

The forum ended with the delivery by the heads of the UN / UG of diplomas to the auditors who ensured the implementation of the Programme of EQS Audits 2008, having thus been recognised their contribution to the improvement of the Galp Energia's performance.





#### Training of EQS auditors and managers

In order to continue to ensure the competencies of EQS internal auditors several seminars and training sessions were held, also in 2009,

under the Training Programme for Auditors in 2009 for a total of 134 participants.

#### ISO 9001:2008 seminar

While not adding new requirements, this new version of the ISO 9001:2008 standards has introduced a set of clarifications, guidelines and the alignment of concepts that have provided greater clarity in the

interpretation of the requirements. Galp Energia promoted an action open to EQS auditors and managers to ensure the Group's orientation to quality.

#### OHSAS 18001:2007 seminar and Management System of Safety and Prevention of Serious Accidents

This action was intended to make participants fit for:

lected in audits in accordance with the references.

- Interpreting the OHSAS 18001:2007 and the PAG's reference document (Seveso);
- Identifying and understanding the changes introduced by the new version of OHSAS 18001;
- Recognising the requirements of the SGSPAG mentioned in Decree-Law No. 254/07 of 12 July and reference documents issued by APA;
- · Identifying the evidences to be col-

During the action particular attention was also given to the following aspects related to the requirements contained in the Decree-Law No. 254/07 of July 12:

- Requirements emanated from documents published by APA;
- Analysis of the SGSPAG requirements to be verified in audits;
- · Evidence to be collected in audits.

#### **Training in Legal Compliance Audits**

There were two actions in the environmental front and three actions in the safety front. Whether a case or another, audit simulations in the field with autoscopy were carried out, so that participants could evaluate themselves in the technical and behavioural fronts.

The following goals were aimed at:

 Knowledge about the content, interpretation and method of implementation of the Portuguese and EU environmental and safety legislation that is relevant to Galp Energia's activities;

- Knowledge about the specific implementation to Galp Energia of the identified legislation;
- Skills to assess the fulfillment of the applicable requirements in the several types of installation;
- Skills required for the planning and execution of audits of legal compliance.

GALP ENERGIA TRAINED A
TOTAL OF 134 INTERNAL
EQS AUDITORS WITHIN
THE 2009 TRAINING
PROGRAMME, IN
ADDITION TO FIVE
TRAINING COURSES IN
LEGAL COMPLIANCE
AUDITS.

- The assessment of ISO 9001:2008 action by attendants was 96%;
- The assessment of OHSAS 18001:2007 action was 96%;
- The average assessment of actions on Legal Compliance Audit was 97%.

# 09



# INTEGRATING, MOTIVATING AND DEVELOPING THE POTENTIAL OF THE EMPLOYEES

DISTINGUISHING
EXCELLENCE, AWARDING
MERIT, STIMULATING
THE DEVELOPMENT
OF SKILLS, FOSTERING
MOBILITY AND THE
INTEGRATION OF
EMPLOYEES FROM
SEVERAL BUSINESS
ÁREAS ARE CRITICAL
SUCCESS FACTORS
FOR THE DEVELOPMENT
OF OUR HUMAN CAPITAL.





# INVESTING IN HUMAN CAPITAL

The consolidation of the Group's values and the upgrade, satisfaction and motivation of our employees are fundamental principles in the orientation of the policies for human resource management.

Distinguishing excellence, awarding merit, stimulating the development of skilss, fostering mobility and the interaction between the áreas are still strategic goals for the development of both employees and businesses.

As an employer of reference, Galp Energia focuses on innovation and entrepreneurship, the continuous improvement of performance standards, orientation to results and service quality.

For this end, the Company continues to attract and retain talent through its specific host programmes for young graduates and initiated the project to establish the Galp Academy which, in close partnership with universities of reference, will enable the graduation of its senior staff in a set of management and behavioural skills aligned with the needs of the Group and the development of careers.

In a process of personal and professional enhancement and value creation for the Group, 18 employees were expatriatd in countries such as Spain, England, Brazil, Gambia, Swaziland, Angola, Mozambique and Guinea-Bissau at the end of 2009.

The growing internationalization of the Group led to the creation in the structure of the Human Resources Department of a specific area to monitor the business abroad and the processes of international mobility aimed, firstly, at enabling better monitoring of staff and expatriates and, secondly, develop and adapt the Group's human resources policies to the realities of each country.

The profiles of technical skills and behavioural skills of the Group's positions Were established and consolidated. Each employee was evaluated against the profile of its position, allowing the identification of strengths and points to improve, for which they provide training sessions or job rotation, suitable for skill enhancement.

In this context, managers were evaluated by the 360° method, supported on a computing platform, which included subordinates, peers and line manager.

In order to meet the development needs identified in the Group, 128,114 hours of training were held, in 2009, in the Galp Energia Group in order to contribute to improved levels of performance.



IN ORDER TO MEET
THE DEVELOPMENT
NEEDS IDENTIFIED
IN THE GROUP,
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OF TRAINING WERE HELD,
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TO IMPROVED LEVELS
OF PERFORMANCE.

In the field of labour relations, Petrogal S.A. and the unions reached an agreement which reduced to 61 categories the 277 categories listed in the ACT of Oil Categories in the Agreement on Professional Categories.

This agreement ended a long negotiation process in which the parties pledged to resolve the apparent mismatch between the skill levels of the positions and the previous frame of professional categories. This process resulted in a new "Model Guidelines for Professional Categories" as well as the definition of a" Transition Regime" between the old and the new model, which set new standards of professional environment.

The frequency of meetings with the Workers' Committees of the Galp Energia Group companies remained in 2009. At the end of the year, 86.2% of Group employees were covered by collective bargaining agreements.

In 2009, the number of employees in the Galp Energia group fell 4.1% to 7,493 at the end of the year. This decrease was due to rationalization

measures of staff and the disinvestment in some areas where the companies acquired last year.

This reduction took place in most of territories where Galp Energia operates, namely 5.3% in Portugal, 2.4% in Spain and a little less than 2% in other countries where Galp Energia is is located. In relative terms, the geographic distribution of the Group's employees remained.

Galp Energia Group admitted 1,328 new employees in 2009, representing a decrease of over 58% compared to 2008. This process is largely explained by the fact that in 2008 there were acquisitions in the Iberian territory that brought over two thousand new employees to the Galp Energia universe.

The 1,652 exits primarily resulted from factors above. The overwhelming majority of the movements of entry and exit of the Group occurred at the level of employees assigned to service areas (1,098 admissions and 1,255 exits).

	2008	2009	CHANGE
Number of Employees	7,817	7,493	(4.1%)
in Portugal	4,771	4,519	(5.3%)
in Spain	2,722	2,656	(2.4%)
in other countries	324	318	(1.9%)
Number of Employees			
Men	4,630	4,432	(4.3%)
Women	3,187	3,061	(4.0%)
Number of Employees			
permanent contracts	6,798	6,540	(3.8%)
fixed-term contracts	939	865	(7.9%)
contracts of unspecified duration	80	88	10.0%
Average age (in years)	39.3	40.3	1.0
• Length of service (in years)	10.6	11.1	0.5
Admission of employees	3,176	1.328	(58.2%)
Demission of employees	1,157	1,652	42.8%
• Absenteeism (in %)	3.4	3.4	-
Hours of Training	133,110	128,114	(3.8%)

#### Distribution by reason for demission and age band

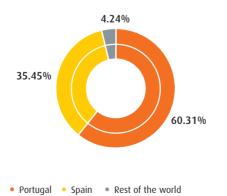


#### Distribution by reason for demission



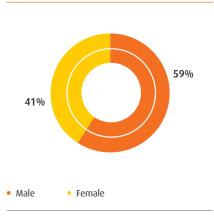
At the end of the year, 59% of Galp Energia's staff was male employees and 41% female. This imbalance was largely explained by the predominance of male employees in both refineries and activities in Africa.

# Geographical location of employees in 2009

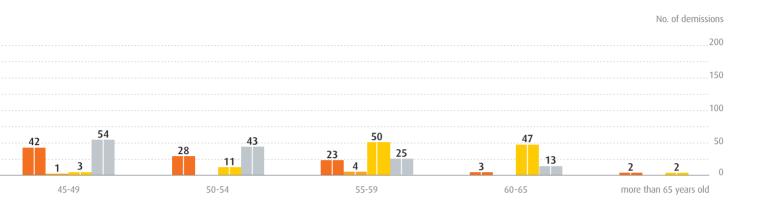


Portugal continues to be the country with the greatest number of employees, 60.31% of the total, with Spain set to grow in importance with the acquisitions of the former Iberian branches of Agip and ExxonMobil.

# Distribution of employees by nature in 2009



Distribution of Galp Energia employees by nature remained stable in relation to 2008, with male employees predominant.



