

Minimizing our environmental impact

Our commitment to the environment is shown in the ever-expanding efforts we make to prevent impacts from our operations. To achieve this, we have adopted several measures such as impact identification, analysis and mitigation, improvement in the design of installations, processes and management systems, as well as continual investment in the best available technology.



Demanding environmental management

Our strategic commitment to the environment

For Repsol, looking after the environment and protecting biodiversity are essential in the management of our activities. Our strategic concept assumes and reaffirms this principle with the commitment to contribute to sustainable development and respect for human rights, the environment, and safety.

In order to achieve this, substantial commitment is required at all levels in our organization and, since 2005, among the functions of the Audit and Control Committee of the Board of Directors is knowing and directing the policy, the guidelines, and the objectives of the company in the area of safety and environment.

Our Executive Committee also sets out the objectives and the strategic safety and environment lines, which are the foundations for drafting the objectives and action plans of all the company businesses. These plans involve the action required for the continual improvement of management, investments and associated expenses, and the adaptations to new legislative requirements. In addition, the annual objectives established for the programs for the minimization of the impact on the environment form part of the annual objectives of the Business Units.

Our commitment to the environment is reflected in our management model

Our environmental principles are defined in the Health, Safety and Environment Policy, applicable throughout the company. One of these principles is to incorporate environmental, health, and safety criteria throughout the entire project cycle, in order to minimize the environmental impact. This is achieved through the safety and environment management system, based on a set of requirements, procedures, and guidelines that are continually adapted and updated in accordance with international best practices.

More information on environmental,
health and safety management
issues and actions
at environment.repsol.com

Audits demonstrate the effectiveness of our management system

Every year we develop a safety and environment plan that includes external audits (voluntary and/or legal for certification) and internal audits, such as 'crossed' audits performed by qualified personnel from different business units who audit one another. See table *Safety and environment audits in 2010* ⁽³⁶⁾.

Safety and environment audits in 2010	Number
Internal	406
Certification	149
External (legal)	566
TOTAL REPSOL	1,121

In addition, we have worked to achieve certification of our centers in accordance with the international ISO 14001 standard for environmental management systems. 100% of our refinery and chemical industrial centers are certified to the standard, as are a growing number of centers related to other activities of the company. During 2010, we continued to increase the number of certified centers, obtaining 12 new certifications. See table *Principal ISO 14001 certifications in 2010*.

More information on certificates at
certificatesearch.repsol.com

PRINCIPAL ISO 14001 CERTIFICATIONS IN 2010		
Activity	Certified ISO 14001 centers	%
Refining	9 of 9	100
Chemicals	8 of 8	100
E&P	16 of 18	89
LPG	34 of 54	63
Technological centers	2 of 2	100
Lubricants and Specialty chemicals	17 of 17	100

We bolster environmental protection through awareness and training programs

In 2010, 1,190 employees received 8,446 hours of training in environmental matters.

ENVIRONMENTAL TRAINING 2010 ⁽³⁷⁾			
	Hours	Persons ⁽³⁸⁾	Rate of coverage ⁽³⁹⁾
Spain	3,301	551	3%
Argentina	2,635	343	2%
Other Latin America ⁽⁴⁰⁾	2,165	263	5%
Rest of the World ⁽⁴¹⁾	346	33	2%
TOTAL	8,446	1,190	3%

(36) The internal audits made by own personnel from each center are not included.

(37) The data includes training for our regular and temporary personnel. This does not include the training of contractor personnel.

(38) Persons attending courses.

(39) Percentage of personnel who have undergone training as compared with the entire staff.

(40) Bolivia, Brazil, Colombia, Ecuador, Peru and Venezuela.

(41) EEUU, Libya, Norway, Portugal and Trinidad and Tobago.

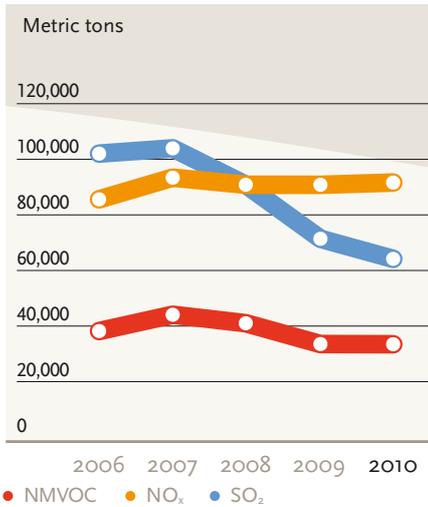
Environmental risk analysis

In 2010, the company approved a new corporate standard for safety and environmental risk management for our industrial assets to ensure that the risks that might affect the safety of persons, the installations, and the environment are identified, studied, and minimized throughout the entire lifecycle of our industrial assets. The requirement establishes the environmental studies to be complied with at each stage of the lifecycle, based on the risks associated with each asset. Moreover, we are developing a similar corporate standard to establish common guidelines for assessing the environmental, social, and health impact patterns in all company operations.

