

**Mexichem**<sup>®</sup>

Formulating solutions.  
Multiplying possibilities.



**WE GO  
FURTHER...**

SUSTAINABLE  
DEVELOPMENT  
REPORT 2011





A close-up, profile view of a woman with dark hair pulled back, drinking water from a clear glass. Her eyes are closed, and her expression is serene. The background is a soft, out-of-focus green, suggesting an outdoor setting. The text "to get closer" is overlaid in white, bold, sans-serif font on the right side of the image.

**to get closer**



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# I. Company Profile and Strategy



## I.1 About MEXICHEM

Mexichem is a leader in the global chemical and petrochemical industry, with more than fifty years of experience and listed for more than thirty years on the Mexican Stock Exchange (Bolsa Mexicana de Valores). It has operations throughout the entire American continent, Europe, and Asia. Its products are marketed in over 50 countries and generate sales of more than USD3.8 billion annually. Mexichem has more than 11,000 employees and actively contributes to progress in all the countries in which we operate. <sup>2.1</sup>

Mexichem products have a significant positive impact on people's quality of life and social progress. They include essential goods and services used in fields such as construction and civil infrastructure, water pipes and basic sanitation, power generation, transportation, communications, environmental protection, and health care, among many others.

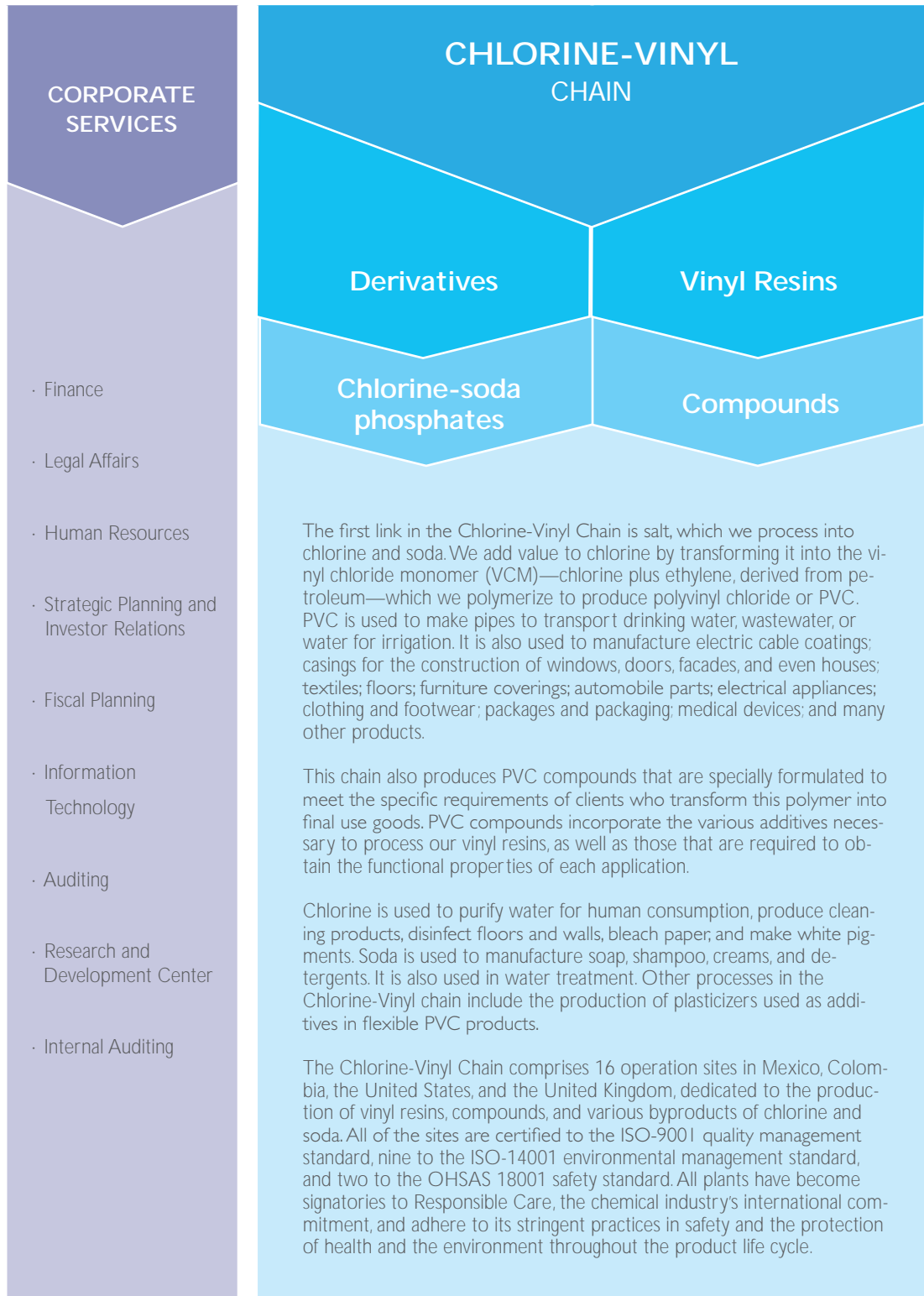
The company's mission is to create value from basic raw materials, salt and fluorite, through vertical integration of its business in three product chains, in order to make the most of synergies and achieve superior business results, within a framework of corporate responsibility oriented towards sustainability.

The corporate headquarters is located at

**Río San Javier #10  
Fraccionamiento Viveros del Río  
Tlalnepantla, Estado de México  
54060 México** <sup>2.4</sup>

## I.2 Operational structure 2.3

Mexichem is organized around its three product chains: Chlorine-Vinyl, Fluorine, and Integral Solutions. Each chain comprises business units that are related to each other, such that the finished product of one unit is the raw material of another. The three chains also complement each other in the course of their operations.



- 44 CERTIFIED ISO-9001 (Quality Management)
- 31 CERTIFIED ISO 14001 (Environmental Management)
- 24 CERTIFIED OHSAS 18001 (Safety)

### INTEGRAL SOLUTIONS CHAIN

Fluid Conduction

Geosystems

Agricultural Solutions

This chain comprises the Mexichem processes and products that have the greatest contact with the public. Its most important product is PVC piping, which we produce and market throughout Latin America to carry water and, therefore, bring development and prosperity to millions of people. Although we also manufacture plastic pipe from other polymers, PVC is used most often; that Mexichem is the largest integrated producer of this type of resin in this region presents a considerable advantage.

We are leaders in Latin America in the production and marketing of piping systems, plastic accessories, and connectors for fluid conduction, mainly water, as well as for electricity and gas. We are focusing on infrastructure and the residential and commercial construction markets. We have technical solutions with geosynthetics such as non-woven geotextiles, textiles, geodrains, geomembranes, and geomesh for public works, environmental projects, and infrastructure, as well as other projects in the field of construction.

We offer solutions in agricultural and civil engineering through projects related to handling, utilizing, and controlling water for livestock, agricultural, and aquatic uses. All of this allows us to offer the broadest diversity of solutions to satisfy the needs of our clients.

This chain comprises 31 plants in Latin America and two distribution centers and produces final goods from basic raw materials produced in other production chains in Mexico. Of its plants, 25 are certified to the ISO-9001 quality standard, 23 to the ISO-14001 standard for environmental management, and 22 to the OHSAS 18001 safety standard.

### FLUORINE CHAIN

Fluorite

Hydrofluoric acid

Aluminum fluoride

Refrigerant gases

At the base of this chain is calcium fluoride, better known as fluorite, a nonmetallic mineral. Its principle use is to act as a flux.

Mexichem owns the largest fluorite mine in the world. In its natural state, fluorite is used in the steel, cement, glass, and ceramics industries, generating significant energy savings. This type of fluorite is called *metallurgical-grade*.

Concentrated fluorite, which is pure, is known as *acid grade* and is used in the production of hydrofluoric acid. Hydrofluoric acid is obtained through chemical processes using sulfuric acid, which comes from sulfur.

Hydrofluoric acid is used primarily for manufacturing refrigerant gases for air conditioners, refrigerators, and freezers. It is also used as a propellant gas in medical devices, a material to produce gasoline and aluminum fluoride and to pickle stainless steel, in nuclear fuels, in the manufacture of integrated circuits, in the Teflon industry, and in the production of fluorinated salts such as lithium salts that are used in batteries and the sodium salts used in toothpaste.

Our Fluorine Chain comprises nine operation sites established in Mexico, the United Kingdom, the United States, and Japan. Five of our plants are certified to the ISO-9001 standard, three to the ISO-14001 standard, and three to the OHSAS 18001 standard. The three chemical processing plants have also become signatories to the Responsible Care commitment.

### I.3 Business units and market presence







**Japan**  
#2 in fluorocarbons (R134a) /  
30% of the market  
#1 in fluorite (metallurgical) /  
79% of the market

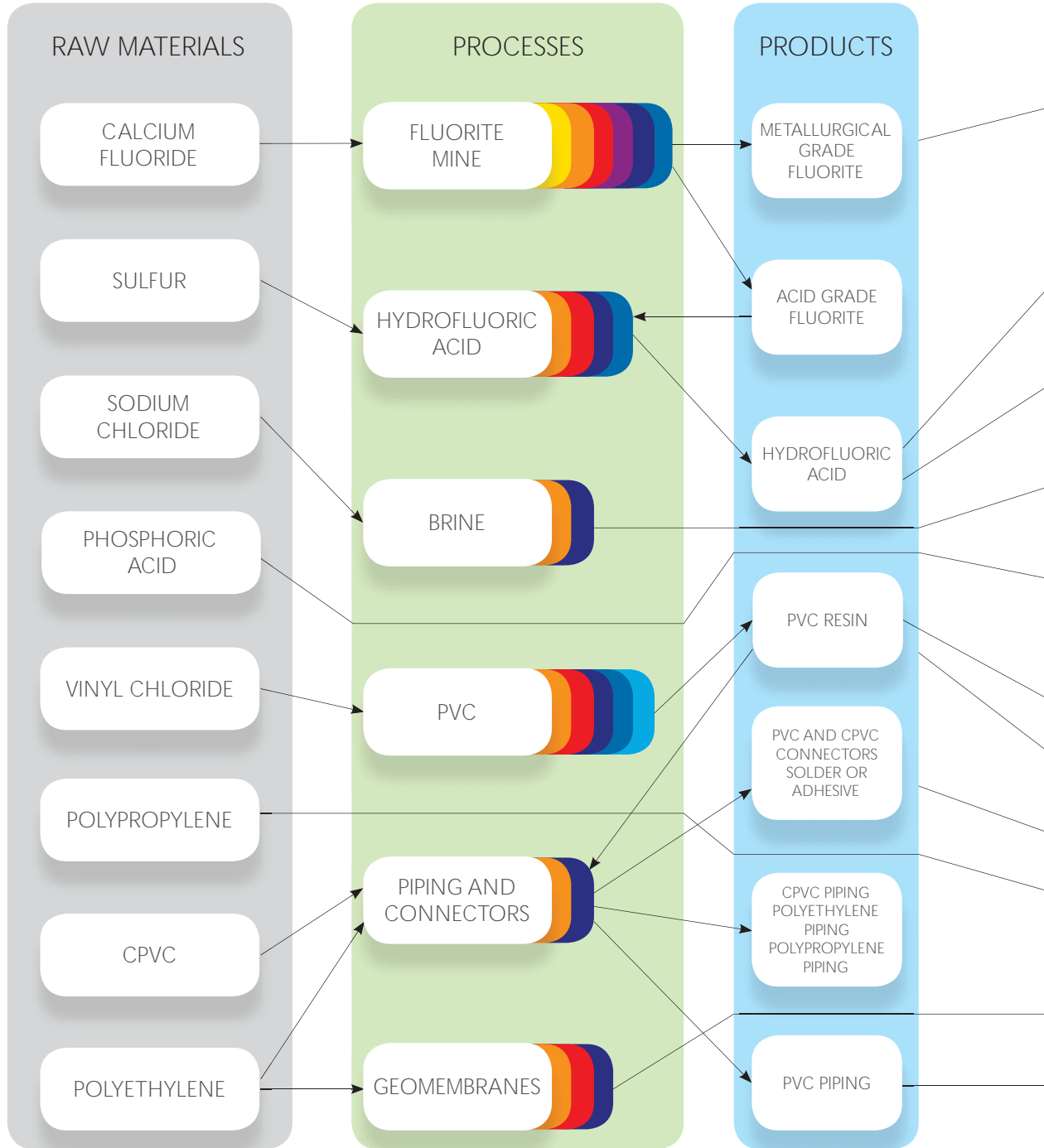
**Mexichem has operations in 18 countries in North and South America, Europe, and Asia** 2.5 y 2.7

Our Integral Solutions Chain has business units in 10 countries in North and South America, product presence in 20 countries, and more than 55,000 points of sale in the region. The Chlorine-Vinyl Chain serves all countries on the American continent and some countries in Asia. The Fluorine Chain serves markets in America, Europe, and Asia.

Mexichem's presence on the global market spans the following countries: Argentina, Australia, Bahamas, Bangladesh, Belgium, Bolivia, Brazil, Cana-

da, Chile, China, Costa Rica, Cuba, Cyprus, Colombia, Czech Republic, Dominican Republic, Ecuador, Egypt, El Salvador, France, Germany, Greece, Guatemala, Guyana, Honduras, Hong Kong, India, Italy, Jamaica, Japan, Mexico, Netherlands, Nicaragua, North Korea, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Puer to Rico, Romania, Russian Federation, Saudi Arabia, Singapore, Spain, Sweden, Switzerland, Thailand, Trinidad and Tobago, Tunisia, Turkey, Ukraine, United Kingdom, United States, Uruguay, Venezuela, and the Virgin Islands.