#### Number of Employees by contract type at 31 December 2009



In age distribution, there is a greater concentration of workers in the interval of 30 to 49 years, which translates into an average age at the level of the entire group of 40.3 years, in progression compared to 39.3 years in the previous year.

In detail, 18% (compared to 20% from 2008) of the Galp Energia Group's employees were under 30 years, 60% (59% in 2008) were between 30 and 49 years and 22% (21% in 2008) were 50 years or more.

In late 2009, the average seniority of the Group's employees stood at 11.1 years, ie an increase of 0.5 years compared to 31 December 2008.

More than three quarters of the remaining contracts (fixed term or variable term) are associated with the area of fuel distribution, particularly in the areas of service, reflecting the very specific nature of this business segment in the management of human resources.

IN 2009, THE POLICY
OF PREFERRING
PERMANENT CONTRACTS
WAS MAINTAINED,
REPRESENTING THIS
TYPE OF CONTRACT 87%
OF ALL CONTRACTUAL
RELATIONSHIPS.

# Results of the diagnosis of organisational climate in 2009

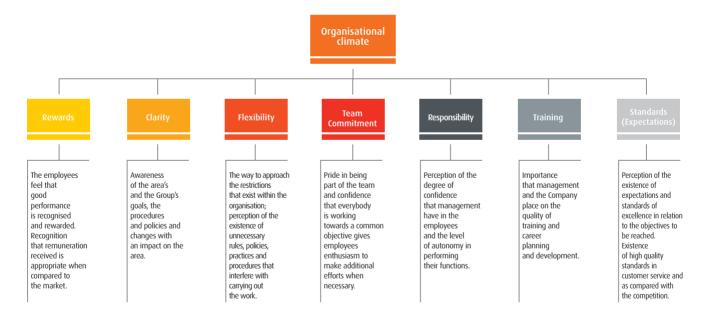
With the aim of understanding the employees' perceptions of several dimensions related to their work and which directly or indirectly influence motivation and job satisfaction, a questionnaire for the diagnosis of Organisational Climate was launched in last December. Overall, 1,351 employees responded, representing a rate of 50.2% compared with 2,692 questionnaires sent.

#### Assessed dimensions

Each employee has given his opinion on 48 statements related to the management unit to which he belongs and on the same statements related to the Galp Energia group using a scale of six levels (level 1 - Strongly disagree, Level 2 - Disagree, Level 3 - Partially disagree, Level 4 - Partially agree, Level

5 - Lagree, and 6 - Strongly Agree).

Responses were grouped into seven factors to evaluate the following dimensions of the Organizational Climate: Clarity - Flexibility - Commitment to team - Responsibility - Training - Reward - Standards / requirement levels:



## Results

#### Global assessment of the climate of the Galp Energia Group

- Regarding the current climate, the overall results indicate that in Galp Energia, on average, the perception of employees about the seven dimensions is evaluated positively.
- Regarding the differences between the current climate and how it should be in the future, the largest leaves (-1.5) were in the "Training" and "Reward" factors.

## Overall assessment of the climate in Management Units

- The assessment of the current climate in the Management Unit is also positive and, except for the Responsibility factor, it is slightly higher than the overall assessment of the Group.
- Regarding differences between the current climate in your Business Unit and as it should be in the future, the largest gaps (-1.3) are in the "Team commitment", "Flexibility", "Reward" and "Responsibility".

#### **Galp Energia Group**



- Current reality (UN)
- Current reality (GE)
- How it should be (UN) How it should be (GE)

# Next steps - Working groups

For the detailed analysis of survey results, six working groups were composed with the participation of staff representing all Business Units / Management and led by an executive director. Each group was assigned one of the factors of the climate questionnaire, to discuss

and analyse the results and draft action proposals that may contribute to the gradual improvement in the levels of satisfaction / motivation to be presented at a meeting of senior managers to take place in April.



THE CONTRIBUTION
TO SOCIETY IN SEVERAL
FIELDS IS A VERY
IMPORTANT GOAL
FOR GALP ENERGIA,
MOBILISING COMMUNITIES,
MITIGATING SERIOUS
SOCIAL PROBLEMS
AND RETRIEVING VALUES
SUCH AS SOLIDARITY
AND ALTRUISM.

THE THE PARTY







# **SOCIAL RESPONSIBILITY**

The contribution to society in various fields is a very important goal for Galp Energia, mobilising communities, mitigating serious social problems and retrieving values such as solidarity and altruism.

Social responsibility has been developed in close collaboration with other business areas, enabling the development of activities fitting into the status of patronage, particularly by establishing partnerships with organisations representing the interests of the community, and allowing the reinforcement of the values and vision of the Galp Energia aroup.

With particular but not exclusive attention in locations where Galp Energia has its industrial plants, in Sines and Matosinhos, the following institutions were supported:

a) Social / humanitarian institutions they represent our commitment to children, youth, adults and seniors in isolation for reasons of mental or intellectual decline and prolonged illness. Young single mothers, as well as humanitarian projects in Africa, are also supported. These supports are those with greater financial expression;

- b) Institutions of Innovation, Science and Education in the Environment - with the aim of promoting alternative energy sources several partnerships have been created and agreements established in science and education have enabled a closer relationship with younger communities:
- c) Cultural institutions collaborations have been established with some institutions of national reputation for the promotion of art, music, literature, including the promotion of exhibitions;
- d) Institutions of Sports and Recreation particularly in Sines and Matosinhos, partnerships have been established to carry out initiatives to combat social exclusion through the promotion of cultural and sporting activities such as dancing, swimming, theatre and music, by making a very positive assessment of these activities.

# Over one hundred organisations and €5 million in initiatives and partnerships for Social Responsibility were covered

In this context, Galp Energia contributed with close to € 5,300,000 in carrying out activities of this nature, covering 109 entities.

One of the events that deserves mention was the presentation of the newly created Galp Energia

Foundation that has established itself as the Company's social brand. This event, which occurred in Oc-



OVER ONE HUNDRED **ORGANISATIONS** AND €5 MILLION IN INITIATIVES AND PARTNERSHIPS FOR SOCIAL RESPONSIBILITY WERE COVERED.

tober, was attended by Ministers of State as well as leading figures from academia, witnessing the Foundation's commitment to recover the assets of the Palácio Nacional da Ajuda.

In the next chapter of this report, the Galp Energia Foundation and its activities are presented on their own.

Another of the actions of social responsibility that Galp Energia has joined and had national importance was the Planet Earth Lisbon 2009, organised by the Portuguese Commission for UNESCO. In that event, major issues related to the environment were discussed: renewable energy, water management and sustainability of soils.





IN THE
"MAKE-BELIEVE" CITY,
GALP ENERGIA HELPS
YOUNG PEOPLE TO LIVE
IN HARMONY WITH
ENVIRONMENT AND
SOCIETY.

# "Positive Energy Movement"

The promotion of the Positive Energy Movement was continued, following the commitment made by Galp Energia with the Directorate General of Health, and specifically with the Platform for Counteracting Obesity, in order to help reduce the incidence and prevalence of pre-obesity and obesity in Portugal. Activities developed in 2009 focused on:

- The creation of a "Healthy Menu" available at Galp service stations;
  - Against Obesity, held in May;

    The internal project of putri
- The development of guides on healthy eating available for health professionals;
- The internal project of nutrition for workers of the Galp Energia Group seminars and appointments.

• The sponsorship of the 1st Race

# ECO – forest protection

Galp Energia signed the protocol of accession to the ECO Forum, becoming one of the first companies to help the national mission of defending the Portuguese forests and preventing and fighting forest fires.

Galp Energia has released a whole range of media (filling stations, Galp TV, GE website, windows and doors of M24 shops) for promoting the advertising campaigns conducted by ECO Forum.

# Galp Energia is present at Kidzania

Galp Energia is present at the first thematic park in Portugal of the Child Foundation at KidZania Lisboa, located at the Dolce Vita Tejo shopping centre.

This "city" is ruled by the principle of "pretending to be adults" made at a small scale. There are close to 6,500 m<sup>2</sup>, where children can find everything:

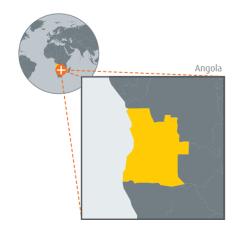
streets and avenues, cars, buildings, shops, plants and more representative establishments, where they can "work" in over 60 professions.



IN THIS EVENT
ORGANISED BY
THE UNESCO NATIONAL
COMMISSION, CRITICAL
THEMES RELATED TO THE
ENVIRONMENT
ARE DEBATED.