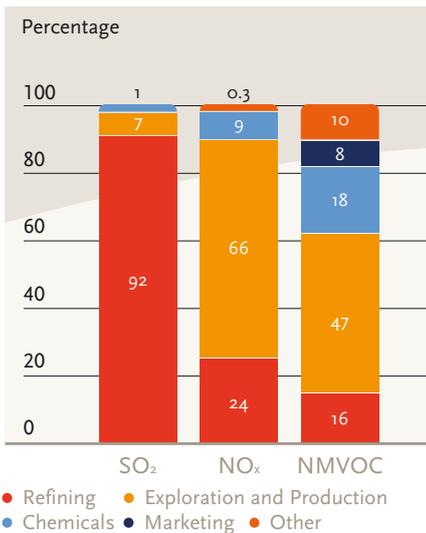
In recent years, we have worked to develop quantitative methods to evaluate environmental risks in operations as a tool to better evaluate and prevent such risks, and since 2009, these have been applied in several of our industrial complexes, detailed below:

- In 2010 we undertook studies on the environmental baseline and the evaluation of environmental risks at three refineries in Spain (A Coruña, Cartagena, and Puertollano). In evaluating environmental risk, we ranked scenarios in terms of their likelihood, and we made an inventory of actions designed to prevent or mitigate the environmental risk. As a result, we have developed processes for modeling sites, identifying scenarios for analysis, specifying the reasons and the conditional probability factors, ranking these scenarios, and specifying the actions to prevent or mitigate risk. We also completed our evaluation of environmental risk in Tarragona, including deployment of a computer tool. Furthermore, progress in our evaluation of environmental risk continues at Muskiz.
- The Spain Direct Sales business units have implemented an environmental control system for our own diesel fuel (Repsol Directo) in all its installations based on ground-level monitoring of the installations to assess the state of each installation and manage the assets correctly.
- At Spain Direct Sales, together with the Service Stations Spain business unit, we carried out a project to draw up a risk evaluation system in accordance with the Law on Environmental Responsibility at diesel distribution bases (DDCC) and at installations for supplies to ports. Customers, business associations (National Confederation of Commercial Distributors), operators (Repsol, Cepsa, Galp), and representatives of the sector (DDCC Repsol). The objective is to define a simple, cost-effective model of risk analysis common to the whole sector, and submit this to the Ministry of the Environment and the Rural and Marine Environment, through the Association of Petroleum Operators, for its review and approval.

Trends in emissions of SO₂, NO_x, NMVOC



Emissions of SO₂, NO_x, NMVOC by activity



More information on our air emissions reduction programs and actions at casestudies.repsol.com

Atmospheric emissions

Our main air emissions⁽⁴²⁾, are greenhouse gases, sulfur dioxide (SO₂), nitrogen oxides (NO_x), volatile non-methane organic compounds (NMVOCs) and, to a lesser extent, carbon monoxide (CO) and particulate matter.

Our main sources of emissions of SO₂ and NO_x are the combustion processes in refineries and exploration and production activities. In addition, there are fugitive emissions of methane and VOCs mainly in refining, in the operations for the extraction of crude oil and gas, in storage terminals, and in service stations during the handling of gasoline.

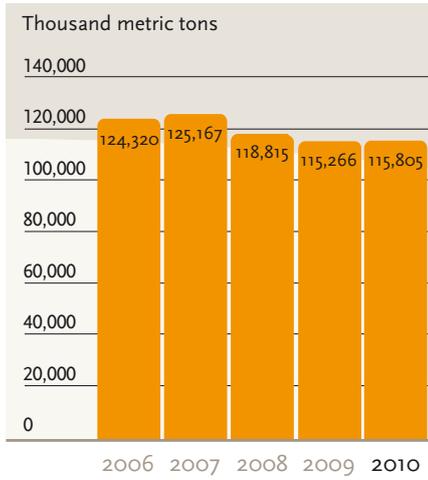
In 2010, our emissions of SO₂ were reduced by 13% due to reduced activity and scheduled work stoppages in Spain, principally in Puertollano and at Muskiz. The emissions of NO_x and VOCs remained at levels similar to the previous year.