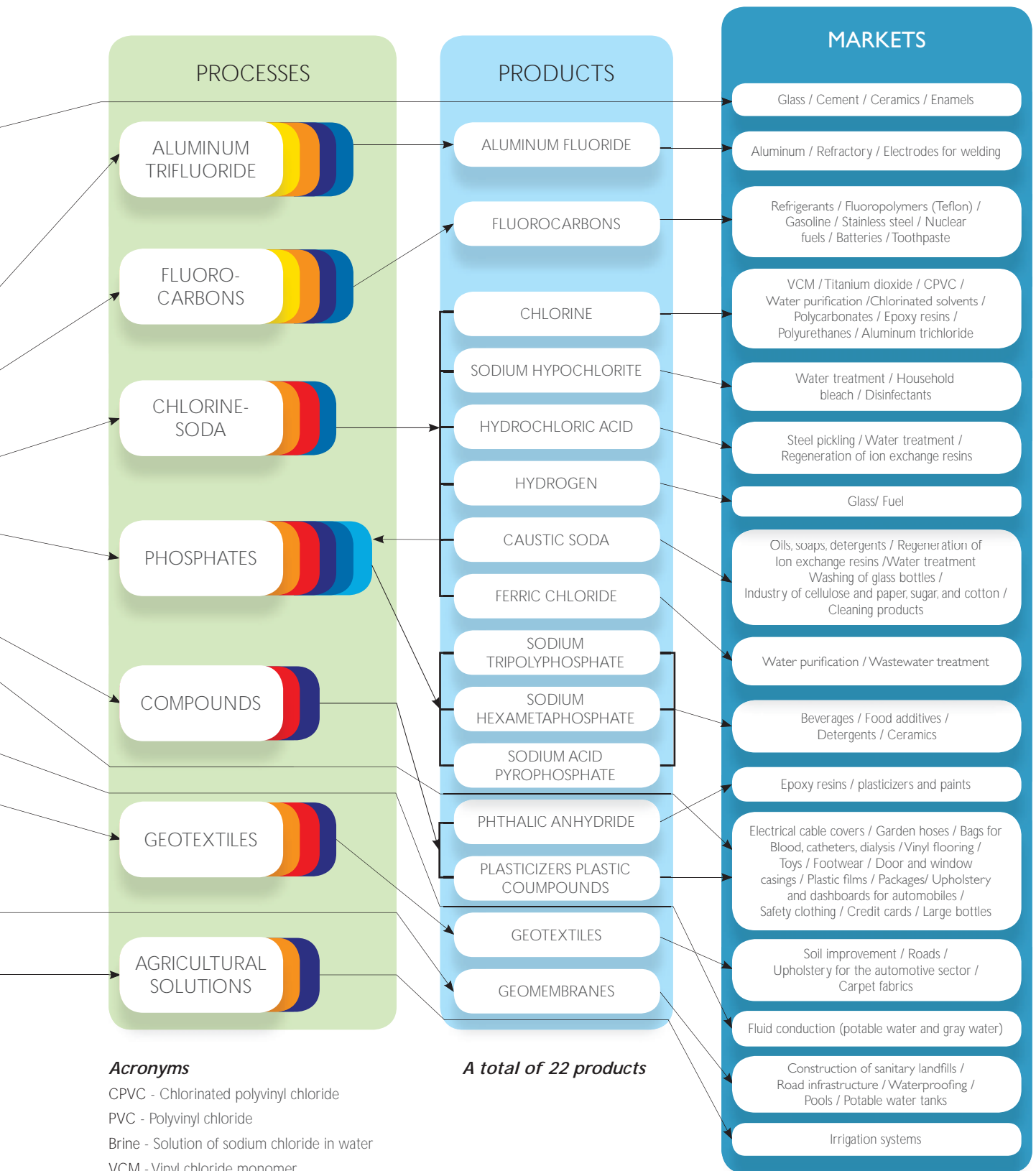
Diagram of processes, products and uses 2.3



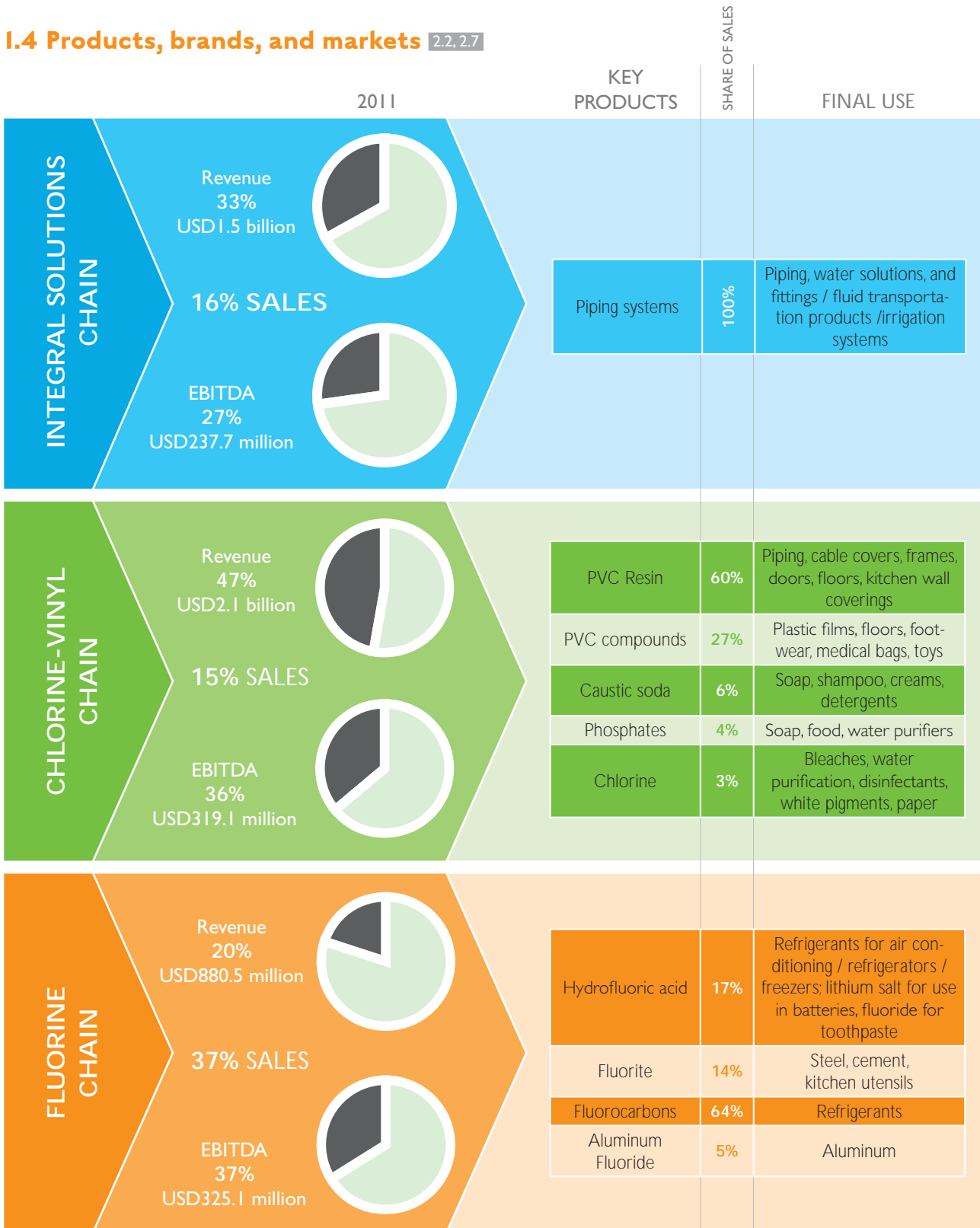
**Principal impacts**

- Altering the environment
- Use of resources (energy, water)
- Atmospheric emissions (dust and gases)
- Waste, tailings, and slag
- Toxic and/or hazardous waste
- Health and safety risks
- Discharge of treated wastewater





**I.4 Products, brands, and markets** 2.2, 2.7



Our brands are Mexichem, Amanco, Plastigama, Pavco, Bidim, Celta, Alphagary, Zephex, and Klea. 2.2





## 1.5 Mexichem Culture and Strategy

Mexichem, in its efforts to go further to get closer to its clients, has gradually grown through strategic acquisitions. Mexichem consolidated its leadership and extended its geographic presence in the international market through acquisitions. Our company is the leader in various countries and regions, which has resulted in continuous growth over the past few years. This means assimilating new companies and diverse cultures.

The principal guideline for the work culture at all Mexichem plants is the effort to articulate the economic, social, and environmental aspects into the business strategy, through a triple-bottom-line model geared toward sustainability. The philosophical framework of this strategy is reflected in the corporate mission, vision, and values that direct the management of all of the company's operating units. <sup>4.8</sup>

### VISION

To be respected and admired globally as a leading chemical company focused on producing results, contributing to social progress, and improving people's lives.

### MISSION

To transform chemicals into innovative products, services, and solutions across widely diverse industrial sectors by focusing on operational excellence and market needs. Our offerings generate ongoing value for our customers, employees, partners, stockholders, and communities and contribute to enhancing people's quality of life.

### VALUES

To realize our vision and mission, our day-to-day activities are aligned with the following values:

### LEADERSHIP

We seek to continually drive innovation in our products, processes, and solutions and to make a positive impact on the market and the industry.

### COMMITMENT

We believe in dedication, focusing on achieving shared goals and teamwork in order to exceed the expectations of our clients and to keep our commitments to our partners, employees, and the communities of which we are part and in which we operate.

### RESPONSIBILITY

We act responsibly and fairly in the communities in which we do business. We contribute in the best way possible toward the preservation of the environment through sustainable activities.

### SAFETY

The health and safety of our people are our priority. We will strive to ensure safety at our facilities, in the communities in which we operate, and in the environment.

### RESULTS

We believe in operational and financial efficiency and excellence to deliver positive results with sustainable growth and products that make a difference.

### INTEGRITY

We are committed to being an ethical, honest, and trustworthy firm that treats employees appropriately and with respect.

## I.6 Management Strategy

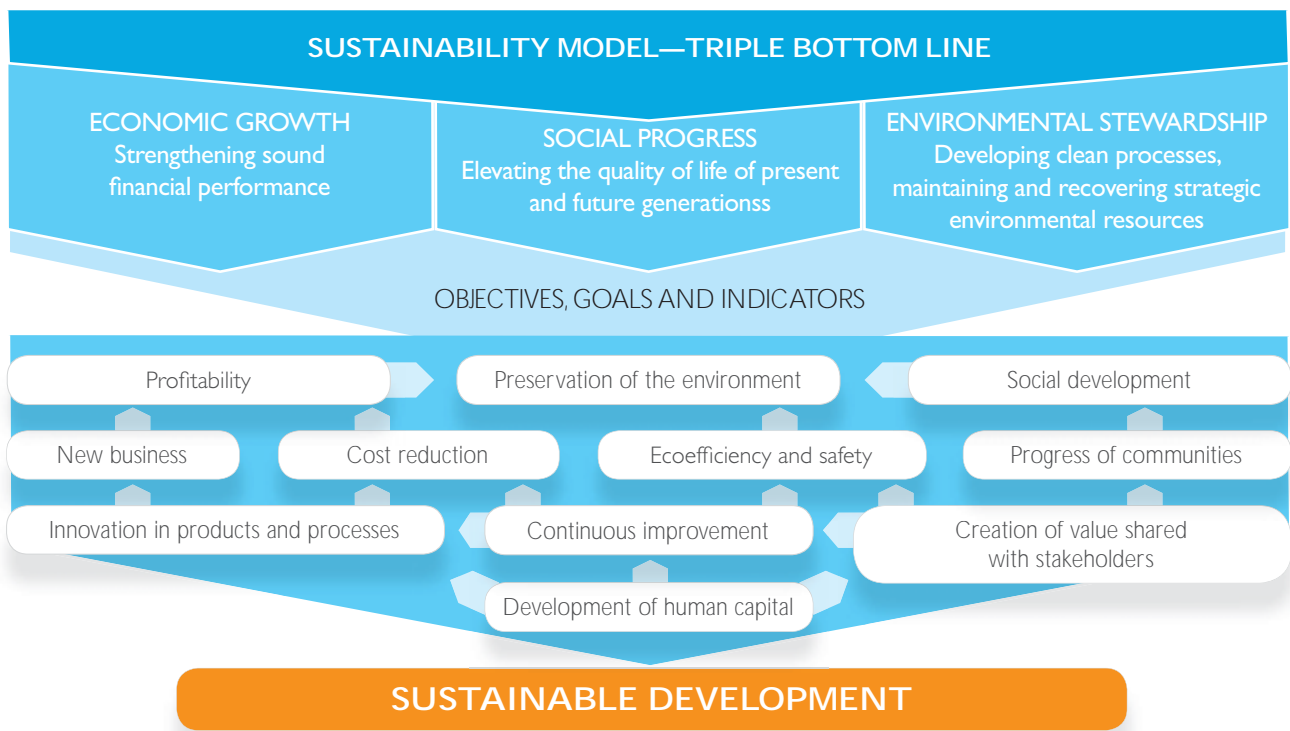
In evaluating over the years our business model and the global environment in which we operate, we have come to consider fundamental long-term planning questions: How do we make our current success in business long-lasting, to go beyond our generation and stand as a benchmark to be followed in the business environment? How do we go further with our strategic vision to reach and surpass goals for growth as a corporation with a global presence? How do we improve our training to produce competent and socially responsible people, who are the foundation for the company's success? Because of these and other questions regarding the future of the company, the management team has adopted sustainability as the strategic lens for business decisions, with a focus on the triple bottom line in management, recognizing that the company's profitability and longevity require and depend on responsible management in social and environmental matters.

Mexichem is committed to a vision of sustainability that exceeds corporate limits and expectations, involves all actors and participants in its value chains and the stakeholders in the communities in which we operate. In this context, Mexichem's corporate strategy is designed to create economic, environmental and social value, based on the following guidelines:

- **Sustained, healthy growth:** Create wealth through rigorous implementation of our plans for vertical integration, starting with our raw materials, salt and fluorite; make the most of synergies generated by integration to optimize processes; reduce consumption of resources; and achieve economies of scale.
- **Excellence in operations:** Incorporate the best management practices and technology available to maintain the most stringent standards of quality, safety and environmental protection.
- **Development of human capital:** Stimulate the company's progress in an environment of cultural diversity, giving our people new knowledge and experiences, generating conditions that favor the development and retention of talent.
- **Technological development and innovation:** Establish a culture that encourages ideas and innovation so that we can offer products of genuine value that meet ecoefficiency and risk-minimization criteria throughout our products' lifecycles.
- **Social responsibility:** Commit efforts to the effective stewardship of water resources and vulnerable ecosystems; support social progress that comes from self-management in communities where we have operations; and respond with transparency to all stakeholders that are part of our business.







### Stakeholders

Mexichem is a multinational company that creates increasing value from the transformation of its basic raw materials, salt and fluorite, through efficient product chains that generate superior business results to other similar companies in the market and that act in a framework of corporate responsibility.

We intend to contribute to the sustainability of our product chains and society by working with all stakeholders who take part in our activity: people, other companies, governments, academics, local communities in which we operate, and other social organizations with which we identify the opportunity to build value together.

### 1.7 Impacts, risks and opportunities: strategic objectives, goals, and development 2011

In accordance with our commitment to sustainable development, we identified the key impacts, risks, and opportunities to improve our triple-bottom-line performance, which are indicated in our sustainability strategy. Our employees are committed to respecting ethical values, developing communities in which we have a presence, and protecting the environment. This includes our responsibility to seek benefits for our stakeholders and address local issues with a global vision.

During 2011, we focused particularly on the following five areas:

- A. Maintain optimum profitability.
- B. Standardize procedures to guarantee respect for human rights at the work site and train employees on this issue.
- C. Implement systems to ensure the best conditions for health and safety.
- D. Develop plans to protect biodiversity in sites surrounding our operations, to reduce their environmental and social impact.
- E. Support social projects in the communities in which we operate.

Mexichem's first sustainability report, published in 2009, communicated our strategic objective to move toward sustainability, with specific goals and actions for the years 2010–2013. Management and the corporate sustainability committee have driven and monitored advancements to ensure that the goals were met. Each country ensures that the objectives are disseminated and integrated into each employee's performance review.