AS PART OF THE ACTIVITIES
IN ANGOLA, GALP ENERGIA,
TOGETHER WITH PARTNERS
IN THE EXPLORATION
OF BLOCK 14 IN CABINDA,
HAS PARTICIPATED IN SEVERAL
SOCIAL PROJECTS WITH
THE AIM OF PROMOTING
THE IMPROVEMENT
OF LIVING CONDITIONS
OF LOCAL PEOPLE.



After doing the check-in at the airport, children enter the "make believe" city. There they may undergo surgery in the operating room, work as firemen, doctors and police officers, take a driving licence and drive a car on the racing circuit, be a radio, newspaper or television journalist, actor in a theatre play, open a bank account and make their own savings.

In the "make believe" city, children can enter, visit and / or work in a Galp Ecoposto, where environmental and social responsibility concerns are communicated early on to children including the sharing of a car through Galpshare.

Galp Energia's Christmas action, in 2009, consisted of providing a Christmas party in the city of dreams to 110 children from two charities

# INTERNATIONAL COOPERATION

Galp Energia believes that it is its obligation to participate in a more harmonious and sustainable development and that this can be achieved by means of scientific, economic and even social cooperation with the partner countries on its activities.

# Corporate responsibility in Angola

As part of the activities in Angola, Galp Energia, together with partners in the exploration of Block 14 in Cabinda, has participated in several social projects with the aim of promoting the improvement of living conditions of local people.

 Rehabilitation and expansion of the Health Centre and Munhino Maternity – Huila

The center was inaugurated in January 2009 and has since assisted over 4,500 patients, especially pregnant women, infants and children under 5 years of age.

The project contributed to the improvement of health services in the area, and in particular to reduce ra-

tes of maternal and infant mortality.

#### Kimbo Liombembwa – "Peace Village"

This association of Luanda assists over 200 children per year, sending them for medical treatment abroad. The proposed project included the construction of the headquarters and ancillary facilities for the association as well as the purchase of vehicles to support its activities.

In early 2009, the partners in the ex-

ploration of Block 14 donated seven vehicles to this association, including a minibus, several jeeps and a pick-up that are being used to provide better services to children, particularly in transport to neighbouring provinces.

#### • Health Clinic in Menongue

Rehabilitate and equip a health clinic in the neighbourhood of Kubango, in Menongue. The purpose is to contribute to the improvement of healthcare in the area, mainly for pregnant and breastfeeding mothers and their babies.

#### Training School for Teachers of the ADDP, in Malange

Construction and equipment of a new school opened in September 2009 to train teachers in the province of Malange. The project aims to train 300 qualified primary school teachers in Angola, which will be distributed throughout the country.

#### Programme to develop a Library

Support to the creation of a municipal library in Cabinda and guaranteed training to promote its sustainable management. Material support will consist of provi-

ding books and equipment.

#### Football Club of Namibe

Financial support to the Football Club of Namibe, with the aim of enhancing its capabilities and promote the national competition.

#### Revival and Growth

Support to the programme of education, activities and maintenance of the orphanage in Luanda.

This programme has helped over 140 orphans and children suffering from the trauma of domestic violence and people with physical and mental disabilities. Under this project, a temporary shelter, food, counseling and small events for special occasions, such as the International Day of the Child, were provided.

#### SEAKA – 1 Sopa e 1 Pão (1 Soup and 1 Bread)

Support to the charity of Luanda that provides basic meals to people in hospitals, poor and homeless. This institution has assisted over 6,000 people with one hot meal a day.

# 0

THE "REBORN AND GROWING" PROGRAMME HAS HELPED MORE THAN 140 ORPHANS AND CHILDREN FROM THE ORPHANAGE OF LUANDA.

# Corporate responsibility in Mozambique

As part of the consortium activities where Galp Energia participates in the exploration and production of Area 4 Offshore of the Rovuma Block in Mozambique, the Company has developed several activities.

The actions that translated the Company's concerns in social responsibility were:

- The implementation of an Emergency Medical Plan throughout Mozambique;
- Environmental Impact Analysis Studies for the activities of seismic acquisition and drilling wells (the latter is still in preparation);



Project to rehabilitate the infrastructures of water supply for people in the districts of Palma, Mocímboa da Praia and Macomia, in the implementation phase, in collaboration with the Ministry of Mines (MIREM-INP) and local authorities in the Province of Cabo Delgado;

 Training and institutional support to the technicians of the INP (Instituto Nacional de Petróleo) and the ENH (National Company of Hydrocarbons).

In addition to these actions, there are the no less important actions developed under the biofuel project already mentioned in Chapter 5 of this report.



# Cooperation with Venezuela

Under the 2008 agreements between Galp Energia (Petrogal) and its peer PDVSA, Galp Energia has assumed responsibility for carrying out technical assistance to the development and construction of the first wind farms in Venezuela with 72 MW of total power in La Guarida, Isla de Coche, Isla Margarita and Chacopata, paving the way for the development of wind resources in the country.

This project includes a very important training and assistance component to a large team of technicians who will monitor and participate in the project at various levels and in all phases.

So far, Galp Energia has promoted the participation of the Portuguese Scientific System in the project, namely:

 LNEG, for investigation and determination of wind resources through the supply and installation of measuring towers in predetermined locations, and remote collection from Portugal and processing of meteorological data, at least during one year. This team will only define the settings of each park at the end, depending on terrain and resource, as determined by computer models;

• INESC Porto, not only for the studies on the local electricity networks and the ways the local electricity networks can come to integrate the production of electrical power from wind turbines, but also for the preparation of technical regulations that enable those and other parks to make connections to the network to drain the production.



# **Activities in Brazil**

#### **Health Plan**

As in Portugal, Galp Energia guarantees to its employees in Brazil the enjoyment of a health insurance that allows the use of high quality professionals and health institutions. The benefits allow employees to be compensated of medical and hospital expenses covered, without limitation of the

internment period, maximum price and quantity in basic and specialty clinic centres recognised by the Federal Council of Medicine.

To promote health, a contract that ensured compliance with the legislation in force, safety and occupational medicine, as well as car-



rying out prevention activities for all employees enabling improvements in the quality of their lives, was signed between Galp Energia and the Centro de Freitas Octávio. Additionally, all legal dependents became eligible for medical and dental care plans, fully funded by the Company.

Galp Energia regularly promotes training programmes for its employees, particularly in the areas of safety and occupational health. In order to promote local employability in businesses developed by Galp Energia in Brazil, employees of Brazilian citizenship have been hired. Currently, only 4.5% do not have Brazilian citizenship.

With this initiative, Galp Energia has reaffirmed its role as a precursor to a path of responsibility and social concern. The image that has already been conquered in the country was also reinforced.

# The projects in Timor

Galp Energia participates in a consortium of five exploration blocks in the sea of Fast Timor.

The consortium is involved in several social development activities, some in collaboration with other organisations such as:

- CARE: Integrated Rural Development (regions of Bobonaro and Covalima);
- PLAN: Programmes of Health, Water and Sanitation in 6 schools (District of Alieu);
- Anti-Poverty Presidentials Task Force:
   Water supply programme in Los Paulos;

- Peace Dividend Trust: Expansion of Local Supply Chain Development;
- Timor Aid: National Civic Education Curriculum Development Project (NCECD);
- ENI Corporate University: Funding master degree scholarships integrated in the programme of the ENI Master MEDEA:
- Arte Moris: contribution to arts education

# "Galp Unicef Sheraton", in Gambia

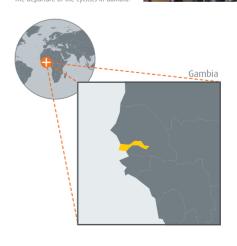
Galp Gâmbia supported the "Galp Unicef Sheraton" bicycle race held in October 2009 on the outskirts of the capital, the city of Banjul.

The race began at the Galp Energia filling station of Kairaba and was attended by hundreds of cyclists and ended next to the Sheraton Hotel.

This initiative to support UNICEF had a huge impact on the country and

special attention in the media, since this United Nations body has played an important role in supporting children and their development.





# Wanalea project

The contribution to the fight for Development and against Poverty was marked in 2009 by the initiative of two collaborators of Galp Energia.

Galp Energia, represented by Ângela Galvão and Filipa Fialho, was in Kenya taking Positive Energy with them: 21 days at an orphanage in the Project Wanalea. Wanalea in Swahili means they care about children.

The partner for this initiative was the ADDHU, a NGO registered with the Portuguese Institute for Development Support.

The Orphanage was founded by the

ADDHU in Ongata Rongai, "village" about 20 kms from Nairobi, near the shanty town of Kware. The two collaborators have been actively involved in the day-to-day lives of these children, with positive energies exceeding the boundaries of the orphanage and reaching the largest shanty town in Africa - Kibera - and one Masai community.

Every step of the mission can be found at : www.energiaspositivasnoquenia.bloqspot.com.