During 2010, we carried out several programs to minimize emissions to air, including:

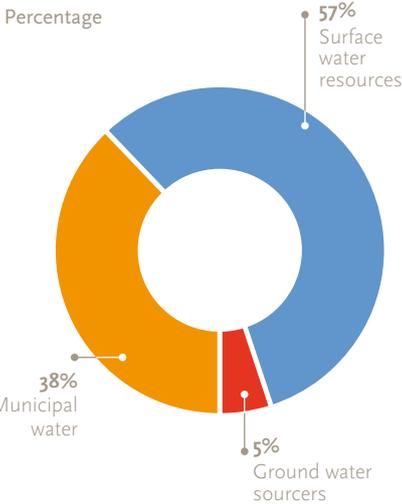
- Continuing our programs to detect and eliminate leaks with Leak Detection and Repair (LDAR) technologies or similar, at nine refineries and at four chemical plants.
- We completed our own methodology for the inspection of leaks, through the combined use of infrared cameras FID detectors. This involves hybrid LDAR methodology, which was successfully tested in 2009 at the Tarragona Refinery and used in 2010 in the A Coruña Refinery, achieving a leak reduction of 40%. The project will continue in 2011 with the detailed quantification of the potential benefits of repairs, which may vary from €10 to €100,000 per year. At the same time, we will undertake a study of the feasibility of this methodology in the industrial chemical complexes in Europe and in our LPG factories.
- Reducing our particulate emissions from the FCC of the Petronos Refinery (Spain) through the use of third-stage separators. During the 2010 work stoppage, the cyclons were replaced by 75 state of the art microcyclons. We took samples to evaluate the environmental improvement achieved after this modification, which show a reduction in the concentration of particulates, from 80-90 mg/Nm³ to 50 mg/Nm³.

(42) Information on our greenhouse gas (GHG) emissions may be found in the Chapter on Encouraging a low carbon strategy.

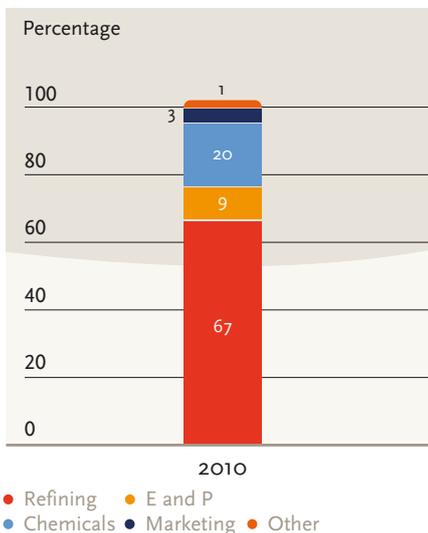
Trends in external water withdrawal



Sources of external water withdrawal



External water withdrawn by activity



Water management

We are aware of the risks the company is exposed to in the use of water at our installations. Therefore, as a part of our annual objectives, we establish programs to optimize its rational use and conserve its quality, with more intense action in sensitive and water-stressed areas. Furthermore, we give our full attention to the numerous water initiatives being developed concerning water, including actively participating in a water working group in the sector.

Most of our water consumption relates to refining and chemical activities. During 2010, we collected 115,805 metric tons, an amount similar to that used in 2009. Thanks to our efforts, in 2010 we managed to reutilize 15,966 metric tons of water, 14% of the water collected.

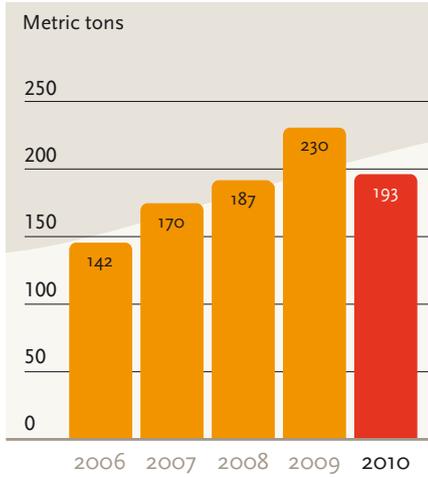
Our main water sources are surface water resources (57%) and the municipal water (38%), and to a lesser extent ground water sources (5%).