The following table presents a summary of the most outstanding developments of 2011, in accordance with the initiatives planned in our sustainability strategy for this period. <sup>1.2</sup>








## 2010 – 2013 GOALS

### SUMMARY OF PROGRESS 2011

Performance Goals:	DESCRIPTION	ACTIONS	PROGRESS
Economic	Promote a culture that respects idea-generation and technological innovation through the implementation of a Research, Development and Innovation (R + D + I) Management System.	Mexichem is working with an outside consultant to implement an R + D+ I management model based on best practices.	
Environmental	Strengthen the culture of energy savings among all employees by implementing or improving energy- management systems and our compliance with energy-efficiency programs.	The plants that consume the most energy have energy-savings committees in charge of achieving greater energy efficiency.	
Environmental	Reduce waste by improving production processes and by implementing or developing new ones.	Mexichem developed plans to reduce waste generation and manage it more appropriately.	
Environmental	Reduce greenhouse gas (GHG) emissions by 5% (baseline year 2009), by increasing the efficiency of our processes, making technology upgrades and using more renewable energy sources.	Mexichem conducted a GHG emissions inventory in Colombia and identified projects to achieve this goal.	
Environmental	Reduce emissions of substances that deplete the ozone layer by 20% (baseline year 2009), by replacing gases and coolants used in the refrigeration and liquefaction equipment with others that are more environmentally sound.	There were reduced 80% vs. baseline. Goal achieved.	
Environmental	Formalize a comprehensive strategy for biodiversity protection by reviewing our current scope and including new sites in countries with the greatest biodiversity in which we operate.	Mexichem is developing plans and programs to protect and care for high-biodiversity areas based on studies from its sites.	
Environmental and Social	Endorse sustainable development and social responsibility concepts that align with the vision and mission of Mexichem.	Mexichem's new vision and mission, aligned with sustainability, has been communicated throughout the entire organization.	
Social	<b>Regarding our people:</b> Promote the value of the individual, his or her own personal and professional development, and the achievement of individual and business objectives.	Based on three guiding principles: - contribute to the company's business strategy; - act ethically and professionally; - maintain an excellent work environment.	
Social	<b>Regarding our people:</b> Support the company's growth and consolidation by attracting and retaining personnel, through recruitment and selection methods that allow us to employ the best people.	We have competitive pay scales that allow us to attract talent. We also have a development program to train Mexichem leaders. The training strengthens their abilities in all the product chains and supports skills development and life-long learning.	

## 2010 – 2013 GOALS

### SUMMARY OF PROGRESS 2011

Performance Goals:	DESCRIPTION	ACTIONS	PROGRESS
Social	<b>Regarding our people:</b> Manage the education and intellectual capital of our colleagues.	We provide training in accordance with the needs of each operation and the duties of each position.	
Social	<b>Regarding our people:</b> Maintain organizational structures that support our business strategy. Strengthen an organizational structure that facilitates sustainability at Mexichem.	The sustainability committee has strengthened its experience, generating actions to increase triple-bottom-line performance. All plants submit reports in accordance with GRI indicators, allowing us to consolidate global information.	
Social	<b>Regarding human rights:</b> We will draw up a human rights policy that reiterates the principles of our code of conduct and extends to our contractors and distributors, defining our position on issues such as freedom of association, child exploitation, the rights of indigenous peoples, and forced labor.	Mexichem drafted procedures and created a campaign to train personnel in how to implement the human rights policy.	
Social	<b>Regarding our people:</b> Achieve zero fatalities and zero incapacitating accidents. Investigate the causes of the accidents and take corrective and preventative measures.	Mexichem has many safety programs to protect our colleagues. We also track the global results monthly and establish corrective and preventative measures from accident investigation.	
Social	<b>Regarding our communities:</b> Strengthen a constructive dialogue with our stakeholders. Complete a stakeholder analysis.	Mexichem established a means of engaging with stakeholders in Mexico that will be expanded to other countries.	
Social	<b>Regarding our product responsibility:</b> Approve our product-safety protocols in order to reduce potential risks that could impact the health and safety of our clients and reduce potential effects on ecosystems.	Product safety protocols were completed for our hazardous products. Products were registered with REACH.	
Economic	Approve the practices of the subsidiaries to finance the purchase of construction materials for clients, evaluating feasibility and incorporating the current systems proven to be effective.	We evaluated the viability of the project and will revise the goal depending on the results achieved.	



## 2. Message from the CEO to Stakeholders

1.1, 3.1, 3.2 y 3.3

### Dear Readers:

Our 2011 Sustainable Development Report, *We Go Further to Get Closer*, reflects Mexichem's commitment to long-term sustainability, based on a better understanding of the conditions necessary to achieve this goal.

Sustainable development seeks an economy that serves development of a society that can exist in balance with the planet's natural resources. Sustainable development harmonizes economic growth with environmental conservation and social progress, rather than putting them in conflict with each other. It recognizes that economic activity, environmental conditions, and equal opportunity for social development need to be integrated into human welfare over the long term. Development demands natural resources that can lead to environmental damage, however, and on occasion threatens the laws of nature, where everything flows in closed loops and in balance.

In light of this model, sustainability cannot be achieved by companies or individual entities alone but requires that all be responsible and participate. In this sense, corporate leadership around sustainability is key to changing prevailing social values as well as systems and trends that already threaten the functionality of the planet's ecosystems.

At Mexichem, we are aware that the long-term viability of our company, our nation, and our planet depends on successfully meeting the current and future needs of society, and this requires respecting the balance of nature. Today Mexichem has plans, policies, and programs for sustainability in all its product chain locations. We are creating economic value without undermining the capacity of vital ecosystems, while also reducing social inequalities with creativity, dedication, and efforts to offer safe and useful products for society. We operate in an ecoefficient and profitable manner. Mexichem is committed to a vision of sustainability that surpasses corporate limits and involves all participants in its value chains and stakeholders in the communities in which we operate.

With these principles in mind and following our strategic plan, which is oriented toward triple bottom line results, in 2011 our management team began strengthening Mexichem's financial stability and consolidating our growth to reduce our environmental footprint and contribute to our stakeholders' progress.

### Significant events

Mexichem was selected to be part of the 2011 Sustainability and Social Responsibility Index (ISRS) of the Bolsa Mexicana de Valores (BMV). The index includes companies that are leaders in their commitment to the environment and social responsibility and adherence to corporate best practices.

The researchers, Universidad Anáhuac and the UK company EIRIS, analyzed companies based on their annual and sustainability reports, in our case the Sustainable Development report.

The Sustainability Index is also associated with the promotion, development, and respect of people, the environment, the communities in which we operate, as well as profitability. For Mexichem to be part of this Index shows that we are fulfilling our triple-bottom-line commitment. Investors have identified us as a sustainable business that meets its commitments and is dedicated to economic performance, society, and the environment.

In this sense, with regard to the financial picture, sales performance in 2011 was MXN47,310 million, and EBITDA was MXN10,271 million. These results show increases in sales of 34% and EBITDA of 26%, and so once again we surpassed our growth target established in the 20/20/20 vision.

The increase in sales is due mainly to the Polycyd, Plásticos Rex, and Alphagary acquisitions and to the better prices in the Fluorine (refrigerants) and Chlorine-Vinyl (PVC resins and compounds) Chains.



Rafael Dávalos Sandoval  
Chief Executive Officer

Our vertical integration strategy for the Chlorine-Vinyl Chain—with the incorporation of Polycyd and Plásticos Rex in Mexico, producers of PVC resin and piping, and of Alphagary, leader in the production of PVC compounds, with plants in the United States and the United Kingdom—allowed us to expand production of plastic compounds and generate important synergies based on operating efficiency. These include taking advantage of distribution channels, geographic diversification, and the development of new products for the medical and automotive sectors, among others.

The increase in the EBITDA is the result of synergies generated by these acquisitions and realized during the year, demonstrating the effectiveness of strategies such as training in order to be successful even in an unfavorable macroeconomic environment.

Despite the extended economic crisis in some regions of the world, these results allowed Mexichem to maintain the expected balance in its finances and continue its expansion plans. In this sense, in the fourth quarter of 2011 we made a public tender offer to the European multinational company Wavin, which, as of the date of publication of this report has been accepted.

The details of these stimulating economic achievements are fully reported in our 2011 Financial Report and in the Economic Dimension section of this report.

The ability and experience of our people is one of our greatest strengths, as demonstrated by the company's results and our progress in research and development. In January 2011 we received the *Premio de Ciencia y Tecnología* (Science and Technology Award), from the government of the State of Mexico, through COMECTY (Council of Science and Technology). This award is given to the Mexichem CID (Research and Development Center) for its contributions to the advancement of knowledge and progress in the country.

All of this contributes to Mexichem's human talent and helps to energize our efforts to develop new technologies and products.

In 2011 we continued to improve our operating efficiency based on synergies and economies of scale that allow for vertical integration in our product chains. We reduced our environmental footprint by decreasing GHG emissions and upgrading technologies in industrial processes to reduce the use of substances that deplete the

ozone layer. Similarly, we are making strides in protecting biodiversity, including developing new objectives for countries in which we operate that have the greatest biodiversity. Along with the Kaluz Foundation, we support important projects that protect and enhance the natural capital of megadiverse ecosystems.

Energy is a very important input for us and continues to come mostly from fossil fuels. We are seeking alternative sources and maintaining energy-conservation programs to continue to reduce GHG emissions from our current equipment. With regard to social issues, we support and protect human rights as part of our corporate policy for our business associates and colleagues. We are committed to spreading universal principles regarding this issue to all areas where we are allowed to operate.

Aware of our social responsibility, and in line with the vision of the Kaluz Foundation, we are moving further in our identification and adoption of core themes to achieve the most significant impact: drinking water and plumbing, decent housing, education, environmental stewardship and innovation. Our commitment to the communities in which we operate came to fruition through joint initiatives to create economic, environmental, and social value in all of the countries in which we have operations. Projects that stand out are social-interest projects carried out through employee volunteers and aimed at improving living conditions and opportunities for progress in vulnerable communities near our operations. These all deserve our recognition and are reflected in this report.

It is very satisfying to report that in 2011 Mexichem was recognized in various ways for its social responsibility. For the fourth consecutive year, we received the certification in Mexico as a Socially Responsible Company for demonstrating our commitment and dedication toward the country, its communities, and the environment. Amanco received this same recognition for the seventh time.

Mexichem Colombia (Pavco) was honored with the 2011 Andesco Corporate Social Responsibility Award in the category of Large National Company and was a finalist nominated to receive the *Premio Portafolio a la Responsabilidad Social Empresarial*. Mexichem Brazil was distinguished as a model company in sustainability by the magazine Exame for the fifth consecutive year. It is a source of great pride for Mexichem to belong to this select group of companies distinguished for having business strategies that incorporate principles of social responsibility and maintain successful social, environmental, industrial safety, and corporate governance initiatives.

Other significant awards and recognitions are highlighted in this report.

In 2011, our processes for strategic planning and monitoring of results were supported with the implementation of an information system for sustainability indicators. All Mexichem operating units are involved in this step and have incorporated the principal impacts, risks, and opportunities related to them and their respective action plans.

Our Sustainability Report, *We Go Further to Get Closer*, presents Mexichem's most relevant performance indicators, with examples and cases that show our commitment. We dedicate it to all of our stakeholders in the spirit of integrity and transparency and so that they may participate in our achievements and in the generation of value. We hope that this report meets your expectations and that the combined value generation is multiplied into opportunities that promote significant progress for society and our company.

We extend our sincere thanks and recognition to all members of the Board; our stockholders, employees, clients, and suppliers; and members of the community for their support and dedication to efforts that strengthen our corporate leadership and the progress of our value chain as it moves toward greater sustainability.



Rafael Dávalos Sandoval  
Chief Executive Officer



### 3. About the 2011 Sustainability Report



Our 2011 Sustainable Development Report, *We Go Further to Get Closer*, continues to demonstrate Mexichem's commitment to and achievement in managing the triple bottom line to create economic, environmental, and social value. It relates the challenges and future vision, policies and objectives, activities, and performance of Mexichem in areas such as corporate governance, financial results, labor issues, employee health and safety, commitment to furthering human rights, social progress, and environmental stewardship for the company's global operations.

The report is presented in accordance with the Third Generation (G3) guidelines from the Global Reporting Initiative (GRI), using the technical protocols and the 2010 Mining and Metals Sector Supplement. Similarly, we adhered to the AA1000 AccountAbility standards (2008) and to the principles of relevance or materiality, inclusivity, and responsiveness to our principal stakeholders. In addition, we referred to the Principles of the United Nations Global Compact, the Universal Declaration of Human Rights, and the recommendations of the International Labor Organization.

All information provided in this report covers operations from January 1 to December 31, 2011. [3.1](#) Historical data from the four previous years (2007 to 2010) are included for comparison purposes and to identify trends. Our last report covered 2010, [3.2](#), [3.3](#) and there have been no significant changes that affect the comparability of the information reported or that require us to restate the information presented in previous reports. [3.8](#), [3.10](#), [3.11](#)

The information included in this document and its adherence to GRI indicators was prepared by the Corporate Sustainability Committee. The 2011 report covers all the operation sites (plants) in our three principal business chains: Integral Solutions, Chlorine-Vinyl, and Fluorine, as well as their corporate support services. We took into account the principles of materiality, the participation of stakeholders, relevant to the context of sustainability of product chains, completeness, balance, comparability, precision, frequency, reliability, and transparency. Our plants are located in Mexico, the United States, Guatemala, Honduras, El Salvador, Panama, Argentina, Peru, Ecuador, Colombia, Venezuela, Costa Rica, Nicaragua, Brazil, the United Kingdom, and Japan. [3.5](#), [3.6](#) The information does not include sales offices. [3.7](#)

All of compiled data is documented electronically, and the technical support used for mathematical calculations is mentioned in the numerical indicators. [3.9](#) The key performance indicators cover all our business units, except in instances where there were limitations in geographic coverage or available information. All triple-bottom-line indicators deemed relevant to the business and to our principal stakeholders are included.

Deloitte (Galaz, Yamazaki, Ruiz Urquiza, S.C.) conducted a third party review of the 2011 Sustainable Development Report to guarantee the transparency and reliability of the information presented. [3.13](#)

Mexichem has self-reported a GRI Application Level of "A+" for this report, which was checked by the GRI.

## 4. Corporate Governance

### 4.1 Governance system

Mexichem S.A.B. de C.V. is a public company listed on the Mexican Stock Exchange (BMV), whose corporate bylaws are governed by the *Ley General de Sociedades Mercantiles* (the General Corporations Law of Mexico) and by the *Ley del Mercado de Valores* (the Securities Market Law). No government holds shares in the company. [2.1.2.6](#)

Our corporate governance principles provide us with a framework for management of the company's activities while meeting the needs of our principal stakeholders. Mexican legislation and national legislation of the countries in which we operate form the basis of our corporate governance practices.

Because Mexichem shares are listed on the Mexican Stock Exchange (BMV), we are governed by the *Ley del Mercado de Valores*. We also adhere to the *Código de Mejores Prácticas Corporativas* (Code of Best Corporate Practices) endorsed by the *Consejo Coordinador Empresarial* (Council for Business Policy Coordination).

### 4.2 Corporate governance structure [4.1](#)

#### 4.2.1 Board of Directors

The board of directors is responsible for determining corporate strategy, establishing and ensuring the implementation of the values and vision that define us, and sanctioning transactions between related parties, as well as transactions that are part of the normal course of business. The number of independent members in this, our highest governance body, is seven, with five alternate independent directors. [4.3](#)

The educational background and professional experience of the members of the board of directors is primarily economic and managerial. [4.7](#) Women comprise 30% of the alternate directors on the board of directors. The chairman of the board of directors is not a company executive. [4.2](#)

Mexichem's corporate bylaw establishes three committees: executive, audit, and corporate practices, which are responsible for helping the board of directors carry out its duties. Our board of directors determines management policies and

monitors our triple-bottom-line performance, with support from the audit and corporate practices committees. In addition, we have an internal auditing department, which reports directly to the board of directors in order to avoid any conflicts of interest. [4.6](#)

#### Executive Committee

The executive committee was established by resolution of the board of directors on July 16, 2009. Its core responsibility is to address and resolve relevant and urgent issues that cannot wait until the next board of directors meeting. However, in no case shall the executive committee have the powers reserved by law or by the by-laws for the board of directors, audit committee and/or corporate practices committee, or stockholders assembly.