# SOCIAL RESPONSIBILITY AND GALP ENERGIA'S EMPLOYEES

comprehensive and consistent line of conduct of its long history,

# Galp Energia Club

covering the entire Portuguese territory.

The Galp Energia Club was able to materialise during 2009 the most

We believe that the activity of a company club is to promote moments of the most diverse nature that provide the creation and consolidation of personal relationships of friendship and trust, so essential for those who share the same goals at the professional le-

vel of value creation.

The Galp Energia Club - North promoted sporting, cultural, recreational and leisure activities and seeks to promote better integration of associates and employees of the Northern region of Galp Energia, not confining itself to the

professional day-to-day activity.

The Galp Energia Club - centre pole guided its action by the diversification of the initiatives proposed to its associates, performing over 130 activities.

The Galp Energia Club - South lived another year of strong capital expenditure in the creation and maintenance of infrastructures as well as the development of sports and cultural activities related to them, with a significant increase in participation in the undertaken initiatives.



THE GALP ENERGIA CLUB
WAS ABLE TO MATERIALISE
DURING 2009 THE MOST
COMPREHENSIVE AND
CONSISTENT LINE
OF CONDUCT OF ITS LONG
HISTORY, COVERING
THE ENTIRE PORTUGUESE
TERRITORY.

#### ... becoming Iberian

In 2009 the final of the Internal Futsal Championship of the Galp Energia club was held in Spain.

For the first time in over three decades of the Club's existence, there was a final involving teams representing the three national regional centres (the respective champions of the local leagues) as well as a

fourth team entirely composed of colleagues from Spain.

In practice this is something that should guide the action of the governing bodies of the Galp Energia Club - to foster a Galp Energia culture in all places on Earth where our Group develops its activities.



#### ... focused on its Associates

Thousands and thousands of Associates and their families were present in the initiatives that are the epitome of the Galp Energia Club's activity - its three Christmas parties. This year, the Coliseum of Porto, the Coliseum of Lisbon and the Pavilion of Vila Nova de Santo André were filled with magic and joy clearly evident on everyone's face.

Approximately eight hundred people answered yes to the call to participate in the Anniversary Lunch of the Galp Energia Club. From around the country, they represent a clear sign of the vitality of the Club and the receptivity to the proposals presented by the Club.

Under the sports activity of the Northern Pole of the Galp Energia Club, we highlight the organisation of the Internal Regional Championship of River Sport Fishing and the creation of a Motard group that organized a walk with high adhesion to the lands of Vieira do Minho. We also highlight the participation in the Regional Basketball Championship of the Inatel Foundation, where our team was qualified to the finals and ended its participation with a creditable fourth place.

The year 2009 was also a period of growth in athletics. Our athletes were divided by different age groups, participated in all events organised by the Inatel Foundation and marked their presence in the Veterans National Indoor Championship.

In cultural and recreational activities, performed activities were diversified, ranging from photography exhibition with a gathering to complete a historic walk through the city of Porto or organising traditional festivals at certain times of the calendar, such as the Carnival and St. Martin

The Recreation and Cultural Branch of the Galp Energia Club – Centre Pole continued undertaking initiatives, including the commemorating lunch of St. Martin's day, the possibility to watch high-quality cultural performances (theatre, cinema, opera, circus and ballet, among others) as well as all kinds of tours in Lisbon, Portugal and the World.

Continuing to develop activities for the children of our Associates was also a concern, given the excellent response demonstrated in all such initiatives that the Club has programmed, and were matched with high participation of children.







In sports, the karting competitions, for men and women, bowling, the proposed workshops, participation in the crossing of the bridges of April 25<sup>th</sup> and Vasco da Gama, the futsal tournament, surfing and body boarding classes, the motard ride and sea fishing journeys, among many other activities, are always eagerly anticipated and widely participated.

In the geographical area of the Sines refinery, we highlight the launch of the *FitLifeExpress* programme, which consists of making exercise sessions of thirty minutes in the premises of

the Club. Currently, there are about seventy athletes. The proven success of this programme demonstrates the quality of service and the facilities of the Club in southern Portugal. Predictably, we will increase the number of sessions available as well as implement new methods of similar format.

For young people, we highlight the consolidation of the School of Figure Skating, now recognised by all, not only for the quality of its work but also for the results obtained by our athletes.

#### ... in harmony with the communities in which it is inserted

The local recognition for the work done by the three poles of the Galp Energia Club is widespread. We highlight, among many references:

- In the north, the presence, at the invitation of the Municipality of Porto, in the fair of the county's associations with a stand dedicated to the Club's past, present and future;
- In the centre pole, the development of a hundred partnerships with many different business entities, providing the attainment of cheaper products and services by its Associates, which are employees of the Galp Energia Group;
- In the south, the start of construction of two artificial grass courts, opening in 2010, and which will provide even greater closeness between the residents in Vila Nova de Santo André and the Club.



FOR MORE DETAILS
AND OTHER ACTIVITIES,
VISIT THE WEBSITE:



www.clubegalpenergia.com

#### ... with strong sense of solidarity

In 2009, the Galp Energia Club developed several initiatives that demonstrated the full power of solidarity of its associates, enhancing their civic action:

- We promote a collection of food that, along with a voluntary action, provided a Christmas dinner to over one hundred people in need;
- We conducted a campaign to get clothes and toys that resulted in the distribution, among a dozen charities, of eleven thousand five hundred clothes and toys;
- We have also developed, among other activities, campaigns aimed at delivering movies and games to institutions, whose main purpose is to create a space for children and youth where they can occupy your time.

# COMMUNICATION WITH STAKEHOLDERS

# Internal communication with employees

The guiding principle of the design of the communication strategy for 2009 was reinforcing the organisational culture that results in creating a sense of belonging to the Group, with the aim of increasing motivation, employee satisfaction and also their productivity.

The organisational culture we want to encourage is based on the values that Galp Energia advocates, such as teamwork, entrepreneurship and focus on results, individual development and enhancement, innovation and continuous improvement, safety and the environment and, finally, integrity and transparency. Every communication action is based on these assumptions.

#### Mygalp

In internal communication, 2009 was the year of the consolidation of the "mygalp" brand, which is characterised by the transversality of media and communication channels.

Apart from the focus on the quality of content presented on the intranet (mygalp site of the employee) and the relevance that the electronic newsletter assumes (mygalp energy of the week), the magazine (mygalp magazine) is now highlighted for positioning itself as a reference in the Galp Energia universe, both nationally and internationally.

In this publication, an important internal communication tool, the actions that strengthened the company's sustainability policies for the promotion of the efficient use of energy resources were highlighted.

In this context, Galp Energia received the award in the category of "Corporate Identity" on May 25 at the cerimony of the Portuguese Association of Corporate Communications, and it was awarded four merit prizes for the appointments in the "Historical Responsibility and Corporate Memory"," "Intranet", "Communication and Social Responsibility Campaign" and also "Bulletin and Newsletter."

The revitalization of Galp Energia's Volunteer Exchange has been a goal of developed work, having a proper area in the mygalp site, motivating employee participation.

Enhancing the intranet and the Energy of the Week newsletter, several initiatives of solidarity have been organised and promoted. The "Associação Salvador" and the "O Século Foundation" are examples.



CREATING A SENSE

OF BELONGING

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WITH THE AIM OF

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THE REVITALIZATION
OF GALP ENERGIA'S
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HAVING A PROPER AREA
IN THE MYGALP SITE,
MOTIVATING EMPLOYEE
PARTICIPATION.

#### Internal events

Internal events are important forums for debate and mobilization to Galp Energia's activities and challenges.

Managers' Meetings, for their role in fostering the organisational culture, communication plans and results, strengthening the sense of belonging and cohesion in the organisation, deserve to be emphasised.

The Biannual Managers' Meeting held in May in the auditorium of

the Faculty of Dentistry of Lisbon, bringing together close to 600 managers to discuss "Excellence in Execution" in investments and activities in Galp Energia, is an example.

The ceremony of the "Golden Pin", awarded to employees with thirty or more years of seniority in our company, deserves emphasis. It is an initiative of great symbolism, since much of the success that Galp Energia has today is due to the commitment and valuable experience of these employees.

#### Internal campaigns

These are some examples:

**Influenza A (H1N1)** – Under the motto "Prevention is our best weapon", a communication campaign to raise awareness and prevention on issues related to influenza A (H1N1) was

launched in several internal communication media. Messages materialised in flyers, posters, banners, informational articles, among other examples used to convey consistent information and get immediate results, ie the lowest number of cases of influenza A.

**Safety programme** – Communication of messages related to the safety programme in Galp Energia's several facilities competing once again for the ambitious goal of accident "Zero" in the workplace.

Also as corporate responsibility initiatives, we present some of the other projects developed by the Galp Energia Group during 2009.