OUR ACTIONS TO IMPROVE WATER MANAGEMENT IN REFINERIES IN SPAIN

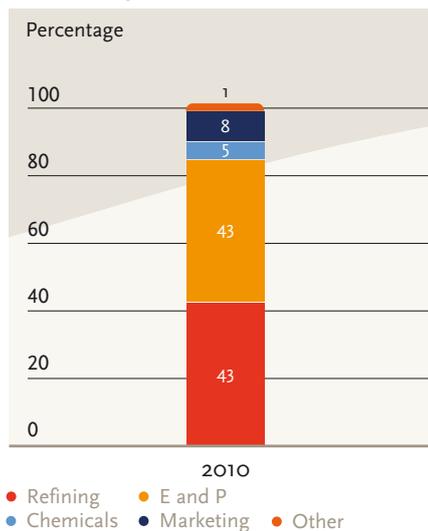
The Refining Operating Improvement Group (GMO) in Spain continues to make progress in developing programs to optimize water consumption. Our action plans for 2010 focused mainly on water reuse, increasing the use of recycled water, and improving awareness of fresh water consumption. We have also invested in remodeling and improving installations toward these aims.

- Puertollano refinery: We took action to prevent possible breakdowns, achieving savings in maintenance costs and an operating improvement of around €400,000/year. We made modifications at the processing plant to increase airing capacity (from 12% to 17%), resulting in more effective purification and reduced energy consumption in the air supply blowers and reduced emissions of VOCs from biological processing. In addition, new emergency ponds were built to prevent overflows in the event of heavy rain. In 2010, the last of the four ponds entered into service with a volume of 3,500m³, capable of collecting 104,000m³, which, added to the 23,000m³ which the installation already had, makes a total of 127,000m³.
- A Coruña refinery: We developed improvement plans to optimize the water recycled water from tertiary processing, guaranteeing its quality. Moreover, we took action to reduce water consumption through awareness and the search for opportunities for savings, achieving savings of 134,499m³ as compared to 2009, and financial results of approximately €87,000/year.
- Muskiz refinery: We undertook the first phase of remodeling our water processing installations, increasing capacity, reducing odors, and improving the quality of the water processed. We are planning a second phase to update the installations in the next two years.
- Cartagena refinery: We took action to increase our use of recycled water in hydraulic tests on tanks, which means a reduction in water consumption of 1,500 m³/day and savings estimated at €130,000.
- Tarragona refinery: We launched campaigns to reduce waste through locating possible leaks in underground systems, achieving a reduction in the flow of spills amounting to 5m³/h. Furthermore, we are planning additional action, including modifications to the DAF to reduce spills and to replace fresh water with recycled water from the coking plant, with savings estimated between €76,000 and 147,000/year in the latter case. In addition, we remodeled the airing system for biological processing to eliminate odors released.

Trends in hydrocarbons discharged to water



Hydrocarbon discharge by activity



More information on the optimization of water consumption programs and other actions to improve the quality of discharged water at casestudies.repsol.com

WATER SAVINGS IN LPG TANK RESISTANCE CHECKS

In 2010, Repsol began to use resistance checks through acoustic emissions to test that LPG tanks are suitable for service, replacing the traditional hydraulic tests. These entailed filling the tank with water up to a pressure of 29 bar and subsequently testing the tank’s structural resistance at this pressure for a period of 10 minutes.

The new technique consists of the use of a mobile laboratory, which extracts the liquid gas from the tanks, vaporizes it, and puts it back as vapor, gradually increasing the pressure in the tank. The increase in pressure on the steel of the tank makes it emit ultrasonic waves, which are registered by microphones placed on the surface of the tank. Readings are studied by an expert who uses software to determine the tank’s integrity for service. This method makes it possible to locate defects, for instance from cracks or corrosion, with precision. It also reduces wasteful consumption of water, does not require construction work or the interruption of supply to customers, and is faster than the traditional method.

Improving discharged water quality

We manage the quality of our discharges using advanced technologies for processing, controlling, characterizing, and separating the flows in order to minimize discharge and the contaminant load.

The main contaminants discharged at our facilities are: hydrocarbons, suspended solids, and organic matter likely to undergo oxidation, known as Chemical Oxygen Demand (COD).

During 2010, the discharge of hydrocarbons was reduced by 16%, due mainly to improvements in the effluent plants at the Tarragona Refinery in Spain and at the La Pampilla Refinery in Peru. The improvements in water processing at these refineries and reduction in activity at the chemical plant in Tarragona led to a reduction in suspended solids of 11%. The COD was 8% higher than in 2009, due mainly to problems at the exploration and production effluent processing plant in Trinidad and Tobago.

During 2010, we launched a campaign to adapt three refineries in Spain (A Coruña, Muskiz, and Tarragona) to the Framework Directive on Water, and verified that all of the installations meet the legal limits established on priority substances in discharges. In 2011, we will undertake a more extensive study to cover a greater number of substances and to include the five refineries in Spain.