This committee is the highest executive governing body and is responsible for guiding the organization's strategy in corporate, environmental and economic matters. Its powers are to analyze, evaluate, and, when appropriate, propose to the board of directors for its approval any investments in produc-



tive assets or company acquisitions; to establish and validate strategies for the medium and long term to manage sustainability; to look at the business plan each year, with a focus on triple bottom line; and to evaluate financing operations, commercial names and brands. The procedure through which the committee is formed consists of selecting the executives with the highest level of experience, in particular experience in business management, and includes the chairman and at least four members of the board of directors. The executive committee uses consultants and independent experts to evaluate strategy; these same consultants provide the training and feedback the executive committee needs. The results of the evaluation are reported to the board of directors. [4.7](#), [4.8](#), [4.9](#), [4.10](#)

### Audit Committee

The audit committee's duties are to evaluate the company's internal controls and audit systems and to identify and respond to significant deficiencies in them; monitor any corrective actions or preventive measures taken if noncompliance with operational and accounting guidelines or policies occurs; evaluate the performance of external auditors; de-

scribe and evaluate nonaudit services provided by the external auditors; review the company's financial statements; evaluate the ramifications of any accounting policy modifications approved during the fiscal year; monitor actions taken due to observations by stockholders, directors, executive officers, employees, or third parties regarding accounting, internal control systems, and internal and external audits, as well as any claims related to irregularities in management, including practices to ensure anonymity and confidentiality in handling whistleblower reports from employees; and overseeing compliance with directives from the general stockholders meeting and the board of directors. [4.6](#)

### Corporate Practices Committee

The corporate practices committee's duties are to evaluate the performance of related directors; review transactions between related parties; review compensation of the aforementioned directors; evaluate any exemption granted to the directors, and especially the related directors, that allow them to have advantages in business opportunities; and perform their duties as required by the *Ley del Mercado de Valores* (Securities Market Law). According to our bylaws, all members of the audit and corporate practices committees, including each chairman, shall be independent directors. [4.6](#)

Directors are paid in accordance with the resolutions of the seventy-sixth regular annual general stockholders meeting, which took place on April 29, 2011. Compensation for the chairmen of the board of directors and of the audit and corporate practices committees is MXN140,000 (one hundred forty thousand Mexican pesos) (USD10,937) per meeting they attend of the aforementioned bodies. The remuneration for other members of the board of directors is set at MXN70,000 (seventy thousand Mexican pesos) (USD5,469) for attendance at the board of directors meetings. Members of the audit and corporate practices committees are paid MXN80,000 (eighty thousand Mexican pesos) (USD6,250) for attendance at their respective committee meetings. [4.5](#)

Communications with the highest corporate governance body are through operational and board meetings. During the annual board meetings the board of directors evaluates the financial results and compliance with the company's social and environmental goals. [4.4](#), [4.9](#)





## Board of Directors 4.1

### Honorary Chairman of the Board for Life

Antonio del Valle Ruiz

### Chairman of the Board

Juan Pablo del Valle Perochena 2.9

### Secretary

Juan Pablo del Río Benítez

### Acting Assistant Secretary

Andrés Eduardo Capdepón Acquaroni

### Directors

Juan Pablo del Valle Perochena  
Antonio del Valle Ruiz  
Antonio del Valle Perochena  
Francisco Javier del Valle Perochena  
Adolfo del Valle Ruiz  
Ignacio del Valle Ruiz  
Ricardo Gutiérrez Muñoz  
Jaime Ruiz Sacristán

Divo Milán Haddad\*  
Fernando Ruiz Sahagún\*  
Jorge Corvera Gibsone\*  
Guillermo Ortiz Martínez\*  
Eduardo Tricio Haro\*  
Armando Santacruz Baca (†)  
Valentín Díez Morodo\*  
Eugenio Santiago Clariond Reyes\*

### Alternate Directors

María de Guadalupe del Valle Perochena  
María Blanca del Valle Perochena  
Adolfo del Valle Toca  
José Ignacio del Valle Espinosa  
Francisco Moguel Gloria\*  
José Luis Fernández Fernández\*  
Dolores Palacios Norma\*  
Arturo Pérez Arredondo\*  
Eugenio Clariond Rangel\*

\* *Independent Directors*

### 4.2.2 Management and Directors of Product Chains

The Directors of the Chlorine-Vinyl, Fluorine and Integral Solutions chains are responsible for implementing Mexichem's strategy in their respective business units or departments, as well as overseeing the sustainability, productivity, and safety of the company's operations and products. All departments of the chains, except Internal Auditing, report to Mexichem's CEO.

### 4.2.3 Research and Development Center

This organization is responsible for managing innovation, environmental stewardship, eco-efficiency and operational safety at Mexichem. The Director of the Research and Development Center (CID) designates a Corporate Sustainability Coordinator to carry out the responsibilities of that position.

The Sustainability Coordinator is responsible for promoting, coordinating, and monitoring so that all Mexichem units achieve the triple-bottom-line objectives established by management in the compa-

ny's strategic plans. The coordinator must support the communication of the objectives, indicators, and goals common to all units of the company with actions that are pertinent to reaching them. Likewise, the coordinator must see that the action plans agreed upon are fulfilled and documented annually so that results can be included in the Sustainable Development Report.

The Mexichem CID is responsible for continually improving products, processes, services, and business through research and technological development, management of innovation and project management. It also directs the company's quality management, environmental management, and safety, helping to generate value in Mexichem's products, processes, services, and business.

The priority of Mexichem companies is to develop and use cutting-edge technology to guarantee the quality of its products and services, so they can be highly competitive on an international level. The Mexichem CID leads the development of new products, processes and technologies, fostering the improvement of all operation sites.

#### Audit and Corporate Practices Committees

Fernando Ruiz Sahagún

*Chairman*

Divo Milán Haddad

Eugenio Santiago Clariond Reyes

Juan Pablo del Río Benítez

*Secretary (not a member of the Committee)*

#### Executive Committee

Ricardo Gutiérrez Muñoz

*Chairman*

Juan Pablo del Valle Perochena

Eugenio Clariond Reyes Retana

Adolfo del Valle Ruiz

Ignacio del Valle Ruiz

Jaime Ruiz Sacristán

Francisco Javier del Valle Perochena

Antonio del Valle Perochena

Guillermo Ortiz Martínez

#### Officers

##### Chief Executive Officer

Rafael Dávalos Sandoval

##### Chief Financial Officer

Miguel Ruiz Tapia

##### Director of Strategic Planning and Investor Relations

Enrique Ortega Prieto

##### Legal Director

Andrés Eduardo Capdepón Acquaroni

##### Chlorine-Vinyl Chain Director

Carlos Manrique Rocha

##### Fluorine Chain Director

Héctor Valle Martín

##### Integral Solutions Director

Victor Aguilera Rey

#### 4.2.4 Corporate Manager of Human Capital

The Corporate Manager of Human Capital is responsible for direction and executive support in activities that come under the scope of social responsibility related to labor, human development, community relations, and corporate communications.

A qualified workforce has been key to Mexichem's growth and leadership. The dedication of our employees to customer satisfaction and continuing education, and their motivation to achieve the highest possible yield, have been fundamental to our ability to build a successful, innovative company.

#### 4.3 Code of Ethics 4.8

At Mexichem, we encourage an attitude of openness and transparency toward the governmental institutions and political organizations with which we interact. The company has policies that help to ensure that we comply with laws, standards, regulations, and codes; are transparent; and maintain standards of ethical behavior in areas such as corruption, conflicts of interest, monopolies, bribery,

political contributions, and accounting practices. Our Code of Ethics document, which is communicated to all personnel as soon as they are hired, can always be referenced on-line.

In 2011, no incidents of corruption in the company were recorded. SO4 To prevent problems of this nature, in addition to the Code of Ethics, we have corporate policies that are communicated to all employees upon joining the company and which they must sign to ensure their agreement and compliance. SO2, SO3 At times it is necessary to revise this policy, and in that case employees sign the document again during their tenure at the company. The supplemental policies to the Code of Ethics are the Conflicts of Interest Policy and the Confidentiality and Patents Policy. Both are legally binding.

In accordance with our Code of Ethics, employees may not receive remuneration of any type from competitors, clients, distributors, suppliers, or governmental agencies for services or negotiations carried out while representing Mexichem.

As a result of monitoring of this policy by our management system, in 2011 there was no type of sanction due to corruption. Internal documents, behavior of executive officers and employees, as well as work performance, are measured based on the code of ethics, policies, and protocols. Employee evaluations include a focus on compliance with triple-bottom-line practices. **4.8**

Mexichem does not participate directly in the formulation of public policy or in lobbying activities with the intent of influencing them. Its participation is through unions that represent industrial sectors related to the company's business. In Colombia, for example, we participate in the housing boards for the public interest put together by the federal government; We are a member of the Boards of Directors of Camacol (Colombian Construction Association) and Cencauca (Business Corporation of Norte del Cauca), in public-private partnerships with the municipality of Guachené and international organizations such as UNICEF. In addition, Mexichem is a member of ACODAL (Colombian Health and Environmental Engineering Association), of ANDESCO (National Association of Domestic Public Service Companies), of ANDI (National Business Association), of Acoplásticos and of ICONTEC (Technical Standards Institute). In Mexico, it is part of ANIQ (National Association of the Chemical Industry) and of the Mining Association, among various other representative organizations.

We do not make contributions either in kind or in cash to political parties or related institutions; we do not attempt to influence our employees to participate or to back a particular political party. **SO5, SO6**

The company does not need to conduct studies regarding specific practices that are monopolistic or against free competition because the majority of Mexichem's products are generic commodities, and we compete in the international markets. Proposals regarding the acquisition of companies are communicated in a timely manner to the appropriate agency regulating free competition in the countries of origin of these companies. If a condition is imposed to allow the acquisition, we fully comply with it, and the acquisition is carried out with full disclosure to the public through communications with stakeholders. **SO7** During 2011 our subsidiaries were subject to no fines. **SO8**

#### **4.4 Management systems and policies**

Mexichem and its major operating units around the world have established and accredited management systems that meet the international standards ISO-9001, ISO-14001, and OSHAS 18001 for its three Product Chains. Likewise, the operating units dedicated to the production of chemicals



(Chlorine-Vinyl and Fluorine chains) have signed on to the voluntary Responsible Care Program that operates under the supervision of the Chemical Industry Associations in Mexico, Colombia, the United States, and the United Kingdom.

In accordance with Mexichem's environmental and safety certifications strategy, all operating units must obtain, at a basic level, Clean Industry certification in Mexico or its equivalent in other countries. An outside accrediting agency must perform the audit. We are currently working on the environmental analysis and the action plan for mining operations and ore plants in Mexico that do not yet have this accreditation, in order to begin the process. ISO-14001 certification is the second level of certification in the strategy, and the third level is OHSAS 18001 certification.

The Mexichem companies that operate in the chemical sector, have signed the voluntary Responsible Care commitment, and have proven to have fulfilled all the safety-management practices in this system have the option of being exempt from obtaining OHSAS 18001 certification. At Mexichem, we have a comprehensive safety, environmental, and quality policy that is communicated to and understood by the entire organization. This policy establishes that Mexichem and its subsidiaries consider safety to be the most impor-

tant consideration in its activities. At the same time, we practice environmental stewardship, manufacture high-quality products, and provide quality services to meet the needs of our clients. We realize that our employees are our primary strength.

### Commitments

- Prevent accidents based on the principle that safety is everyone's responsibility.
- Maintain the health of our employees.
- Prevent contamination when carrying out our activities.
- Continually improve the efficiency of our management system through the establishment of goals.
- Comply with current applicable legislation and with any other requirements to which the organization's management system is subject.

To achieve the above, we encourage our employees, vendors, and clients to play their parts as we commit the resources necessary to achieve excellence.

If you would like more information, please visit :  
[http://www.mexichem.com/English/politica\\_seguridad.html](http://www.mexichem.com/English/politica_seguridad.html)







## 5. Economic Dimension

### 5.1 Creation of wealth and prosperity

Our sales performance in 2011 was MXN47.310 billion (USD3,846 million) and EBITDA was MXN10.271 billion (USD830 million). These results show a sales increase of 34% and an increase in EBITDA of 26%, which once again surpassed the goal established in the 20/20/20 vision.

Mexichem	2011
Net Sales	47,310
Cost of sales	31,397
EBITDA	10,271
Total assets	60,457
Total debt	36,392
Stockholders' equity	24,065
Market capitalization	79,038

Figures in millions of Mexican pesos 2.8

Despite the global economic crisis during the past two years and the increase in the price of raw materials, energy in particular, we have a solid financial structure that is capable of weathering this negative cycle. Our strategy of creating wealth and prosperity is successful due to the following factors: implementation of our plans, adding value to our raw materials, continuation of vertical integration, geographic diversity of our markets, and discipline in the reduction of costs and investments.

The increase in sales is due mainly to the acquisitions of Policyd, Plásticos Rex, and Alphagary and better prices in the fluorine (refrigerants) and chlorine-vinyl (PVC resins and compounds) chains.

As for the EBITDA, the increase is due to new synergies from these acquisitions, which materialized in the results during the year and demonstrated the effectiveness of our strategies as well as our ability to be successful even in an unfavorable macroeconomic climate.

### 5.2 Economic performance

#### On growth EC1

Mexichem reported its results at the close of 2011. Consolidated sales increased 34% over the previous year, totaling MXN47.31 billion as a result of better sales prices (up 14%) and an increase in volume sold (up 20%). These increases resulted from growth in our current business and from the acquisitions of Ineos-Fluor in the second quarter of 2010, Policyd and Plásticos Rex in November 2010, and Alphagary in January 2011.

#### Efficiency and productivity

Earnings before interest, taxes, depreciation and amortization (EBITDA) for the year were MXN10.271 billion, 26% higher than in 2010. This increase is the result of better sales performance, as well as synergies generated from the incorporation of the new acquisitions into our business chains.

Net income in 2011 was MXN1.202 billion, or 31% lower than the previous year, as it was affected primarily by the devaluation of the Mexican peso by 12.6% (from MXN12.38 to MXN13.94 per dollar).

Accumulated gross cash flow in December 2011 was MXN7.129 billion, 24% higher than in the same period the previous year.

At the close of 2011, our net debt in terms of dollars was USD929 million, an increase of USD65 million or 7% when compared to the close of 2010.

The net-debt-to-EBITDA ratio remained at 1.26 times, below the internal goal set at 2.0 times. Only 18% of our debt is short term.

## Analysis and discussion of results

Mexichem S.A.B. de C.V., in millions of constant pesos as of December 31, 2011 and 2010.