# **Customer satisfaction**

Galp Energia is committed to know customers' perception about the quality of the treatment provided by its customer support services, both physical and not.

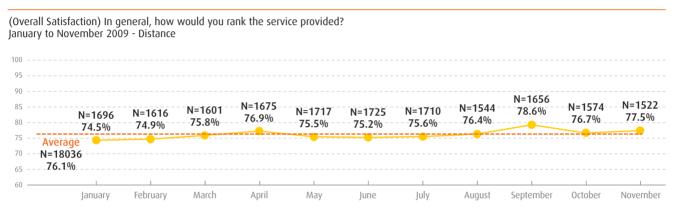
Thus, Galp Energia intends to obtain timely and systematic feedba-

ck from customers in order to allow proactive measures in improving

and standardising the quality of service, with positive impacts on customer satisfaction with service, customer retention and loyalty to the brand. These are some of the results:

# Customer satisfaction with non-physical customer support services, in 2009

#### **Analysis of Overall Satisfaction**



# Customer satisfaction with physical customer support to natural gas, in 2009

#### **Analysis of Satisfaction in Natural Gas**

(Overall Satisfaction) In general, how would you rank the service provided? January to November 2009 - Natural Gas



Currently, Galp Energia plans to continue and develop its current assessment system of Customer Satisfaction with Support Services for very contact media (Telephone, Email, Mail, Complaint Book and in person).

The opinion of Galp Energia's customers is monitored on a monthly basis, and this analysis is under-

took across all services. The results show, in the category of non-physical support, an overall satisfaction close to 77% and in the category of physical customer support to natural gas there is a satisfaction of 80%.

# SUSTAINABILITY REPORT 2009 • GALP ENERGIA

# INSTITUTIONAL REPRESENTATION

Following the goals set out, Galp Energia took part with close to € 1,300,000.00 in the activities of Governmental and Non-Governmental Organisations in the action spheres of the energy sector and the environment, and also of business and trade associations.

Thus, we can highlight the participations in business meetings, general meetings and scientific and opinion publications, in a total of 126 entities.

By way of example and due to the conclusions of its work, we mention the following participations and supports:

### "The Hypercluster of the Economy of the Sea" study

Through the partnership established between the Lisbon Commerce Association - Chamber of the Portuguese Commerce and Industry, Galp Energia, SGPS, S.A., and other public-private entities whose activities are directly or indirectly dependent on marine resources conducted a study entitled 'The Hypercluster of the Economy of the Sea."

This study aims to carry out a cross-reflection on the subject and contribute to policy formulation and the adoption of measures that encourage the sustainable use of marine resources in our

country, boosting investor interest in this sector.

There we conducted actions of public communication among executive powers, stressing the need for policy reforms in Maritime Affairs. These actions resulted in a decision in December 2009 in the Council of Ministers (Resolution 119/2009), which aims to promote favourable conditions for attracting private investment through a new approach to the Interministerial Commission for Maritime Affairs (CIAM in Portuguese).

# Portuguese Council of Chambers of Commerce in Brazil

On 28 and 29 September 2009 the Fifth Business Meeting of the Portuguese language took place in the Convention Centre of Ceará, promoting a thorough discussion between businessmen and liberal professionals, political and diplomatic authorities, representatives of professional associations and development and funding institutions, besides the trade press, on the theme of tourism, infrastructures, natural resources and technological innovation.

#### PORTUGUESE ASSOCIATION OF MUNICIPALITIES

Also promoted by the ANMP, the Second Meeting of the Lusophone Local Governments took place on 27 March 2009, in Lisbon, under the theme "A Strategic Vision for Portuguese Cooperation", being a precursor event of the Forum of Local Authorities of the Community of Portuguese-Speaking Countries.

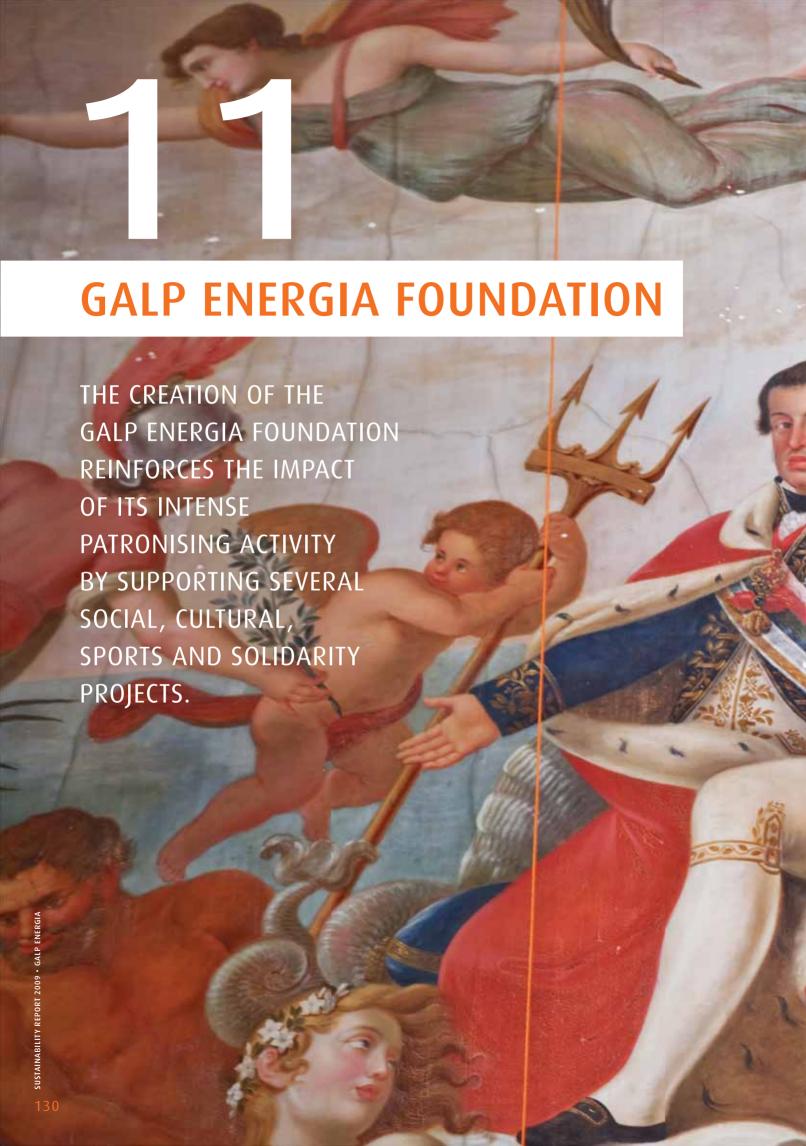
In the XVIII Congress of this entity, held on 4 and 5 December 2009 in Viseu, the transfer of competencies to the municipalities on the monitoring of air quality and the widening of the Sustainable Mobility Programme to a greater number of Portuguese municipalities was discussed.

#### **DIÁRIO DIGITAL**

Being a frequent model of dialogue and reflection, the 11th Lunch-Conference organised by the Diário Digital had Galp Energia's support of to discuss the issue of global economic environment and in particular the consequences for the countries of southern Europe. One of the speakers at this conference was the highly recognised economics professor Nouriel Roubini.

The following supports to seminars and conferences deserve being highlighted: 24<sup>th</sup> Annual European Autumn Gas Conference 2009, COGEN - Seminar on Micro-Generation and XV Logistrans Scylla - November 2009.







# THE GALP ENERGIA FOUNDATION Contextualization and legal framework

Aware of its role and its social responsibility, Galp Energia has developed over the years an intense patronising activity sponsorship by supporting several social, cultural, sports and solidarity projects.

Following this commitment and with the desire of deepening this kind of action through a comprehensive and concerted response, Galp Energia promoted the establishment of a foundation, other than itself and exclusively not-for-profit. This motivation generated the Galp Energia Foundation in January 2009.

Formed by Galp Energia, SGPS, S.A., Galp Exploração e Produção Petrolífera, S.A., Petróleos de Portugal – Petrogal, S.A., Galp Gás Natural, S.A., Galp Power, S.A., and Galp Energia, S.A., the foundation is formally characterised as a private not-for-profit organisation. The purpose of the organisation is to support the development in different sectors, which will be explained below, performing both in Portugal or abroad.



THE PURPOSE OF THE GALP ENERGIA
FOUNDATION IS VERY
CLEAR: TO BE AN ENTITY
INTERVENING IN SOCIAL
RESPONSIBILITY, MOVING
TO SERVE THE COMMUNITY
AND LAYING ITS
FOUNDATIONS ON THE
PRINCIPLES OF INTEGRITY,
TRANSPARENCY
AND FAIRNESS.