Waste management

At Repsol we endeavor to minimize our generation of waste and improve its management throughout the lifecycle of our activities. We adopt measures aimed at improving internal waste management, developing programs to minimize waste at all stages of the process, encouraging reuse and recycling, and the replacement of raw materials and additives.

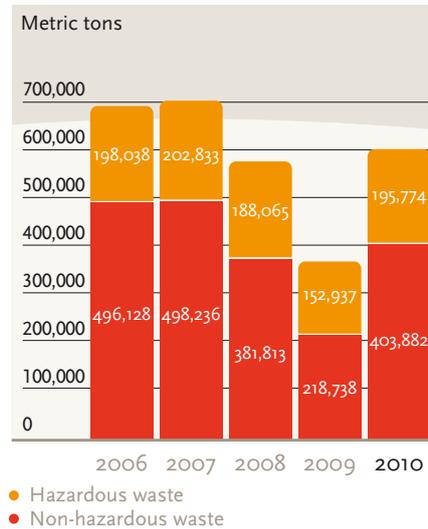
The majority of our waste arises from our exploration and production activities. Among these, largest contributor is the drilling mud, soil contaminated with hydrocarbons, and the mud from cleaning the bottom of tanks.

During 2010, there was an increase in our hazardous waste of 85% compared to 2009, due mainly to the final disposal of waste from contaminated soil processing in exploration and production activities, mainly in Neuquén in Argentina.

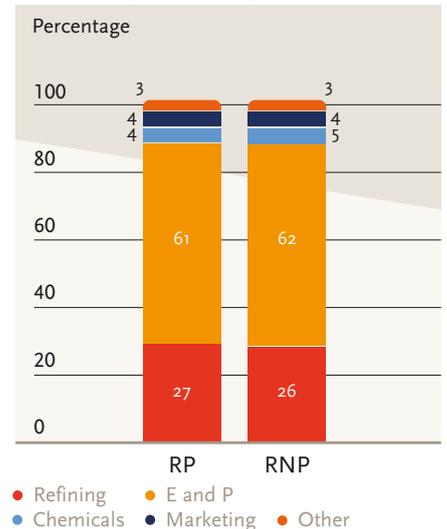
In addition, our non-hazardous waste increased by 28% as compared to the previous year, due, to a great extent, to the stoppages at the refineries in Spain, mainly at Muskiz, and the drilling work in the exploration and production activities in Brazil.

During 2010, 66% of the hazardous waste and 19% of the non-hazardous waste we dealt with was destined for reuse and recycling.

Trends in hazardous and non-hazardous waste



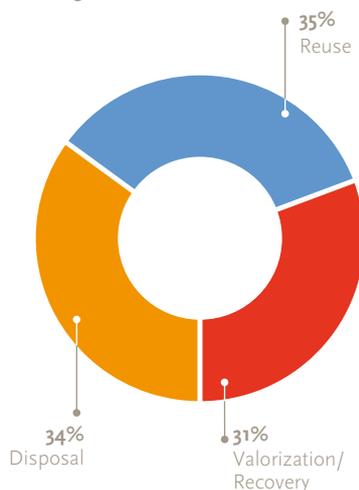
Hazardous and non-hazardous waste by activity



We took action during 2010 to improve and optimize waste management, including the following:

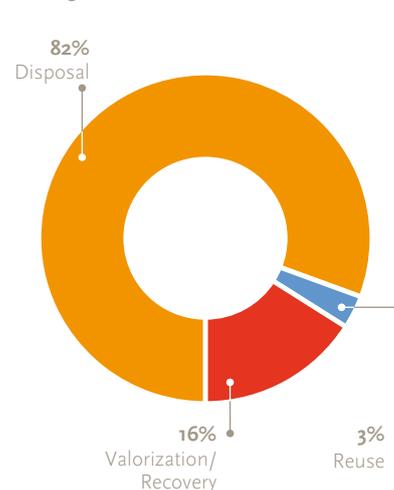
Hazardous waste management in 2010

Percentage



Non-hazardous waste management in 2010

Percentage



- Implementing integral waste management programs at the exploration and production business units of YPF in Argentina, minimizing waste production at origin, maximizing recycling and reuse, and safely disposing of waste with no value. Integral waste management is now functioning at El Portón and in Loma de la Lata. This type of management makes it possible to reduce the environmental impact and develop new products from recycling, donating some of these to the community, such as ecological firewood and organic soil amendments.
- Working at the Lubricants and Specialty Chemicals business unit in Spain to minimize the impact of our lubricant oils on the environment, by increasing use of renewable raw materials in the manufacture of our products. Moreover, we are working to achieve the ecological label (Eco-label) for the Bio Telex line, a biodegradable liquid with excellent lubricating qualities. The Eco-label is awarded to products with the best environmental performance.