Income Statement	2011	2010	Variation
Net sales	47,310	35,195	34%
Cost of sales	31,397	22,856	37%
Gross profit	15,913	12,339	29%
Operating expenses	8,630	6,694	29%
Operating income	7,283	5,645	29%
Comprehensive financing cost	2,809	835	236%
Income before Income taxes	4,474	4,810	-7%
Income taxes	1,697	751	126%
Income from continuing operations	2,777	4,059	-32%
Discontinued operations, net	-66	-146	-55%
Consolidated net income	2,711	3,913	-31%
EBITDA	10,271	8,124	26%

### 2.8. ECI

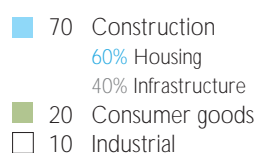
The government of Mexico has a policy of offering financial incentives for research and development. During 2011, we received an incentive grant for research and technological development in the amount of MXN30.3 million (USD2.42 million) from the *Consejo Nacional de Ciencia y Tecnología* (CONACYT) (the National Council on Science and Technology). <sup>EC4</sup>

### January 2011

The acquisition of Alphagary from Rockwood Holdings, Inc., was successfully completed on January 7, 2011, and was the most significant economic event for the organization in 2011. Alphagary is a manufacturer of compounds and has plants in the United States and Europe. This purchase will give Mexichem a greater presence on the North American market and will allow us to take advantage of Alphagary's technology. <sup>2.9</sup>

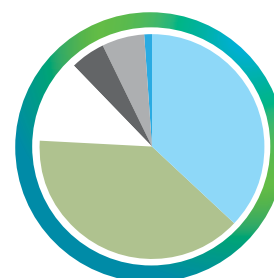


Sales by sector (%)



### 5.3 Added value broken down by country

The geographic diversity and efficiency of our operations allow us to maintain a leadership position in America and a presence in Europe and Asia. Efficient operations in 18 countries with 55,000 points of sale, allow us to meet the needs of each specific market. The breakdown of sales by geographic area is:



Participation in sales by geographic area - destination (%)





## 5.4 Impact of investments in social infrastructure

Mexichem Fluor makes the following investments in social infrastructure in the zones of influence around the Fluorite Mine in Villa de Zaragoza, San Luis Potosí, Mexico.

- Construction of a 2-km road for the community of La Alberca in the municipality of Villa de Zaragoza, Mexico. The community now has access to the town of La Presa and its water supply. The investment made was USD28,141.
- In the community of La Salitrera, facilities, machinery, raw materials, and training were brought in for members of the community to operate

a brick factory (blocks), allowing them to build, modernize, expand and improve rural housing. The community provides the workforce needed to produce these construction materials and makes a nominal payment to purchase them, ensuring the program's profitability and self-financing in the future. The investment was USD25,000 and USD6,500/year to operate.

- Construction of a secondary school for young people in La Salitrera and neighboring communities. The community has since improved the school by building a laboratory, computer workshop, and break area. Sixty students are currently enrolled with an investment of USD130,000, plus USD10,500/year to finance school supplies and teachers' salaries. EC8

### Mexichem is included in the Sustainability and Social Responsibility Index of the Mexican Stock Exchange (BMV)

The Mexican Stock Exchange (*Bolsa Mexicana de Valores* or BMV) recently created a Mexican Sustainability Index of companies listed on the Stock Exchange, similar to those found on the New York, London, and Dubai markets.

Companies included in the Index were selected independently by two ratings institutions that specialize in corporate responsibility: the EIRIS Empowerment Responsible Investment based in the UK, and the Universidad Anáhuac, based in Mexico.

Mexichem and 22 other companies were awarded the Sustainable Company Seal by the qualifiers for receiving a higher-than-average score from the 3,000 international issuers.

The qualification procedure was based on international standards defined by the United Nations Global Compact, the Organization for Economic Cooperation and Development, the World Bank, and the ISO 14001 / Clean Industry.

In the evaluation, 50% was given to environmental performance, 40% to social responsibility, and 10% to corporate governance. All the companies listed on the Stock Exchange meet the corporate governance requirements established in the *Ley del Mercado de Valores* (Securities Market Law).

The BMV announced the launch of the Sustainable IPC on December 8, 2011.

The share series with a float (total number of shares available for trade on the open market) of at least 30% and/or whose float-adjusted market capitalization at the time of the selection would have been higher than MXN10 billion, were selected.

### About the ratings organizations

EIRIS Empowerment Responsible Investment has more than 27 years of experience in environmental, social and corporate governance analysis of companies. EIRIS analyzes companies that are included on the FTSE4good Global Index from the London Stock Exchange, Johannesburg, and Dubai, among others. EIRIS is represented in Mexico by Ecovalores, a nonprofit organization dedicated to the analysis of sustainability and corporate governance in businesses.

Universidad Anáhuac is recognized internationally as the regional affiliate of the Global Corporate Governance Forum (GCGF). It has participated with the Organization for Economic Cooperation and Development (OECD) and with the World Bank to promote good corporate governance around the world.

Source: Mexican Stock Exchange (BMV).. [http://www.bmv.com.mx/wb3/wb/BMV/BMV\\_repositorio/\\_rid/223/\\_mto/3/Boletin\\_de\\_prensapdf.pdf](http://www.bmv.com.mx/wb3/wb/BMV/BMV_repositorio/_rid/223/_mto/3/Boletin_de_prensapdf.pdf)





## 6. Social Dimension

### 6.1 Relationship with stakeholders

#### 6.1.1 Identification and analysis of stakeholder expectations 4.14, 4.15, 4.16

The results from the study of stakeholder expectations reflect the company's opportunities and challenges in fulfilling its social responsibility

- **Investors:** Greater return on their investment through constant, sustainable growth.
- **Employees:** Stimulating and safe work environment, training and development at work, career plans and opportunities for advancement, compensation that reflects criteria of internal equity and external competitiveness, performance management, proper treatment, and family safety and well-being.
- **Communities:** Opportunities for employment, purchasing from local suppliers, funding for education, access to water and plumbing, decent housing, and support to productive enterprises.
- **Clients:** Quality and performance, competitive prices, business leverage, working together on strategic matters for sustainability of the value chain.
- **Suppliers:** Long-term commercial alliances, mutual support, prompt payment and better treatment.
- **Governments:** Alliances for community development and the protection of public assets.
- **Universities:** Support for research and development in science and technology, joint creation of new products and applications, ongoing opportunities in research and development, two-way flow of knowledge between business and universities.
- **Means of communication:** Timely news announcements and access to industrial knowledge of interest to the public.

A discussion group was held with citizens representing various stakeholder groups, allowing them to express their concerns, while informing them of developments that could affect them. The impacts referred to six core themes, three internal, three external:

- **Internal core themes:** Human rights, environmental and social performance
- **External core themes:** Product responsibility, labor practices, and economic performance

The results of the study on stakeholder expectations with respect to our operations were:

#### 1) Environmental performance:

- I. Emissions, effluents
- II. Biodiversity

#### 2) Social performance:

- I. Local communities
- II. Industrial safety

4.17

We explained to the discussion group the actions currently being taken and subjects participants were most interested in were considered for inclusion in the report. Group members were selected from clients, suppliers, civil organizations, community, government, academia, and sustainability experts.

In general, the public sector, academia, professional associations, and the media demonstrate interest in establishing partnerships that strengthen the practice of social responsibility with a focus on local development and establishing a collective agenda based on the principles of the United Nations Global Compact and Agenda 21.

#### 6.1.2. Communication with stakeholders 4.17

##### Investors

Mexichem is committed to providing its shareholders with reasonable, sustained profitability. We use various means to communicate with our investors:

- Annual financial report
- Quarterly reports
- Meetings designed by brokers for institutional investors (buy-side and sell-side)
- Presentations for potential investors in the United States, South America, and Europe to announce the issuer's recent projects and news

- Our web page:  
<http://www.mexichem.com>
- Telephone conferences
- Scheduled formal meetings (one-on-one)
- Relevant notices through the Mexican Stock Exchange

### Employees

Mexichem recognizes that its executives and employees are its most valuable capital. It is committed to respecting the dignity of all employees and to fostering a work environment where they can grow both professionally and personally.

Communication between company management and employees for the purpose of direction, expectations, monitoring performance, conflict resolution, and general information is carried out through formal channels, such as meetings, interactive news sources (Mexichem intranet and internet sites), union dialogue, joint committees, available information systems, and others.

One of the formal ways we engage in dialogue with our employees is through a confidential, anonymous survey called "Toma de Pulso" (Taking the Pulse), which is taken every two years by all of our employees—both unionized and nonunionized. Other forms of dialogue are messages via the

Mexinet intranet, regular mail and e-mail, bulletin boards, and face-to-face meetings with immediate supervisors and executives.

### Communities

As part of our culture and our values, social responsibility applies to each and every one of the communities in which we operate. We maintain active channels of communication with each stakeholder to understand their perceptions and expectations, to identify opportunities, and undertake joint initiatives. We facilitate this communication in many ways, such as governmental and professional association roundtables, academic events of interest to our chains, and meetings with social associations, opinion makers and international authorities.

### Clients and suppliers

For Mexichem and its employees, our clients are strategic allies who we support in their growth and development. We work with suppliers who share the highest levels of quality, integrity and honesty, seeking mutual benefit that adds efficiency to the vertical integration of our product chains. We take yearly satisfaction surveys that help us identify needs, and we have a supplier evaluation system that allows us to identify areas of common opportunity.

## Colombia

### Online bulletin: "PVC and Sustainability"

In 2011, Mexichem Resinas Colombia distributed to its PVC customers a new online informational bulletin dedicated to providing news and more significant global updates regarding this material in the context of sustainability. The publication's objective is to promote better understanding of the advantages and technological solutions that the more innovative applications provide for addressing challenges to sustainable development. The editions of this publication can be viewed online at [http://www.mexichem.com.co/index\\_english.html](http://www.mexichem.com.co/index_english.html)

The bulletin is also distributed to other interested stakeholders, such as employees of Mexichem's PVC resin and compound plants, suppliers, contractors, the media, governmental agencies, and academic institutions. During 2011, we distributed four editions highlighting a total of twelve highly topical news items and public interest stories.





## 6.2 Management of human capital

### 6.2.1 Labor practices and indicators

Mexichem has defined strategic guidelines that direct the activities of each of the company's areas and employees.

One of them, referring to human resources, states: "To have the best people by establishing processes that allow us to attract, retain and develop talent." To address the needs and requirements of the business strategy, we implemented plans to develop leadership and innovation.

In December 2011, we had a total workforce of 11,173 employees throughout the various countries in which we operate. The majority (86%) of employees are male and most employees (7,578 people) work in the integral solutions chain operations, followed by chlorine-vinyl (2,165 people), fluorine (1,225 people) and corporate (205 people). **LA2, LA13**

#### NUMBER OF EMPLOYEES BY CHAIN

Number of Employees	11,173
Chlorine-Vinyl Chain	2,165
Corporate	205
Fluorine Chain	1,225
Integral Solutions Chain	7,578

Directors	37
Managers	329
Supervisors	906
Other Levels	9,901
Women	1,557
Men	9,616
Individual Employment Contract	4,719
Collective Bargaining Agreement	6,454

**LA13**

All of our employees have a full-time open-ended employment contract that provides them with work stability. The above table shows the number of directors, managers, supervisors and subordinate personnel. It also includes the proportion by gender and type of contract: individual (nonunionized) or covered by collective-bargaining agreements (unionized). We are not including subcontractors, those who work independently, or part-time workers. **LA1**



#### Employees by gender

- 86% Men
- 14% Women



COUNTRY	NUMBER OF EMPLOYEES	WOMEN	MEN	INDIVIDUAL EMPLOYMENT CONTRACT	COLLECTIVE BARGAINING AGREEMENT
Argentina	305	30	275	94	211
Brazil	2,549	502	2,047	1,203	1,346
Colombia	1,864	277	1,587	611	1,253
Costa Rica	297	37	260	108	189
Ecuador	551	61	490	148	403
United States	328	48	280	328	0
El Salvador	66	14	52	46	20
Guatemala	213	21	192	88	125
Honduras	84	22	62	56	28
Mexico	3,620	319	3,301	1,286	2,334
Nicaragua	31	10	21	23	8
Panama	131	32	99	65	66
Peru	469	42	427	159	310
Venezuela	298	60	238	137	161
United Kingdom	347	80	267	347	0
Japan	20	2	18	20	0
<b>TOTAL</b>	<b>11,173</b>	<b>1,557</b>	<b>9,616</b>	<b>4,719</b>	<b>6,454</b>



#### Employees by age range

■	12%	up to 24
■	39%	25 - 35
■	27%	36 - 45
□	17%	46 - 55
■	5%	> 56

The highest percentage of our employees with individual contracts is 25-35 years old.

During 2011, the turnover index for nonunion employees was 5.12% and for employees under a collective bargaining agreement was 2.14%. These results are due to personnel leaving and reorganization to improve operating efficiency through acquisitions.

#### Personnel turnover at Mexichem

% Turnover directors	2.91%
% Turnover managers	1.16%
% Turnover supervisors	1.24%
% Turnover (other positions)	1.85%
% Turnover, nonunionized	5.12%
% Turnover, unionized	2.14%
% Total turnover	3.63%

Annual turnover in percentages: 20% are female employees, and 80% are male. **LA2**

#### 6.2.2 Wages and benefits

Mexichem pays equitably and fairly, in accordance with labor market standards, taking into account the duties and responsibilities of the job. During 2011, the total compensation paid to employees (wages and benefits) was MXN4,428,034,069 (USD349,765,724). **EC1**

Full-time employees receive more benefits than part-time or temporary employees, such as number of vacation days, vacation bonus, lunch or food vouchers and company contributions to a savings plan. **LA3** Mexichem offers benefits that exceed those required by current labor law, such as a savings fund, cafeteria service, subsidizing of major medical expenses, pension plan, life insurance, productivity bonus, uniforms, and support for recreational and sports activities, among others.

The following table describes the main benefits offered to Mexichem employees.