# Governing bodies

The Galp Energia Foundation is internally organised with a Board of Founders, a Board of Directors, an Advisory Board and a Supervisory Board.

This structure effectively streamlines all the projects in which it operates, constantly evaluating their sustainability.

More information is available in the area of the Galp Energia Foundation at www.galpenergia.com.

# Mission and goals

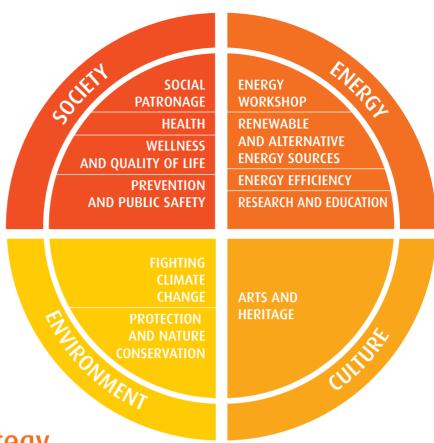
The purpose of the Galp Energia Foundation is very clear: to be an entity intervening in social responsibility, moving to serve the community and laying its foundations on the principles of integrity, transparency and fairness.

To fulfill its mission and in order to develop a sustainable social

dynamism, the following goals were established:

- a) To contribute to society regarding the environment, culture, education and science;
- b) To promote the conservation of the historical and technological heritage of the energy sector;
- c) To participate in energy research projects; and,
- d) To develop initiatives that minimise the impact of the energy activity on the environment.

To achieve these ambitious goals four main areas of performance were set out – Society, Energy and Knowledge, Environment and Culture. Each one of these areas has several guidelines:



# Performance strategy

This being the first sustainability report that integrates the activities of the Galp Energia Foundation, it is essential to understand that the performance strategy was designed for a period of three years. This multi-annual planning is due to the need to consolidate all the projects it undertakes, budgeting, monitoring performance and constantly checking the reflection of its performance on society.

From these assumptions, the Plan of Activities of the Galp Energia Foundation for the 2009-2011 period comprises a wide range of initiatives with features and a multi-annual execution, under its mission and goals.

The definition and development of the Plan had the following criteria in its origin:

- Selection of initiatives based on their relevance and inclusion in the statutory purposes and goals to be undertaken by the Foundation;
- · Identification of the activities and projects that by their nature are, in its outcome, the permanent provision of a public service to the

community in several fields.

Under the completion of such actions, besides launching its own initiatives, the Galp Energia Foundation established (and expects to establish) agreements with several institutions, with a view to cooperation in Society, Energy and Knowledge, Environment and Culture.

The Foundation will offer, at competitive prices, the public use of the auditoriums of Galp Energia's facilities in the Towers of Lisbon, for both the implementation of its own initiatives and the host of conferences, seminars and other manifestations of social or cultural interests held in collaboration with third parties.





# In society

In terms of society, the sub-fields of Social Support and Health Support were considered for the three-year period.

#### Social support

It translates into social support projects in order to contribute to the aid to needy groups of citizens at risk, namely:

- Programmes to combat poverty, social exclusion and social discrimination:
- Initiatives aimed at creating job opportunities and social reintegration of persons, families or groups at risk;
- Prenatal Support to teenagers and single mothers at risk;
- Initiatives in education, training and qualification for children and youth at risk.

#### Health

In this context, the activities to be developed could be of three types:

- Initiatives to raise the awareness of the population for the emergence and prevention of of high-incidence diseases (e.g., obesity, HIV, diabetes, hypertension);
- Programmes for research, training and development of measures of screening, vaccination, blood sampling and treatment of diseases.



THE GALP ENERGIA
FOUNDATION HAS
ESTABLISHED PROTOCOLS
WITH DIFFERENT
INSTITUTIONS
WITH A VIEW TO
COOPERATION IN THE
FIELDS OF SOCIETY,
ENERGY AND KNOWLEDGE,
THE ENVIRONMENT AND
CULTURE.

# **Energy and knowledge**

Under Energy and Knowledge, the following areas will be privileged in the first three years: Energy Workshop, Renewable and Alternative Energies and Energy Efficiency.

#### The Energy Workshop programme

It is based on the following strategy:

- Promotion of knowledge sharing on the energy sector, namely through research, restoration, preservation and promotion of the historic and industrial heritage of Galp Energia and the
- sector in Portugal and the possible creation of a Museum and a Documentation Centre;
- Development of publications on subjects related to the energy sector in Portugal.

#### Renewable Energies and Energy Efficiency

The strategy for effective performance and with synergies in society, allowing the involvement of other external actors, will focus on:

- 1. The organisation or support to forums, conferences and other events (e.g. launch of idea contests and training in these areas) with a view to debate and raise the community's awareness about the importance of developing renewable and alternative energy sources and foster energy efficiency;
- 2. The scholarships and prizes and

- support to research programmes and development of new technologies, cleaner solutions or solutions contributing to the reduction of energy consumption by promoting energy efficiency;
- Support to the development of programmes and initiatives to raise awareness for the rational use of energy;
- 4. Support in the preparation of studies and other publications on energy efficiency and renewable and alternative energy sources.

## The environment

In the environment, and as it was designed for other areas, the Foundation intends to play an important role in the sub-field of Conservation and Environmental Protection, outlining:

- Awareness initiatives of environmental education fostering the importance of values based on ecological principles;
- Initiatives for the preservation and recovery of protected and endangered species and other natural heritage, with a view to preserve biodiversity.



## **Culture**

In the cultural dimension, and particularly regarding Arts and Heritage, the priorities will be:

- To support institutions and cultural initiatives in the field of restoration / rehabilitation and preservation of the national historical heritage, music, art, painting, organisation of cultural events and other art events and film, audiovisual and literary production;
- To support conservation projects and promotion of works of art, namely the collection donated to the Galp Energia Foundation, and other initiatives of documentary, artistic and historical heritage conservation;
- 3. To foster artistic training and assign scholarships for students from art schools.

# **ACTIVITIES**

In 2009, several projects were conducted, although the Galp Energia Foundation is a new institution. Endowed with a really positive energy, the Foundation knew how to find new challenges in order to strengthen its relationship with society. The projects undertaken by the Foundation, which illustrate the commitments made by each performance area, are presented.



SUPPORTING THE
DEVELOPMENT OF
NATIONAL PARALYMPIC
SPORT WAS ONE OF THE
MAJOR INITIATIVES FOR
SOCIAL INNOVATION
FOUNDATION.

# Society

Support to **Raríssimas** – the Portuguese Association of Mental and Rare Illness in the construction of Casa dos Marcos. This space intends to become a centre of competence and reference in the clinical, social and educational fields of rare diseases, with occupational activities for youth and adults and a permanent telephone line for information and assistance to families and caregivers, 24 hours a day;

Preparation project for the London 2012 Paralympic Games, which con-

sists of the support given to the Paralympic Committee of Portugal in creating conditions of quality and dignity to the preparation and competition of the athletes of adapted sports (representing different areas of disability), while simultaneously helping the development of paralympic sport in Portugal;

Accession to the patronage campaign of 100 Patrons United for Diabetes, developed by the Ernesto Roma Foundation and the Protective Association of Diabetic of Portugal, with the aim of enabling the Ernesto Roma School of Diabetes, intended for training health professionals and patients so that they know how to deal with diabetes on their day-to-day and the ways of treating this chronic disease;

Accession to the **EPIS - Businesses for Social Inclusion** – in its activity of fighting the dropout and failure of students in the 3<sup>rd</sup> cycle of schooling based on a new methodology in Portugal to train young people and their families through the work developed by a wide network of professional mediators.



# The Energy and the Knowledge

Started in 2004, the main goal of the Galp Lives project is to rescue the company's history through the testimony of its protagonists - the employees. "The Galp Lifes" was developed and strengthened this year by the Galp Energia Foundation.

Thus, registration activities in audio and video, collecting photographs, old documents (from textbooks, articles, memoranda, among others), corporate videos and commercials and brochures proceeded, enriching the Galp Energia's current historical collection. Part of this collection is available in the Galp Energia's Virtual Museum launched in 2005 in the electronic platform http://vidas.galpenergia.com. Thus, the general community can get to know the identity, the culture and the history of Galp Energia.

Also for the awareness of the importance of preserving and promoting the historical memory within the energy sector, the Foundation is dedicated not only to the collection, cataloging and retrieval of documentary and photographic industrial estate, but also of parts and historical objects.

**Eco Schools** project - This platform, which has been running since 2005 jointly with the ABAE (Blue Flag Association for Europe), aims to contribute to environmental education under social responsibility, opening in the Galp Lives virtual museum described above a door to the future, aimed at children and young people who want to learn about issues related to Energy.