More information on programs and other action regarding waste management at casestudies.repsol.com

Prevention of spills

At Repsol, we adopt the most advanced techniques for preventing and remedying pollution, for managing accidental spills, and for maintaining our installations.

Most spills that take place in the oil and gas industry result from exploration and production activity.

In 2010, the amount of hydrocarbons spilled decreased by 7% compared to 2009, although the number of spills increased by 22%. If we do not take into account the spills that were caused by third-party actions, the amount spilled and the number of spills increased by 18% and 26% respectively. These results were due mainly to the increase of spills in our exploration and production operations in Argentina. This was

Trends in the number of hydrocarbons spills⁽⁴³⁾⁽⁴⁴⁾



- n° of HC spills affecting the environment arising from extreme events
- n° of HC spills affecting the environment arising from operating activities

Trends in the amount of hydrocarbons spilled⁽⁴³⁾⁽⁴⁴⁾



- HC spills affecting the environment arising from operating activities
- HC spills affecting the environment arising from extreme events

due to our implementation of a Comprehensive Plan for Installations. This plan involves: designing a methodology for repairing piping based on each unit's current condition, carrying out staff training in each of the areas, and drafting plans for the replacement of pipes based on the risks and record of breakages. In 2010, we began projects to replace pipes and, in 2011, we will invest \$7 million in these plans.

Furthermore, to support the continuous improvement of our safety and environmental management system, in 2010 we approved a new regulation on the "Marine and fluvial spill management". This sets out the basic and common guidelines and company requirements for the way we manage, prevent and respond to incidents produced by marine and fluvial spills of hydrocarbons and hazardous and noxious substances, in our operation activities. To raise awareness of this plan, we held two specific workshops in Madrid and Buenos Aires.

INTEGRATED ACTION PLAN IN THE MARITIME AREA OF TARRAGONA (SPAIN)

In light of two spills on the coast of Tarragona, one at the Casablanca platform in December 2010, another in the refining operation area in January 2011, and another spill that occurred in July 2009 during drilling activities, Repsol developed an integrated action plan in the maritime area of Tarragona. At the beginning of 2011, we submitted this plan to the authorities. The aim of the plan is to contribute to the improvement of environmental protection, bolstering the quality and safety of company operations on the coast.

This plan, which will be put into action immediately and will involve the investment of €130 million over the next four years, involves measures that will affect all our activities on the coast of Tarragona. These measures are mainly concentrated on:

- Developing an investment plan aimed mainly at the improvement of the Casablanca platform and the installations on the coast, the prevention and detection of spills, and the provision of resources for immediate intervention in adverse situations. Among the actions planned is the provision of a second 24-hour surveillance vessel with hydrocarbons collection systems; the renewal and improvement of the wooden quay and the rack along the River Francolí; and the implementation of new advanced technology for the early detection of spills, which is being tested by the researchers from the Repsol Technology Center.
- Reviewing our organization and operating procedures to find opportunities for improvement, including the creation of a Manager for the Marine Environment for all Repsol operations on the coast of Tarragona, with sufficient power to act in the event of any situation.
- Supporting our staff to ensure the proper implementation of this Comprehensive Plan, with an emphasis on intensified technical training and increasing the numbers of our own maintenance staff on the Casablanca platform.
- Creating a monitoring committee, through which Repsol will periodically keep the authorities informed of the progress of the Comprehensive Plan.

(43) Spills greater than one barrel which affect the environment.

(44) Since 2008, we break down our figures on spills stemming from extreme events separately. In 2010, these numbered 88, with a total spillage of 111 tons of hydrocarbons.

Prevention and cleanup of contamination

Repsol has an environmental engineering unit that provides specialized advice to the other business units on soil contamination prevention and cleanup. It also studies and evaluates new techniques for cleaning contaminated soil with the Repsol Technological Center.

During 2010, cleanups were carried out at 42 locations in Spain: 37 decontamination processes at service stations and five marketing affiliate bases in direct sales. These cleanups mainly use onsite techniques (not involving excavation): emptying, pumping, air injection into wells and vapor extraction (air sparging), and bioremediation. In some cases, usually when a site is in the process of refurbishment or abandonment, we use offsite techniques: excavation and proper management of soils and products.