### Benefits for Mexichem employees LA3

Benefit	DESCRIPTION	COUNTRY	COMPANY
Savings Fund	Additional amount equivalent to withholding a percentage of the employee's wages for savings. A certain percentage of one's salary is deducted and invested in a full-service bank.	Mexico, Brazil, Colombia, and Costa Rica	20,13,21,23,11,26,29,32,1,4,7,8,9
Food Vouchers	Amount in addition to wages given in vouchers that can be exchanged for consumer goods. Delivered periodically.	Mexico, Brazil, Colombia, Panama, and Peru	1,2,4,7,8,9,11,13,32,17,18,20,21,22,23,24,26,30,31
Year-end Bonus	Special annual payment delivered to employees, in addition to wages. Can be in cash or by agreement between the employer (payer) and the employee (recipient). The objective is to support the employees, who use the bonus to meet year-end expenses.	Mexico, Argentina, Brazil, Colombia, Costa Rica, United States, El Salvador, Guatemala, Honduras, Nicaragua, and Peru	1,3,4,5,6,7,8,9,10,11,12,13,14,15,16,18,19,20,21,22,23,24,25,26,27,29,30,32,33
Vacation Bonus	The financial benefit received by employees during vacation periods, which they are entitled to annually.	Mexico, Argentina, Brazil, Colombia, Ecuador, United States, Peru, and Venezuela	1,2,3,4,5,6,7,8,9,10,11,13,19,20,21,22,23,24,25,26,27,28,29,30,32,33
Insurance Covering Medical Expenses	Insurance through medical or surgical treatment coverage that is offered in case of an accident, illness, or disease that endangers their health or the health of their financial dependents.	Brasil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, México, Nicaragua, and Panamá	1,2,3,7,8,9,10,11,12,13,14,15,16,17,19,20,21,22,23,24,25,26,30,31
Life Insurance	Financial support offered through an insurance agency, which covers workers for risks that threaten their lives, body, or health. Granted to the employee's beneficiary in case of death by natural causes or accident.	Argentina, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, and Venezuela	1,2,3,4,6,7,8,9,10,13,14,15,16,17,18,19,20,21,22,23,24,25,26,28,30,31,32,33
Personal Accident Insurance	Financial support provided by the company through an insurance agency which covers the worker for personal accident risk.	Colombia, Ecuador, and Venezuela	2,3,8,28,34
Cafeteria	Food available in cafeterias during scheduled times to reduce the employee's expenses and create satisfactory working conditions.	Argentina, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, and Venezuela	1,2,3,4,6,7,8,9,12,13,14,15,16,18,21,23,24,26,27,28,29,30,34

- 1 Mexichem Brasil
- 2 Mexichem Plastigama S.A.
- 3 Mexichem Celta S.A.S.
- 4 Mexichem Colpozos S.A.S
- 5 Mexichem América Inc.
- 6 Mexichem Argentina S.A.
- 7 Mexichem Bidim L.T.A.
- 8 Mexichem Colombia S.A.S.
- 9 Mexichem Costa Rica, S.A.
- 10 Mexichem Derivados Andino
- 11 Mexichem Derivados Colombia

- 12 Mexichem El Salvador, S.A.
- 13 Mexichem Flúor
- 14 Mexichem Guatemala, S.A.
- 15 Mexichem Honduras, S.A.
- 16 Mexichem Nicaragua, S.A.
- 17 Mexichem Panamá, S.A.
- 18 Mexichem Perú, S.A.
- 19 Mexichem Resinas Colombia
- 20 Mexichem Servicios Compuestos
- 21 Mexichem Servicios Derivados
- 22 Mexichem Servicios Resinas

- 23 Mexichem Servicios Transformados
- 24 Mexichem Servicios Administrativos
- 25 Mexichem Servicios Colombia
- 26 Mexichem Servicios Flúor
- 27 Pavco de Occidente S.A.S
- 28 Pavco de Venezuela, S.A.
- 29 Plásticos Rex de México
- 30 Mexichem Plastubos
- 31 Riegos de Chiriquí, S.A.
- 32 Servicios Polycyd, S.A.
- 33 Tuberías y Geosistemas de Perú
- 34 Mexichem Tubosistemas, S.A.

Mexichem offers its nonunionized employees a voluntary pension plan, the purpose of which is to encourage savings for retirement, so that these employees can have a pension fund. **EC3** We have established a contribution plan created with contributions from both the employee and the company, which are deposited with a financial institution and are invested in fixed-income instruments. The individual accounts that can be reviewed via the internet. A technical committee charged with administering this plan analyzes the best strategies to diversify the investment among different types of financial assets, with the goal of obtaining the highest return from the market.

Mexichem uses labor legislation as a reference for wage administration. Market information is used as a basis for generating wage tabulators and defining total compensation for the company's employees. These tabulators include information related to the type of sector and the duties and responsibilities of each position. At no time is gender an obstacle for setting a fair and equitable remuneration. On the average, Mexichem's various operations and industries in the different countries, regions and economic zones offer a standard starting salary of three times the local minimum wage. **EC5**

### Base salary ratio women – men **LA14**

Rank	W	M
Assistants / Coordinators	0.95	1.05
Supervisors	0.98	1.02
Operational Leaders / Superintendents	0.93	1.07
Managers	0.99	1.01
Directors	1.19	0.81

Average = 1

### 6.2.3 Union affiliation

Of our employees, 58.4% (6,529) are part of a collective-bargaining agreement. **LA4**

Organizational changes are communicated in a timely manner to union offices and, if there are modifications to the agreements, these are available to view immediately after revising the contracts or collective-bargaining agreements. **LA5**



Employee distribution  
by type of contract (%)

- 58.4 Unionized employees
- 41.6 Nonunionized employees

### 6.2.4 Training and development

In 2011, employees undertook 241,430 hours of training: 69% for unionized employees and 31% for nonunionized. Main areas of training this year were human rights, sustainability, health and safety, orientation of new employees, information technology and process administration. Each Mexichem employee received an average of 23 hours of training. The total amount invested in training activities in 2011 was USD671,634. **LA10**

### Training Indicators

Country	Man-Hours	USD Amount
Argentina	89	0
Brazil	41,900	385,380.25
Colombia	40,608	82,716.88
Costa Rica	2,781	6,665.50
Ecuador	22,279	72,433.37
El Salvador	2,681	9,761.82
Guatemala	2,668	5,703.92
Honduras	1,226	4,094.33
Mexico	121,788	32,129.16
Nicaragua	5	0
Panama	21	633.50
Peru	4,200	10,706.17
Venezuela	1,184	61,408.88
<b>TOTAL</b>	<b>241,430</b>	<b>671,633.78</b>

As part of our program to strengthen capabilities, we support skills management and continuing education for all personnel. This increases the intellectual capital of the company and fosters employment opportunities for personnel throughout their working life. It is also a factor for employees in the final stage of their professional career; as the experience and training acquired allows them to provide valuable services to other companies and to society. **LA11**

### Education of Mexichem employees

Year	2011
Education of nonunionized employees	%
Professional degree (only)	56.18%
Postgraduate (graduate work/specialization)	18.91%
Master's	8.78%
Doctorate	0.17%
Tecnological/Technical	15.96%
Grand total	100

### Distribution of Mexichem employees by areas of specialization

Area of specialization	%
Agricultural Sciences	6.6%
Health Sciences	1.0%
Natural and Exact Sciences	2.2%
Social and Administrative Sciences	33.5%
Education and Humanities	1.2%
Engineering and Technology	35.3%
Not identified	20.2%
Grand total	100.0%

In order to encourage the development of its human capital, the company performs an annual review of all nonunionized employees. Each employee receives feedback from their immediate supervisor and together they agree on work goals that align with both the company's strategy and the individual's personal development objectives. These evaluations are the basis of career planning for executives and personnel with high potential and leadership. **LA12**

### Mexichem Integral Solutions receives Jalisco Recognition of Excellence in Training and Instruction

The Mexichem Integral Solutions plant in Poncitlán, Jalisco, was awarded the Jalisco Recognition of Excellence in Training and Instruction by the *Delegación Federal del Trabajo*, during the XXVII Semana Estatal de Cultura Laboral at the *Universidad Autónoma de Guadalajara*.

This recognition rewards the completion of training and instruction of personnel working at the company, with the ongoing commitment to continue improving training activities for workers.

The importance of instructors within the company, members of the *Comisión de Capacitación y la Representación Sindical* (Commission on Training and Union Representation), was emphasized, as were the company's management, innovation, vision, and strategies.

We were accompanied by representatives from Jalisco's Department of Labor, from the *Delegación Federal del Trabajo*, from the *Universidad Autónoma de Guadalajara*, and from the Consulate of the Embassy of Spain.



Mexico



### 6.2.5 Origin of employees

We hire people who live in areas surrounding the business units. This supports the community by offering jobs and encouraging a better quality of life with more family time, as employees do not lose time in long commutes.

At the end of December 2011, Mexichem had 37 directors working at corporate and at the integral solutions, chlorine-vinyl, and fluorine chains. Ninety-three percent of executives are natives, a significant fact considering that Mexichem is a global company with a presence in many countries. **EC7**

### 6.3 Health and safety of workers

Our employees, both those with an individual employment contracts and those who are part of a collective bargaining agreement, are represented by Occupational Health Committees. The function of these committees includes making proposals to improve the health and safety of workers, checking compliance with established agreements, inspecting plants to uncover unsafe conditions, following up on major deviations, discussing any accident investigations, and promoting activities aimed at improving employee health and safety. **LA6**

All Mexichem employees are represented on the various Health and Safety Committees. The committees comprise management personnel and subordinate workers. Management and the unions are equally represented on these committees, ensuring equitable representation in decision-making.

This meets the legal provisions of the countries in which our plants are located. In locations with a large number of employees, more than one committee may be formed.

For Mexichem, the most important factor in carrying out our activities is employee safety, with the goal to achieve zero accidents. Our operations are in the industrial sectors of mining, chemistry, and industrial manufacturing, where operating discipline is essential to achieve world-class levels of safety, health, and environmental protection. The objective of our safety policy and all of our management is to ensure that we operate with no accidents. The responsibility to continually meet this goal falls on all company employees.

INDICATORS OF OPERATIONAL SAFETY					
Indicator / year	2007	2008	2009	2010	2011
Incapacitating accidents	179	185	165	131	180
Days lost due to disability	10,079	3,253	3,251	2,153	4,697
Fatal accidents	2	1	0	2	1
Man-hours worked	19,208,894	17,708,791	19,451,891	19,558,905	22,979,677
Incidence rate *	1.8	2.1	1.6	1.3	1.5
Severity rate **	105	36.7	33.4	22.0	40.8

\* IF = (Number of incapacitating accidents/Man-hours worked) x 200,000

\*\* IS = (Number of days lost/Man-hours worked) x 200,000

Mexichem's 2011 global results show a positive trend in almost all performance indicators. Nevertheless, we deeply regret the one fatality that occurred in our fluorite mine. We thoroughly investigated the root cause and corrective measures have been instituted.

The number of incapacitating accidents unfortunately increased over the previous year, despite efforts invested in safety programs to encourage self-protection and self-inspection, respect for work procedures, and the use of personal safety equipment as well as committed participation at all levels of the organization. This compels us to adopt additional measures to control risks and reduce the possibility of accidents, since accidents in our industries can be fatal.

Safety performance values reported refer to the chlorine-vinyl, fluorine and integral solutions chains. No accidents were reported that resulted in disability of Mexichem personnel, at the following plants:

- **Chlorine-Vinyl Chain:**

El Salto, Mexico; Tlaxcala Resinas, Mexico; Tlaxcala Compuestos, Mexico; Altamira Resinas, Mexico; Quimir Tultitlán, Mexico; and Quimir Lechería, Mexico.

- **Fluorine Chain:**

St. Gabriel, United States; Runcorn, United Kingdom; Rocksavage, United Kingdom; Mihara, Japan; and Río Verde, Mexico.

- **Integral Solutions Chain:**

Mérida, Mexico; Tubosistemas, Ecuador; Floresta, Brazil; and Bidim, Brazil.

Eight plants in Mexico maintained the lowest premium for risk level, derived from the annual review of the accident rate by the Mexican Social Security Institute (IMSS). [LA7](#)

### **Mexichem Integral Solutions, Monterrey plant, 5 years with no incapacitating accidents**

The Monterrey plant achieved 5 years with no incapacitating accidents, as of January 2011.

This achievement is backed by a well-established culture in which employees live safety day in and day out. Employees observe established procedures, act responsibly, look out for each other, and implement safety measures established to carry out each of their activities.

We congratulate and acknowledge all plant personnel for their commitment, professionalism, and positive attitude over these 5 years. We also send congratulations to the family members of each of our employees, who have indirectly participated in this achievement by motivating them to be careful at work.



Mexico

### Mexichem Derivados plants at El Salto and Coatzacoalcos, awarded by the Chlorine Institute

The Chlorine Institute, headquartered in Houston, Texas, in the United States, gave out awards and recognitions to its affiliates for their safety results.

The Mexichem El Salto plant received the Chairman's Safety Excellence Award, given by the president of the Chlorine Institute for reaching 650,000 consecutive hours with no incapacitating accidents; leaks; release of hazardous chemical materials; or process incidents that affect plant personnel, equipment, facilities, the community, or the environment. This distinction is the highest awarded by this entity. The El Salto plant also received the Personnel Safety Certificate for zero incapacitating injuries, and the Process Safety Award, for the fourth consecutive year.

The Coatzacoalcos plant received the Process Safety Award for completing eight consecutive years with zero emissions of hazardous chemical materials and zero process incidents that affect plant personnel, facilities, the community, and the environment. The plant also received recognition for being under the Institute's established limit.



### Health education and prevention programs LA8, SO1

In celebration of our "Health, Hygiene and Safety Weeks" at our locations, we provided education, training, and advice in the prevention and control of risks, through conferences led by subject-matter experts. We also invited our workers' families so they could see the importance of their participation, so that both our employees and their families could acquire good habits and improve their health.

As part of the activities created in the medical programs, we provided information to our personnel aimed at preventing the risk of the most common serious illnesses in the various geographic areas in which our plants are located. For example we offer talks and campaigns on high blood pressure, diabetes, obesity, smoking, influenza, stress, alcoholism, cancer and AIDS, with a focus on preventive health measures, which have been linked to productivity.

Likewise, our physicians and safety personnel carry out epidemiologic surveillance programs, periodic medical examinations of our workers, vaccination campaigns, inspection of food and cafeterias, and visits to work areas. We also offer information on health and hygiene through bulletins on bulletin boards and periodic murals, all of which have helped us achieve health care results.

With regard to occupational illnesses in our salt and fluorite mining facilities, we can indicate that no cases have been recorded at the salt plant in its 30 years of operation.

At Mexichem, the occupational illness prevention programs include:

1. Protection and Conservation of Hearing Program (physical examination, ear examination, and audiometry for each worker once a year).
2. Protection and Conservation of the Respiratory Tract Program (physical examination of lungs, annual spirometry, and examination of the thorax every two years).
3. Protection and Conservation of Sight Program (physical examination, assessment of the eye and its attachments, study of campimetry and visual acuity for farsightedness and nearsightedness each year).
4. Program Promoting and Encouraging Health, one talk each month.

The purpose of the safety programs is to prevent and protect the health of workers from risks, damage, occupational illnesses, and/or accidents that could arise in the workplace, through preventive and/or corrective measures geared towards improving safety and hygiene conditions. Labor agreements with unions include health and safety clauses for Mexichem employees. [LA9](#)

The preventive safety programs include:

- Safety Orientation for New Employees
- Safety Orientation for Contractor Personnel
- Safe Handling of Chemical Products
- Material Safety Data Sheets and Emergency Sheets
- Investigation of Accidents and Incidents
- First Aid
- Major Emergencies

## 6.4 Promotion and protection of Human Rights

### 6.4.1 Mexichem's Human Rights Policy

Mexichem is a signatory to the United Nations Global Compact through one of its Colombian subsidiaries, and is evaluating its strategy to manage corporate support for this initiative because it shares and fully implements its guidelines on promoting and protecting human rights, environmental stewardship, the ethics of transparency, and the fight against corruption.

Mexichem's Human Rights Policy is approved by the CEO. We are continually presenting workshops to spread awareness at all levels of the organization, covering approximately 70% of its employees in Spanish-speaking countries. In 2011, 6,238 hours were dedicated to training employees on Mexichem's human rights policies and procedures. [HR3](#)

The above policy covers the rights listed in the International Human Rights Letter and the principles related to the fundamental rights established in the ILO Declaration. It sets criteria regarding respect for diversity, nondiscrimination and respect for coworkers' rights in the work environment, without regard to age, gender, race, religion, nationality, physical condition, social condition, sexual orientation, political creed, or any other factor. It also establishes provisions on environmental protection and respect for communities in the scope of Mexichem's business. Implementing this policy commits employees as well as the company's suppliers and contractors.

The main objective for the year was to officially adopt Mexichem's human rights policy and distribute it internally. The Corporate Sustainability Committee led the process to define the policy and have it approved by upper management. It also headed the communication process, so that all employees would have a clear picture of Mexichem's human rights position and be able to reflect the policy in daily actions. Likewise, the committee developed monitoring procedures to guarantee respectful business practices in our operations.