Each year contests for school projects on the current use of energy as energy efficiency, sustainable mobility and



climate change are launched, always with a view to promote behavioural change. The competitions comprise the preparation of posters, comic books, the construction of prototype cars and boats running on solar energy, the design of software applications for the calculation of the ecological footprint and also the monitoring of energy consumption in schools. The project also includes a web portal, launched in 2006, especially dedicated to the school community - the "Energy School" - which offers a set of teaching materials, promoting several reflections on the different types of energy, particularly on its uses, advantages and disadvantages.

In addition to maintaining this web portal and the promotion of competitions, other measures to reinforce and promote the project to the school community have been developed, of which we highlight Teacher Training, subordinate to the themes of the work carried out to the contest.



CONSCIOUS OF THE IMPORTANCE OF PRESERVING AND DISSEMINATING THE HISTORICAL MFMORY UNDER THE SCOPE OF THE ENERGY SECTOR, THE **FOUNDATION** IS DEDICATED NOT ONLY TO THE COLLECTION. CATALOGUING AND **RECOVERY OF** INDUSTRIAL DOCUMENTS AND PHOTOGRAPHS, **BUT ALSO HISTORICAL** ITEMS AND OBJECTS.



# bikeshare

EXD'09 Tour by Galp Energia

## The Environment

Recognising the importance of developing initiatives of conservation and enhancement of biodiversity, the Galp Energia Foundation pursues a proactive strategy in this area by supporting the implementation of the M@rbis-NATURA 2000 Project - Information System for Marine Biodiversity, approved under the Action Plan of the Interministerial Commission for Sea Affairs (2008/2020).

This project is aimed at the organisation and systematisation of the existing scientific information on the marine biodiversity of the oceans under national jurisdiction including the creation of an integrated information system on marine biodiversity, databases and a network of information sharing between institutions.

BIKESHARE – In the continuation of the strong commitment of the Galp Energia Foundation in raising the community's awareness to environmental issues and promote more sustainable urban mobility, Experimenta Design 09 (Biennial that occurred from September to November) received 40 bikes distributed by the several areas of the event that were available to visitors to travel freely in the exhibition. The sharing concept was also boosted, given that 20 of those bikes had two saddles.

These bikes were previously subject to an artistic intervention exclusively made by young designers selected from the Institute of Arts and Design (IADE) under an approach to approximate the academia to the business world.

## Culture

Agreement with the IMC (Institute of Museums and Conservation) under the preservation of national heritage - which includes the full restoration and rebuilding of the historic Sala D. João VI at the Palácio Nacional da Ajuda, under the celebrations of the 200 years of the Portuguese Royal Family's travel to Brazil. It was in this building that the Galp Energia Foundation was officially presented to the community in October;

Patronage to the **Educational Service 2009 of the Casa da Música Foundation**, with the aim of encouraging artistic education and the access of several audiences to musical culture as well as the promotion, dissemination and continuation of cultural and training activities in the field of music activity;

Participation in **Experimenta Design 2009** - Since the slogan "It's about

time" was the main theme of the biennial event, the Galp Energia Foundation decided to focus on initiatives that also endured, not focusing only on expository and institutional intervention.

It's about time to be positive was the concept created by the Galp Energia Foundation to boost two initiatives in this event that strengthen the connection of the Galp Energia Foundation to the world of art and design. In addition, it also helps to promote energy efficiency and environmental sustainability through the provision of bicycles - Bikeshare - and the launch of a contest for the project named "Bridges to a more positive future", which is presented below;

Participation in IASI - International Institute for Asian Studies and Interchange, in the promotion and financial



support under patronage, to the "East Timor Archive and Library" project. This project consists of organising, cataloging, scanning and updating, by 2011, several materials and documentation on East Timor, Indonesia and the region in order to transfer this collection to East Timor within 10 years;

The Galp Energia Foundation supported several other institutions under cultural initiatives including the **Museum of the Douro**, with a view to preserving the cultural and natural heritage of the Douro region, to perform an active part

in the socio-cultural development of the region and to develop research on the region and its heritage;

Support to the Exhibition of the collection of the poet Alberto Lacerda, promoted by the Mário Soares Foundation. This **exhibition is part of the estate that the poet Alberto de Lacerda** left his universal heir, the writer and journalist Luís Amorim de Sousa, his great friend and companion in London and Boston. This estate is now deposited in the Mário Soares Foundation, where it is being properly handled, cleaned and inventoried.



# **Cross-cutting activities**

Of the projects undertaken during 2009, some, given their scope, fall into at least two areas, aggregating the strategies outlined earlier in the year for the several sectors:

Agreement with the Municipality of Lisbon with a view to fund the construction of a **cycling route in Lisbon** (Telheiras - Benfica cycleway). This project is aimed to raise the population's awareness and support the preservation of the environment, while promoting health and sport in the community. The section, which is located in a residential area near schools and offices, has a wide potential use and the daily circulation between home and work and also leisure is anticipated, connecting parks and gardens;

Contest of ideas of Sustainable Mobility developed in partnership with the MAOTDR – Ministry of the Environment and Spatial Planning and the Regional Development, and the APA - Portuguese Environment Agency jointly with local authorities. The contest, under the theme "Ideas to the air for a project to stay", intended to reward the permanent measurement project that more efficiently promoted good air quality in the cities, exploring the issue of urban mobility under sustainability. The

online vote awarded the Municipality of Almada at the end of September with the Bicla Tejo project;

Competition "Bridges for a more positive future" set out on the day of Experimenta Design 2009 - Aimed at Portuguese and foreign professional architects for designing a new sustainable mobility equipment in Lisbon.

The launch of this competition was aimed at the future construction of a cycling and pedestrian bridge over 2° Circular in order to ease the passage of bicycles and pedestrians while boosting urban circulation of low environmental impact. Additionally, it will a legacy to the Portuguese capital and its inhabitants.

Besides the creativity and inventive power shown in proposals, the evaluation of the projects also focused on the architects's ability to incorporate energy efficient solutions as well as the sustainability of the selected materials. The top three proposals were awarded and there were two honourable mentions.





## **APPENDIX I. External verification**

#### Independent verification of the 2009 Sustainability Report

To the Board of Directors of Galp Energia, SGPS, S.A.

#### Introduction

We have been requested by Galp Energia, SGPS, S.A. (Galp Energia) to proceed with the independent verification of the "2009 Sustainability Report" (Report). The verification was carried out in accordance with instructions and criteria defined by Galp Energia, stated and disclosed in the Report, and with the principles and coverage described in the Scope.

#### Responsibilities

Galp Energia's Board of Directors is responsible for the preparation of the Report and disclosure of performance information presented and its evaluation criteria, as well as the internal control systems, collection aggregation and validation processes and reporting of the same. Our responsibility consists of preparing a report containing our opinion of the adequacy of that information based on the independent verification procedures that we have carried out, and by reference to the agreed terms. We assume no liability for any other purpose before any other persons or organisations.

#### Scope

Our review procedures were planned and executed in accordance with International Standard on Assurance Engagements 3000 (ISAE 3000), and with reference to the Global Reporting Initiative, version 3 (GRI3) in order to achieve a moderate degree of certainty about the adequacy of the information contained in the Report, as well as supporting systems and processes. The scope of our procedures is narrower than an audit and, consequently, the level of reliability is lower, consisting of inquiries and analytical tests and some substantive work.

In relation to verification and self-assessment made by management of levels of compliance of the GRI3, our work consists of verifying consistency with the GRI's Reporting Framework Application Levels requirements. Part of the information required by the GRI3 is available in the "2009 Report and Accounts" and in the "2009 Governance Report", documents that should be consulted to obtain a full understanding of the activities developed, governance of society and performance of the Group.

During this independent verification, our procedures consist of:

- (i) Questions to management and key leaders of the areas under consideration to understand how the information system is structured and the sensitivity of the actors to the subjects included in the report;
- (ii) Identifying the existence of internal management processes leading to the implementation of economic, environmental and social responsibility policies;
- (iii) Verifying on a sampling basis the efficacy of the collection, aggregation, validation and reporting systems and processes that support the performance information mentioned above, through calculation and validation of the data reported;
- (iv) Confirming the observation by certain operational units of performance information collection, aggregation, validation and information reporting instructions:
- (v) Implementing, on a sample basis, some procedures that embody the information by obtaining evidence on the information reported;
- (vi) Comparison of technical data relating to emissions of greenhouse gases and consumption of primary energy validated by the independent verifier under the EU ETS (European Union Emission Trading System);
- (vii) Comparison of the financial and economic data with that shown in the "2009 Report and Accounts" audited by the external financial auditor, to gauge the external validation of the information reported;
- (viii) Comparison of the data relating to refineries with the values previously verified by the external auditor;
- (ix) Analysis of material topics included in the report based on the principle of relevance provided in standard and AA1000APS and in the GRI3, by comparison of the content of the Report with the content of the Sustainability Reports of companies in the sector;
- (x) Confirming the existence of data and information required to reach level B, declared by Galp Energia, for the application of the GRI3 levels.