Furthermore, during 2010, we took further action to prevent and remedy pollution, including:

- To help prevent pollution, we continued our effort to apply *Statistical Inventory Reconciliation (SIR)* as a system for the early detection of leaks in underground tanks at service stations we manage. Currently, this system is in place and carrying out analysis at 304 installations.
- We continued our research program on subsoil and underground water at YPF Exploration and Production in more than 70 surface installations with storage tanks, focused on the prevention and minimization of impact caused by potential losses from these tanks. The objectives of the program were: to assess the state of the installations with respect to underground contamination; to determine the scope of any underground contamination and its impact; to define cleanup criteria; to document the actions we take and results we achieve; and carry out efforts to prevent risks to safety and the environment. After the studies were completed, it was concluded that no further remedial work was required, and implementing networks for monitoring and waterproofing the areas was recommended.

More information on programs
and other actions relating to preventing
and cleaning up contamination
at casestudies.repsol.com

IMPLEMENTATION OF NEW TECHNOLOGIES FOR THE PREVENTION AND CLEANING UP OF CONTAMINATION

During 2010, we took several actions at the Repsol Technology Center to prevent and clean up contamination in our operations. Below are details of these actions and their main results:

- To improve detection of spills, we implemented a new analytical method known as 'Identification of marine and soil petroleum spills'. This consists of the use of biomarkers to determine the source of the spill and in which have obtained positive results.
 - To improve our decontamination of soil affected by light products, tests were made with the Modified Fenton technique (an onsite chemical oxidation technique) on a significant scale allocated in the service station network.
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Protection of biodiversity

At Repsol, we give consideration to the specific characteristics of the environment where we operate to conserve and, where possible, restore the natural environment. Our company's position on biodiversity recognizes biodiversity to be a strategic component and establishes the principles that regulate our activities in this regard. One of these is the obligation to determine the sensitivity of the environment influenced by our operations and to evaluate for each project whether or not to proceed, depending on the sensitivity of the area, the severity of the possible impact, or the level of mitigation required. In areas of maximum sensitivity, the Executive Committee of the company is responsible for authorizing or disposing of the operation.

We operate in several fields located in sensitive areas considered to have a high ecological value, including areas designated as category I-IV by the IUCN (International Union for the Conservation of Nature). Our commitment is to progressively design and carry out Biodiversity Action Plans (PAB) in these areas.

During 2010, we continued to develop the PABs begun in previous years in block 57 (Kinteroni) in Peru, in Block 16 and Tivacuno in Ecuador, and in offshore activities in Trinidad and Tobago. We also commenced new PABs in the areas of the Auca Mahuida Vulcan and Llanquanelo in Argentina, and in the Caipipendi block adjacent to the Aguarague National Park in Bolivia.

We achieved our most significant progress during 2010 at:

- **Kinteroni in Perú:** The biodiversity program in the block 57 exploration area, located in the Peruvian Amazon, involved collecting information on biodiversity and indigenous communities. During 2010, we signed an agreement with the Smithsonian Institution (SI) to implement the Program of Evaluation, Monitoring and Conservation of Biodiversity (PEMCOB), whose innovative character and high quality is an example in the industry for projects in tropical forests. We intend to expand our knowledge of the current status of biodiversity, evaluate impacts, propose mitigation measures, and verify their effectiveness, while contributing to conservation with initiatives led by the Repsol Group.
- **Auca Mahuida Vulcan and Llanquanelo in Argentina:** We undertook work during 2008 and 2009 with the University of Comahue (Argentina) to recover and replant quarries in the Volcán Auca Mahuida area. In 2010, we finished the first stage of the project to design a PAB in this area, which involved drafting a report on the identification of sensitive species and habitats. In 2011, we will carry out the second stage of the PAB design. This will involve identifying biodiversity needs and the possible risk of impact on habitat and on species; and prioritizing and planning a number of measures to achieve adequate biodiversity management. The work included the establishment of specific biodiversity indicators to monitor impact and conservation action, research, and education projects.

Further information on operations in sensitive areas, development of PABs and other efforts to protect biodiversity at biodiversity.repsol.com

- **Caipipendi in Bolivia:** Although our company operations fall outside the boundaries of the Aguarague National Park, Repsol will begin work to determine the area potentially influenced by our activities and carry out basic studies in line with the cooperation agreement we made with the communities in the area affected.