Mexichem held workshops to train personnel and share information on Human Rights during the second quarter of 2011. The premise for these workshops is that only when made aware of our rights and duties will we act in a manner that is consistent with respect for human rights and create discrimination-free environments that promote equality. The process included

- Preparation of educational materials for the Human Rights Instructors Workshop.
- Creation of a conceptual document that includes such themes as: what are human rights, historical background, how human rights are related to businesses, evaluation of risks and opportunities, and understanding Mexichem's strategy
- Development of a support guide that defines the contents to be covered by the instructors. Presentation to introduce, through teaching, ways in which organizations can manage sustainability and how it relates to the theme of human rights in companies and at Mexichem.
- Manual of questions and answers: support document for instructors that concisely addresses the most frequent questions.
- Video inviting reflection, with a time to share and review conclusions at the end of the workshop.
- Publication of a brochure, *Respect, our Policy*, delivered to each employee who completed training, which includes an insert for feedback regarding the theme Stand Up for Your Rights.

- Human rights campaign, carried out in three phases: expectations, launch, and follow-up. Each of these phases includes messages to be distributed through posters, e-mail, screen savers, and wallpaper.

We see the promotion of human rights as both opportunity and responsibility. In 2012, we will continue to share our policy with employees who did not participate in the workshop and with suppliers, contractors, and distributors. We will also plan how to establish a monitoring system that guarantees respect for national and international standards.

Mexichem's Human Rights Policy and related information are available to all interested parties at the following link:

[http://www.mexichem.com/English/politica\\_derechos\\_humanos.html](http://www.mexichem.com/English/politica_derechos_humanos.html)

#### 6.4.2 Implementation of the Policy

- **Human rights in significant investment agreements.**

Mexichem seeks to ensure that respect for human rights is foundational to the growth of its operations through acquisition. Toward that end, experts in the matter review the social and human rights aspects in the due diligence process carried out when incorporating new assets into the company. **HRI**





Including human rights and ethics in our pre-acquisition analysis allows us to see a complete picture of the social responsibility of the company being acquired. It also allows us to identify opportunities and risks and to anticipate plans of action to secure and oversee these rights.

Weeks before publication of this report, Mexichem and Wavin N.V. announced the agreement on the public bid Mexichem made in 2011 for all shares of Wavin. In anticipation of this acquisition, the company's human rights were reviewed during the process of due diligence. We were aware that, due to its European origin, this company is entirely in compliance with applicable legislation in this matter.

Another recent example demonstrating how we have implemented these criteria comes from the acquisition of the company Fluorita de México. Through this transaction, Mexichem seeks to increase coverage of fluorine chain clients. We reviewed social and human rights through a study completed in the community and identified and established a plan of action to secure a healthy environment—a priority for the population in the project's area of influence.

- **Human rights in the company.**

All Mexichem employees take an introductory course about our Code of Ethics and our policies and procedures related to human rights. In 2011, 6,694 hours of employee training were dedicated to these subjects. **HR3** In 2011, no incidents of discrimination were recorded. **HR4**

Freedom of association and the right to negotiate contracts or collective-bargaining agreements is defined according to each worker's position and duties, and we vigilantly ensure these rights are respected. **HR5** The union or labor teams are responsible for facilitating the communication processes in each business unit, analyzing improvements to work systems and resolving arguments and conflicts. These tasks are carried out during period meetings with human resources and union committee representatives. Because of these actions, we had no strikes or work stoppages in 2011. **MM4** Our contracts and collective-bargaining agreements were summarized based on trust and supported by labor practices that are reviewed and updated at the work sites by work teams. These changes allowed us to improve employee satisfaction levels and employee productivity indices.

In accordance with our procedures and with labor legislation, a person must be at least 18 years old to be hired. We avoid hiring minors and respect the Human Rights Convention agreements. The minimum working age is clearly stipulated in the collective bargaining agreements. The same criteria apply to suppliers. No actions were required nor was any risk of incident detected with regard to child labor. **HR6**

As there is no risk of forced or nonconsensual labor in any of our operations, no actions were required. The Safety and Hygiene Committees, comprising equal proportions of company representatives and worker representatives, completes an evaluation. The committee inspects the plant monthly to ensure safe conditions, reduce potentially unsafe incidents, and prevent forced or non-consensual labor. After the visit, a report is written with the results of the inspection, and managers are assigned to verify that the unsafe conditions have been corrected. In addition, all personnel can notify upper management of any failure to comply or any abuse through the complaint box, either anonymously or openly, or electronically or in physical mailboxes. Our hiring agreements fully support the International Human Rights Convention and the standards of the International Labor Organization. **HR7**

All of our safety and security personnel receive training in human rights, reliability tests, and Mexichem values. This training helps prevent reputation risks and litigation from inappropriate actions. In 2011, 266 entry personnel and security guards were trained on human rights policies and procedures, which represent 55% of employees. **HR8**

#### • Analysis of human rights demonstrated by suppliers

Mexichem seeks to have its Human Rights Policy permeate all aspects of each value chain. The company is evaluating whether its suppliers comply with the policy.

The company's largest supplier in Mexico, PEMEX, is a member of the UN Global Compact and states and backs up its commitment to promote human rights principles. Occidental Chemical, another large supplier, reports how it handles and manages the protection of human rights through its GRI sustainability reports.

Mexichem has established an ongoing process for monitoring means of communication, which includes a review of suppliers in cases related to human rights, to facilitate timely awareness of any type of violation and to inform the analysis of performance in this area.

Given that Mexichem is structured in vertically integrated product chains, the company's subsidiaries become intercompany clients and suppliers: the finished product of one plant become the raw material for another until the product reaches the final consumer. We held training workshops for these intercompany suppliers, considered to be internal to the organization, to inform them of the policy and support for awareness of human rights related to our business. Human resources executives from each unit participated in these workshops and then became instructors within our own company.

We have conducted human rights analyses on 50% of our principal suppliers, and no actions have been required as a result of these reviews. **HR2**

#### • Relationship with communities

For the company, maintaining a good relationship with the community is part of its good neighbor philosophy and policy. Our hiring policy gives preference to local people. During 2011, there were no incidents related to violations of rights of original communities at sites where we operate. **HR9**

Sources:

- *Comisión Nacional de Derechos Humanos* (National Commission on Human Rights) <http://www.cndh.org.mx>
- Human and Business Rights Resource Center <http://www.business-humanrights.org/Home>
- Media monitoring services through Factivia
- Universal Declaration of Human Rights
- Fundamental Principles on Occupational Health and Safety: [http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms\\_093550.pdf](http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_093550.pdf)

## Second Communication on Progress (CoP) to the Global Compact, Mexichem Colombia 4.12

Having signed the United Nations Global Compact, we are committed to incorporating into our sustainable practices the ten principles related to human rights, labor relations, the environment, and the fight against corruption.

We established goals for improvement and present our second Communication on Progress (CoP) with initiatives that we completed in 2011.

We established our Human Rights Policy and shared it with our employees, then assumed responsibility for ensuring that it is followed in internal operations. We believe that, by being aware of our rights and duties, we will act in ways that support equality and nondiscrimination. Our 2012 goal is to continue to support this policy within the organization and extend it to our suppliers and contractors, so that human rights will be respected throughout our value chain.

With regard to the environment, we implemented a GHG emissions mitigation program and are committed to reducing GHG emissions 5% by 2013, using our 2010 emissions as a baseline. We will also continue to develop responsible environmental solutions.

We continue to manage our most valuable asset, human capital, by encouraging synergies with neighboring communities and actively participating in agreements that favor ethical business environments.

With the Communication on Progress, we restate our commitment to the Global Compact principles and to sustainability. We use the triple-bottom-line model that has guided our decisions in the economic, social, and environmental dimensions of our company over the last three decades.

Link to the mandatory progress report on the Global Compact page.

[http://www.unglobalcompact.org/system/attachments/9399/original/CoP\\_Mexichem\\_Colombia\\_S\\_A\\_S\\_PAVCO\\_2010\\_color.pdf1298671243](http://www.unglobalcompact.org/system/attachments/9399/original/CoP_Mexichem_Colombia_S_A_S_PAVCO_2010_color.pdf1298671243)



## 6.5 Management of suppliers

We give preference to local suppliers when purchasing materials and services as long as they meet quality and service standards and that their price range is competitive.

A distinctive aspect of this effort is the fact that Mexichem is structured in vertically integrated chains. This means that, from the raw materials extracted from nature, Mexichem subsidiaries become both customers and suppliers. The fin-

ished product from one plant becomes the raw material of another, until it reaches the final consumer. If we need other supplies and they are available locally, we purchase them locally as long as the criteria described above are met.

While Mexichem does not have a documented policy, 70% of orders in the chlorine-vinyl chain during 2011 were given to local suppliers. Labor hired by those contractors is generally about 90% local. We define local suppliers as those who are geographically near our facilities or within the same state.



In the Fluorine and Integral Solutions chains, the proportion spent on local supplier purchases is about 68%. The suppliers selected are those who demonstrate commitment in environmental stewardship and social responsibility. **EC 6**

Mexichem evaluates and develops suppliers based on ISO-9001 and ISO-14001 criteria. This evaluation ensures that suppliers meet quality and environmental protection requirements. This results in ongoing sales relationships that are beneficial for both Mexichem and its suppliers in terms of cost reduction and better productivity of the suppliers included in the program.



## 6.6 Product Supervision

Mexichem manages the safety of its products by following the stringent principles and practices of Responsible Care, a global, voluntary initiative from the chemical industry. We established product safety guidelines through the CID. Management monitors compliance with the guidelines at each operating site through a review of management systems, internal auditing, and evaluation of performance on the relevant indicators. One person in each product chain is in charge of product safety.

The product safety objectives focus on all stages of a product's life cycle. These objectives are reflected in corporate policies and the plans and procedures for each subsidiary. They include:

- The use or development of safer and more environmentally sound materials and products.
- The evaluation of risks associated with each product, adequate communication with interested parties, and the adoption of monitoring measures to limit potential impact.
- Compliance with applicable manufacturing standards and regulations.
- Safety in the storage, transportation, and distribution of products, in order to protect people, property, and the environment.
- Supervision of products during customer processing, use, and final disposal, to minimize adverse effects.
- Promotion of post-industrial and post-consumer recycling.

Our work to continually monitoring the performance of suppliers, contractors, and carriers; provide technical assistance to clients; and undertake initiatives related to the recycling of post-consumer products exemplifies Mexichem's commitment throughout all product lifecycle stages: supply, storage, distribution, use and final disposal. **PRI**

In the Fluorine Chain the supervision of fluorite includes the handling, transportation, and use of the mineral as a metallurgical grade flux and as acid grade. In the Chlorine-Vinyl Chain, there are three forms of salt to be supervised. In both cases, the mineral is incorporated into the new product formed, and the waste generated from the chemical transformation of the material is used for fill and compacting material. **MM11**

## Mexichem UK Limited – Winner of the Motor Transport Partnership Award

In the chemical manufacturing industry, we cannot and do not compromise where safety is concerned. Mexichem Flúor is proud of maintaining a safe work environment in its Runcorn, Cheshire, plants. It requires its carriers to fulfill the same vital role, ensuring that they adhere to the same safety objectives when transporting products from the factory.

Mexichem Flúor has established lasting partnerships with companies that share the same safety philosophy and recognition that it is necessary to stay focused on protecting safety, health, and the environment and to actively encourage a safe work environment.

The Motor Transport Awards is the most important event of the year for the UK transportation industry, with more than 1,500 guests attending. The awards, which recognize achievements in the industry, are given by a panel of independent expert judges. During 2011, the 25<sup>th</sup> anniversary of the Motor Transport Awards, Mexichem Fluor and Suttons



Transport Group received the Motor Transport Partnership Award.

Suttons also received the 2011 Motor Transport Safety in Operation Award for the fourth time, having previously received it in 2001, 2005, and 2008; both companies are very proud of this achievement.

United Kingdom

### SAFETY TRAINING FOR CLIENTS AND CARRIERS

	2008	2009	2010	2011
Clients No. of persons	366	453	288	363
Carriers No. of persons	396	255	257	160

### STATISTICS ON ACCIDENTS BY MEANS OF TRANSPORTATION

No. of accidents by means of transportation	2008	2009	2010	2011
Rail	2	1	0	1
Road	8	9	9	10
Boat	0	0	0	0
Pipe	0	0	0	0

### Waste from PET containers is converted into geotextile membranes, in Brazil

Mexichem Brazil consumes more than 120 million 2-liter PET bottles annually in its production line, helping reduce the volume going to landfills and affecting ecosystems. Mexichem Brazil reprocesses PET bottles into geomembranes.

The Bidim® blanket is produced from polyester filaments. Almost 100 thousand filaments can be produced with one PET bottle. One pound of recycled PET is equivalent to 20 bottles. The company currently consumes around 600 tonnes of the bottles per month.

All of this material is generated and processed in Brazil, and a great majority of it comes from the states of São Paulo, Rio de Janeiro, Minas Gerais, and Rio Grande do Sul.

There are numerous benefits to the environment from recycling PET bottles. As PET is a plastic derived from petroleum with a high energy component in its production process and thus in the material itself, recycling PET reduces the amount of electrical energy and petroleum used in production; in addition, it reduces the volume of trash collected. Other advantages include the generation of jobs and the lower cost of geomembranes for consumers. **PR1**



Mexichem evaluated all of its major products to find opportunities for improvement and to minimize the product's health and environmental risks. This analysis involves all product management activities, from the initial research and development to its final disposal, covering manufacturing; marketing; storage and distribution; use; and final disposal, reuse, or recycling. **PR1**

We perform risk assessments whenever new information is received, including changes in the use of the products, in the raw materials, or in the regulations. We implement measures to reduce risk as a result of this process.

#### 6.6.1 Compliance with regulations or voluntary codes

Since 2008, Mexichem has met the requirements of the European regulation REACH (Registration, Evaluation and Authorization of Chemicals) for all substances produced or imported by subsidiaries in its Fluorine and Chlorine-Vinyl Chains. We pre-registered 47 substances in 2008, and in 2010 completed their registration, classifying eight of them as priority substances. Because it possessed information on the risks of the substances being registered, Mexichem Flúor UK led registration consortiums for various fluorine compounds. In 2011, Mexican made progress in its work to complete the registration of a second group of substances; these should be completed in 2013. **PR3**

Mexichem has committed to update and openly share risk evaluations for all of the substances it produces. The Chemical Safety Reports on the substances already recorded, which include exposure scenarios, can be read by visiting the web page of the European Chemicals Agency (ECHA): <http://echa.europa.eu/web/guest/regulations/reach>

One of the objectives related to product safety is supplying all interested parties with transparent information on product risks. To do this, we offer via our website updated information on the risks and handling of Mexichem products or substances in language easily understood by nonexperts. In 2011, Mexichem Resinas Colombia published a new version of its Answers to Frequent Questions on PVC, which collates the reports of the most recent evaluation on the lifecycle of its primary applications, including risks to health and the environment.

<http://www.mexichem.com>

During 2011 there were no incidents of noncompliance with regulations or voluntary codes related to the impact of our products or services on health and safety. **PR2**

## 6.6.2 Development of safer, eco-friendly products

Mexichem's Research and Development Center (CID) incorporates support from experts connected to all our product chains in the various countries in which we operate. CID leads research and development to offer chemical products and integral solutions that have the smallest possible environmental footprint, contribute to conservation of resources such as water and energy, favor the reduction of GHG emissions, foster progress through more economic consumables, and bring essential solutions to the company.