The environmental data shown in the table "Operational Data" contained in the Report were not included in this verification process.

#### **Conclusions**

Based on the work undertaken in accordance with the terms of reference and the Scope, nothing has come to our knowledge that leads us to conclude that the information collection, aggregation, validation and reporting systems and processes contained in the Report do not function appropriately and that the information disclosed is not free of material misstatement.

Based on our verification of the Report and the GRI3 Directives, with the assumptions included in the scope, we have concluded that the Report includes the data and information required for the level B set out in the GRI3.

Lisbon, 15 April 2010

PricewaterhouseCoopers & Associados, SROC, Lda. represented by



# **APPENDIX II. Indicators GRI**

GRI 3		PAGE	
1	Strategy and Analysis		
1.1	Message from the President	Pages 7,8 and 9	
1.2	Description of the main impacts, risks and opportunities	Pages 13, 22, 23, 32, 46, 47	
2	Profile of the Organisation		
2.1	Name of the organisation	Page 12	
2.2	Main brands, products and/or services	Pages 28 and 29	
2.3	Operational structure of the organisation	Pages 18 of the RG and pages 26-73 of the RC	
2.4	Location of the headquarters On the back cover	On the back cover	
2.5	Countries in which the organisation operates	Pages 28 and 29	
2.6	Type and status in law of the organisation	Pages 132 of the RC	
2.7	Markets	Pages 28 and 29	
2.8	Size of the organisation	Pages 16, 28, 29 and 109	
2.9	Significant changes	Pages 15 and 22	
2.10	Awards received	Page 15	
3	Report Parameters		
3.1	Period to which the report relates	Page 12	
3.2	Date of last report	Page 12	
3.3	Frequency of report	Page 12	
3.4	Contacts	On the back cover	
3.5	Process for defining the content of the report	Page 12	
3.6	Scope of the report	Page 12	
3.7	Limitations on the scope of the report	Pages 28 and 29 For the purposes of this report, the information provided is limited to the business developed by companies whose participation is equal to or greater than 50%	
3.8	Report on other entities	Page 42	
3.9	Criteria and bases for calculation	Page 12	
3.10	Explanation on reformulations	No reformulations or significant changes occurred in comparison to previous reports	
3.11	Significant changes in relation to previous reports	Pages 15 e 22	
3.12	GRI correspondence table	Annex II	
3.13	External verification	Page 12	
4	Corporate Governance, Commitments and Involvement	To avoid redundancy, the Governance information is available in the 2009 Corporate Governance report at http://investor.relations.galpenergia.com	
4.1	Corporate Governance structure	Pages 19, 40, 59 and 60 of the RG	
4.2	Indicating whether the Chairman of the Board of Directors has executive functions	Pages 15, 40 of the RG	
4.3	Independent and non-executive members of the Board of Directors	Pages 40 of the RG	
4.4	Mechanisms that allow shareholders and employees to submit recommendations or guidance to the Board of Directors	Pages 24 of the RG	
4.5	Relationship between the remuneration of members of the Board of Directors and Managerial Positions and the performance of the organisation	Pages 43, 44 of the RG	
4.6	Conflicts of Interest	Pages 15,18-20 of the RG	
4.7	Qualifications and competencies	Pages 72-76 of the RG	
4.8	Missions, values, codes of conduct and principles	Pages 13, 14	
4.9	Processes of the Board of Directors for supervising the management of economic, environmental and social performance and risk management	Pages 20, 21 of the RG	
4.10	Processes for evaluating the performance of the Board of Directors	Pages 36-39, 43, 44 of the RG	
	Commitments to external initiatives		
4.11	Explanation of how the principle of precaution is approached by the organisation	Pages 16 and 17	
4.12	Charters, principles or other external initiatives of an economic, environmental and social nature that the organisation subscribes to or defends	Page 99	
4.13	Significant participation in domestic/international defence associations and/or organisations	Pages 78 and 79	
4.14	List of the groups that constitute the interested parties	Consult page 80 of the 2005-2006 SR	
4.15	Process of identifying and selecting the interested parties	Page 12	
4.16	Approaches used to involve the interested parties	Pages 55, 56, 112, 113, 126 e 127	
4.17	Key issues and concerns identified through involvement of the interested parties	Pages 112, 113, 126 and 127	

Pages 22-25, 37-40, 43, 46, 48, 49-52, 54, 57, 68, 73

Pages 16, 17, 98, 99 and 102

Page 134 and 163 from CR

Page 16

Page 33

Page 18 and 19

**Economical Performance** Management, Goals, Performance

EC1

FC2

EC3

EC4

EN26

and extent of impact mitigation

Policies approachs and Contextualization

organization's activities due to climate change

Direct economic value generated and distributed, including revenues, operating

costs, employee compensation, donations and other community investments,

retained earnings, and payments to capital providers and governments Financial implications and other risks and opportunities for the

Coverage of the organization's defined benefit plan obligations

Significant financial assistance received from government

## APPENDIX III. ACRONYMS

**ACT** – Acordo Colectivo de Trabalho (collective bargaining agreement)

**AMEPETROL** – Associação das Empresas do Sector Petrolífero de Moçambique (Mozambique's oil trade association)

AML – Área Metropolitana de Lisboa (Metropolitan Area of Lisbon)

APETRO - Associação Portuguesa de Empresas Petrolíferas (Portugal's oil trade association)

APQ - Associação Portuguesa para a Qualidade (Portuguese Association for Quality)

BATs - Best Available Techniques

**BCSD** - Business Council for Sustainable Development

**CAPEX** – Capital expenditure (or investment spending)

CCIPA – Câmara de Comércio e Indústria Portugal-Angola (Portuguese-Angolan Chamber of Commerce)

**ccs** - Carbon capture and storage

CCT – Comissão Central de Trabalhadores (Central Workers' Council)

**CERES** - Coalition for Environmentally Responsible Economies

**CLC** - Companhia Logística de Combustíveis

CO<sub>2</sub> - Carbon dioxide

**CONCAWE** – European Association for Environment, Health and Safety in Refining and Distribution

**COTEC** – Associação Empresarial da Inovação (entreprise forum for innovation)

**CSR** - Corporate Social Responsibility

E&P - Exploration & Production

EBITDA - Earnings before interest, taxes, depreciation and amortization

**EC** – European Commission

**EQS** – Environment, Quality and Safety

**EU ETS** – European Union Emissions Trading Scheme

**EUROPIA** – European Petroleum Industry Association

FAME - Fatty Acid Methyl Ester

FAR - Fábrica de Aromáticos (aromatics plant)

**GEG** – Greenhouse gases

GESB - Galp Exploração Serviços do Brasil (Galp Exploration Services of Brazil)

**GESTES** – Galp Energia's filling stations

GIC - Grandes Instalações de Combustão (large combustion plants)

**GRI G3** – Global Reporting Initiative, third issue

**HVO** – hydrogenation of vegetable oils

IAQ - Indoor Air Quality

IDI - Investigação, Desenvolvimento e Inovação (Research, Development and Innovation)

IPQ – Instituto Português da Qualidade (Portuguese Quality Institute)

IRC – Imposto sobre o Rendimento das Pessoas Colectivas (Company income tax)

**IRG** - Instalações Receptoras de Gás Natural (Natural Gas-receiving Plants)

IRRC – Investor Responsibility Research Center

ISP - Imposto sobre os Produtos Petrolíferos (tax on oil products)

ISQ - Instituto de Soldadura e Qualidade (Institute of Welding and Quality)

ITG – Instituto Tecnológico do Gás (Technological Institute of Gas)

ICL – latropha curcas Linnaeus

**km** – Kilometre

kton – Thousand tonnes

LNEG – Instituto Nacional de Engenharia, Tecnologia e Inovação (Portuguese Institute for Engineering, Technology and Innovation)

LPG - Liquefied Petroleum Gas

mbopd - Thousand barrels of oil per day

MMMBBI - One billion barrels

MMSCF - Million Standard Cubic Feet

**MWh** – Megawatt Hour

NG - Natural Gas

NGO - Non-Governmental Organisation

NOx - Nitrogen oxides

**p.p.** – Percentage point

PALOP – Países Africanos de Língua Portuguesa (African Portuguese-speaking countries)

PHV - Plug-in

PNAC - Plano Nacional para as Alterações Climáticas (Portuguese plan for climate change)

PNALE - Plano Nacional para Atribuição de Licenças de Emissão (Portuguese plan for allocation 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

SA - Service Area

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

**UE** – European Union

EDITION



TRANSLATION



DESIGN AND CONCEPTION

**STRAT**DESIGN>

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