Research, conservation and education projects

At Repsol, we have strengthened our commitment to the environment through collaboration with organizations, in projects, and with communities near our installations. Thus, in 2010 we were involved in numerous collaborative projects, including:

- Since 2005, we have participated with the SOS Mata Atlántica Foundation, Brazil, in the Florestas do Futuro project for the restoration of forests surrounding rivers and lakes in order to prevent the disappearance of these water resources. We planted two woods in Pinheiral and Salesópolis, which together meant the planting of 30,000 saplings, and providing a benefit to eight million people who enjoy direct contact with the rivers of this region. In addition, we are part of an environmental education project with the Instituto Educa Mata Atlántica, an organization associated with SOS Mata Atlántica. The project teaches environmental protection to students who then present environmental conferences for the community and companies, providing local social and environmental analysis of proposals and alternatives to improve quality of life and environmental and social outcomes.
- We collaborated with the University of San Francisco in Quito (Ecuador), carrying out a conservation education and communication program and an additional program on community management for conservation. In 2011, we will continue to identify and develop new projects.
- In 2008 we subscribed to an agreement with the United Nations Environment Programme – World Conservation Monitoring Center (UNEP-WCMC) to participate in the Proteus project, created in 2002 to design an updated, easy-to-use system for archiving and monitoring all protected areas at a global level. Since 2006, Proteus commenced work on the renewal of the World Database on Protected Areas (WDPA), the only global database of land and marine protected areas. Over the next five years, the 2012 Proteus Plan's main objectives include the development of better tools to support decision-making for the private sector to collect information on protected areas and species in danger of extinction, and the subsequent development of marine and coastal information.

More information on our partnerships and collaboration projects on environmental protection at externalinvolvement.repsol.com and biodiversity.repsol.com

Environmental investment and expenses

In 2010, our investments in the environment amounted to €137 million and our expenses⁽⁴⁵⁾ €138 million, of which €45 million comprise expenses related to soil and underground water management.

Among our main environmental investments in 2010 were the following:

- The continuation of our project to improve fuel quality at La Coruña (Spain) refinery with an environmental investment amounting to €26 million.
- Our project to improve the water processing plant at the Muskiz refinery with an investment of €7 million. The global project includes an investment of €14 million.
- Our project to improve fuel quality at La Pampilla (Peru) refinery with an environmental investment of €4 million.

Our results

As a general practice, we report 100% of the environmental emissions of subsidiary companies in which Repsol has a majority holding and/or operating control.

We have our own computer tool for recording, analyzing, monitoring, and consolidating environmental information, which is accessible to all of the company's centers via our intranet, enabling environmental indicators to be uploaded and validated. To this end, we use a common methodology throughout all the lines of business, which is included in the company's Guide to Environmental Parameters and is based on internationally recognized documents and guides used in the sector.

More information on our results
on environmental matters at
performanceandobjectives.repsol.com

(45) The expenses deriving from the rights necessary to cover emissions of CO₂ are not included.

	2006	2007	2008	2009	2010
Atmospheric emissions (metric tons)					
SO ₂	101,571	102,003	89,872	72,167	63,042
NO _x	87,799	95,823	89,785	89,099	90,124
NM VOC	39,045	42,375	41,328	37,191	37,130
CO	25,259	25,726	23,442	21,839	21,638
Particles	10,767	9,986	9,254	7,064	6,190
TOTAL	264,441	275,913	253,681	227,360	218,123
Water management (metric kilo tons)					
External withdrawal	124,320	125,167	118,815	115,266	115,805
Discharged	52,109	58,972	63,606	60,899	66,629
Reused	22,073	20,915	19,571	18,127	15,966
Produced	183,159	191,589	189,365	177,902	185,059
Injected	192,775	196,413	193,580	181,762	190,022
Discharges (metric tons)					
Hydrocarbons	142	170	187	230	193
Suspended solids	1,865	1,621	1,756	1,552	1,389
COD	6,133	9,839	6,087	5,787	6,272
Waste management (metric tons)					
Hazardous waste	496,128	498,236	381,813	218,738	403,882
Non-hazardous waste	198,038	202,833	188,068	152,937	195,774
Spills					
Number of hydrocarbons spills which affect the environment ⁽⁴⁶⁾	1,604	1,228	1,207	1,328	1,618
Hydrocarbons spilled which affect the environment (tons)	1,490	919	3,173	994	923
Environmental investment and expenses (million euros)					
Environmental investments (including environmental quality of products)	180	195	263	246	137
Environmental expenses	180	126	145	146	138
Environmental fines/sanctions⁽⁴⁷⁾ (millions of euros)				0.3	0

(46) Greater than one barrel.

(47) These include litigation or administrative proceedings finalized and settled in the year, with an amount greater than €50,000 notified by the Group companies. For more details on the 2010 data, see the Annual Report of the Annual Consolidated Accounts, Note 34 'Liabilities, contingencies and commitments' and note 35 'Information on the environment'.