Sustainable chemistry is the vision that guides our efforts in technology towards the development of "cradle to cradle" products and leads us to the efficient use of resources to minimize our footprint, generate value for our stakeholders, deliver solutions our clients need, and elevate people's quality of life. This all depends on the stability of the business; therefore, Mexichem seeks to strengthen its abilities, human capital, and alliances with the academic sector to generate new knowledge and better technology.

Some highlights are described below:

### • Chlorine-vinyl chain

Evaluated alternative plasticizers for PVC to incorporate them in the company's portfolio.

## Building a sustainable industry

Mexichem promotes initiatives that connect its suppliers and key clients to jointly support educational and innovative processes oriented toward raising awareness among all stakeholders of the challenges of sustainability. In addition, through these initiatives we work to strengthen the industry's ability to face the requirements of technological change and social responsibility.

The Andean PVC Forum, an entity created by Mexichem Resinas Colombia in 2004 and jointly backed by our company and other companies in the PVC product chain, develops programs of strategic interest to the value chain with the support of Acoplásticos and the University of the Andes:



### ANDEAN PVC FORUM

- Hosts biannual Andean Conference on PVC and Sustainability, bringing together industry and academic leaders and other stakeholders.
- Grants the PVC Innovation Award, which announced its 2011–2012 focus to be "Design for Sustainability"
- Makes available an interactive web site, publications, courses, and other educational activities on the Forum's themes.
- Manages group projects from the PVC value chain on topics such as recycling and good manufacturing and research practices.

More information on the Forum can be found at: <http://www.foroandinopvc.org.co/index.php?lng=en>



#### • Fluorine chain

Mexichem Fluor supports global regulation resulting from an international agreement designed to limit and reduce the potential growth of hydrofluorocarbons (HFCs). International coordination is essential for technological, economic, and environmental reasons.

It is vital that the decisions made allow society to make optimal use of HFCs. This includes allowing them to be used in a wide range of applications that provide safe, efficient refrigeration. The use of HFCs in heat pumps helps reduce the demand for fossil fuels and extends the use of renewal energy. Currently, HFCs represent approximately 1% of GHG worldwide.

During the introduction stage of HFCs, two industry consortiums, PAFT (Program for Alternative Fluorocarbon Toxicity Testing) and AFEAS (Alternative Fluorocarbon Environmental Acceptability Study) made significant investments in research and development related to HFC production. With the international cooperation of independent scientists and governmental authorities, these groups investigated the potential effects of HFCs on the environment and human health. These industrial chemical products were the most rigorously tested in history, and, for some time now, their potential to cause global warming has been known.

Even though HFCs have great advantages over other options, Mexichem Fluor, responding to the need to continue reducing environmental impact, is developing a new generation of refrigerants that maintain the excellent properties of HFCs without affecting the environment as much. They will be based on hydrofluoroolefins (HFOs) or refrigerant mixtures with HFCs. Using only HFOs cannot meet safety standards and provide adequate performance. Although they are not available commercially, they merit serious consideration as refrigerants because they have a low potential for global warming and can be used in a wide variety of applications.

#### • Integral solutions chain

Mexichem has made notable progress in the acquisition of companies and technological assets at the forefront of innovation in pipe production. An important step was our bid, in 2011, to acquire the multinational Wavin, known for its technological leadership in plastic pipe systems. The agreement, finalized prior to the publication of this report, strengthens Mexichem as a world leader in water-conduction technology. Already in previous years, the acquisition of Wavin technology made it possible to broaden the portfolio of Mexichem products and introduce to Latin America bio-oriented piping and “trenchless” solutions, as well as others that clearly contribute to resource conservation and the reduction of environmental impacts.

Several years ago, Mexichem replaced the lead-based stabilizer used in manufacturing pipes with more environmentally sound alternatives, such as organic calcium, zinc salts, and tin stearates. **PRI**

#### 6.6.3 Product information

All chemical products used or supplied by Mexichem meet the requirements of a risk communication program in accordance with Responsible Care guidelines, including adequate labeling and classification and updated safety sheets. Relevant information on the risks of each Mexichem product and handling recommendations are contained on the respective product safety sheet, which the user must read before use.

In 2011, Mexichem adopted a new corporate procedure to review and approve the material safety data sheets, using REACH as the standard of reference for their content. We began reviewing the versions in effect for all Mexichem products, starting with those registered under this regulation, and approved new versions for various fluorine compounds, phthalic anhydride, and the plasticizer DEHP. We also completed the review for PVC copolymers and homopolymers.

We continuously adjust the contents of the labels and the Mexichem product safety sheets to comply with the laws and regulations of every country, including information regarding chemical composition of each product, its physical properties, recommendations for handling, storage and safe use, and adequate disposal procedures.

Mexichem provides personal technical assistance to clients or users when they require help or additional information regarding safe handling of products, including information that supports a product's use in critical applications—for example products that must be in contact with substances destined for human consumption—or any other client need for business purposes. **PR3**

There were no recorded incidents of failure to comply with product labeling regulations during the period covered by this report. **PR4**

#### 6.6.4 Customer satisfaction

Quality management systems established in all Mexichem subsidiaries comply with ISO-9001 standards. Subsidiaries also periodically measure customer satisfaction.

We survey a representative number of clients, who evaluate various aspects of the sales relationship and give a numerical rating to reflect their degree of satisfaction with our products and services. The survey includes a rating for the client's overall level of satisfaction with Mexichem.

- In the Chlorine-Vinyl Chain, the customer surveys evaluate the following elements:
  - a) Product characteristics
  - b) Cost
  - c) Service
  - d) Communication
  - e) Logistics
  - f) Technical support
  - g) Response to complaints

In the Fluorine Chain, the satisfaction surveys cover the following items:

- a) Customer service.
- b) Service
- c) Delivery time
- d) Product characteristics
- e) Quantity

In the Integral Solutions Chain, the aspects evaluated are:

- a) Service
- b) Punctuality
- c) Quality and delivery time
- d) Frequency of visits from vendors
- e) Variety of products offered
- f) Technical assistance

The survey results showed customer satisfaction ranging between 88% and 94%. **PR5**

#### 6.6.5 Marketing communications

Mexichem abides by the codes of ethics and principles of transparency in the information it communicates to its stakeholders. All information, including marketing communications, published by the company must comply with the policies documented by Mexichem's legal department and the Department of Strategic Planning and Investor Relations. Regulation specialists from each country in which we operation review the communication to ensure that it complies with local laws and regulations as well as Mexichem's policies and Code of Ethics. This review includes marketing information published on the company websites, technical literature on products, news bulletins, information presented at trade shows, information contained on product packaging, and any other originating from publicity, promotion or sponsorship.

Through its connection with industry associations, participation in regulatory processes and other mechanisms anticipated in managing product safety, Mexichem keeps itself informed of social concerns or emerging restrictions that could affect its markets. This ensures that it has the necessary knowledge to act responsibly when legal limitations or justified concerns arise.

Some of the products that Mexichem manufactures have been the subject of controversies by certain stakeholders because of their supposed risks to health or the environment. Mexichem continues to produce and promote sales based on the best scientific information and risk assessments available, endorsed by regulations that accept the safety of these products and their various applications. **PR6**

Mexichem complied with regulations for communication, commercialization, publicity and sponsorship of its products during the reporting period.

PR7

#### 6.6.6 Clients' privacy

Mexichem has internal controls to prevent leaking client information, as well as the company's own information to third parties. The company did not receive any complaints during the reporting period that would indicate a violation of client privacy.

PR7, PR8 During 2011, no fines were levied against Mexichem for noncompliance with laws and regulations concerning the provision and use of products and services. PR9

### 6.7 Contribution to social progress

#### 6.7.1 Responsibility to our communities

Mexichem's commitment to the communities in which we operate allows us to capitalize on opportunities to create value for the company and the community. We are currently evaluating strategies to interact with communities according to their different social conditions and stakeholder needs. We

are focusing on more strategic social responsibility initiatives rather than solely philanthropic activities; thus, we are constructing economic, environmental, and social values with diverse stakeholders that align with the company's interests.

For vulnerable groups or groups in extreme poverty, Mexichem provides assistance, management, co-management, as well as support for self-development. We are working to improve social progress in education, capacity and skills building, water supply and purification, housing solutions, and childcare. Our employees volunteer for these projects to pursue social progress and improve their own skill sets.

We established the following objectives to strengthen our community relationship and improve the continuity of projects:

- We respond to priority needs in areas related to the company's purposes and business.
- We establish partnerships with public and private organizations to enhance efforts.
- We guarantee tangible results by defining and monitoring the indicators on every project. 4.16



## Mexichem Brazil Water Guardians Program 4.12

Sponsored by Mexichem Brazil, the Guardianes del Agua (Water Guardians) program promotes social inclusion through art and education. This program is conducted in collaboration with municipal education departments in the three cities where the company operates plants: Joinville (SC), Cabo de Santo Agostinho (PE), and Sumaré (SP)—and in São Paulo, where the administrative headquarters are located.

The Water Guardian program aims to raise awareness of various public bodies, with an internal communication campaign to encourage volunteerism among company employees. As part of the program, employees give presentations about responsible water use, offer specific degree programs, tell stories, and organize exhibits of children's artwork, among other activities.

Children and teenagers, between 10 and 17 years old, participated in this project twice a week for ten months outside of school. The children engaged in activities such as painting (engraving/oil) and art history and studied interdisciplinary subjects such as ethics, sustainable development, and the best use of natural resources. The program offers young people the opportunity to develop artistic abilities while staying away from the streets and improving employability.

Weaved throughout the entire project was the theme "Water: Present and Future", which served as artistic inspiration for the students. Mexichem Brazil selected this theme because adopting operative and institutional actions related to water use is important to the company.

"The world is drying out," a play by Amanda Carla da Silva Cavalcante, an 11-year-old student from the city of Suape, PE, won first place. Second and third place prizes were awarded to, respectively, Luana Maria da Silva (13 years old) for the work "Transportation and Life," and Ana Paula Andrade da Silva (12 years old) for the painting "There is still hope;"; both are also from the city of Suape.

### Acknowledgment to the students

Exhibits showcasing student artwork were organized in each of the cities, and the participating students received a diploma. The young students were very happy to show their family and community the work they had created.





**Mexichem Soluciones Integrales participates in the rescue of Cárcamo de Dolores** 4.12

The Government of the Federal District, Mexichem Soluciones Integrales, and the foundations Kaluz and Miguel Alemán, invested 22 million pesos (USD1.78 million), to rehabilitate the architecture and landscape of Cárcamo de Dolores, located in the second section of the Chapultepec Forrest.

During the inaugural ceremony, the head of the Federal District Government noted that the recovery of the Cárcamo de Dolores and one of the most important works of Diego Rivera was possible thanks to federal resources and donations of Mexichem, the Kaluz and

Miguel Alemán foundations, contributed through the *ProBosque de Chapultepec* Trust

The project included the restoration of the mural *El Agua Origen de la Vida y de la Fuente de Tláloc* (Water, Origin of Life and the Tlaloc Fountain); the construction of a meeting hall with a 700-person capacity; the closing of frontage road and the creation of a new public plaza; the decontamination of the woodlands and reforestation of 3.5 hectares; the rehabilitation of the water installations of the *Fuente de Tláloc*, the installation of a system to reuse water for irrigation; the architectural restoration of the Cárcamo building; the installation of the *Cámara Lambda*, by Ariel Guzik, as well as an educational project.

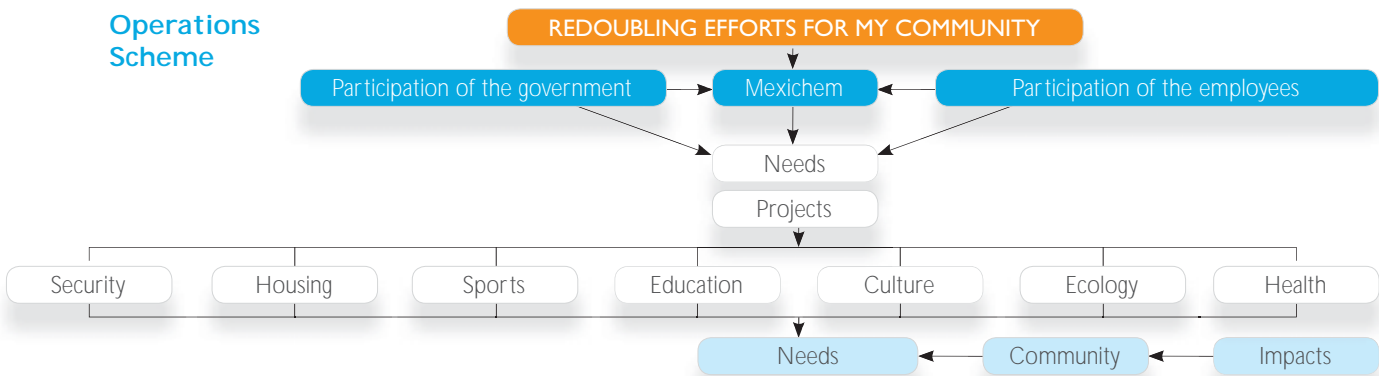
Mexichem aims to implement programs that improve the economic and social developments in communities where it operates.

The company runs a program called *“Redoblando Esfuerzos por mi comunidad”* (Redoubling efforts for my community) that allows employees in all Mexichem plants to evaluate their impact in the community where they operate and to identify its needs. Mex-

ichem cooperates with local or regional governments to develop and fund projects that meet community needs. Local or regional governments contribute 50% of the resources to fund the project, while the other 50% is provided by Mexichem and its employees.

Core program areas include: Housing, Security, Health, Education, Ecology, Culture, and Outdoor Recreational Activities.

**Operations Scheme**



**6.7.2 Achievements of the Kaluz Foundation**

The Kaluz Foundation, A.C., supported by Mexichem and other companies in the Kaluz Group, promotes the comprehensive development of individual and human values by fostering access to education, water and sewage, acceptable housing, and a healthy environment. The foundation supplies the tools needed to implement social-interest projects and offers support to other institutions that promote well-being and generate synergies that multiply positive effects.

*“Redoblando esfuerzos por mi comunidad”* is a program that identifies and supports social responsibility initiatives that benefit communities. These projects are undertaken by the companies, their

managers and employees, the corresponding governments, and community members.

In its third year, the Kaluz Foundation grants for 2011–2012 supported projects that have benefited more than 37,144 people directly, and more than one hundred thousand indirectly, throughout Latin America and in the United Kingdom.

Mexichem competed to win grants for more than 20 projects that are either in progress or completed. These projects were led by collaborators from various business units in different countries. Some of the participating projects are described in the chart presented below. It is noteworthy that the wining projects stand out as cases of public interest.

### Project “Minga Mujer” (Minga woman) 4.12

The Association “Minga Mujer,” formed by women from the region of Guachené (Cauca, Colombia), provides food for the Pavco de Occidente plant in Mexichem Colombia. The purpose of the project is to improve quality of life for families in the northern part of Cauca by providing income for women and healthy food for employees. The project has

made great strides training women in administrative principles, food preparation best practices, and nutrition. With this project, Mexichem promotes the growth of businesses as a social-economic strategy to incorporate the surrounding communities into our value chain and support initiatives that benefit the community and employees’ families. EC6

Colombia

### The town of Mixco, in Guatemala, now has a sewage treatment plant

4.12

Kaluz Foundation Awards first-place winner in the environmental improvement category

Mexichem Guatemala employees coordinated a project to supply the people of the Colonia Monte Carlos, in El Naranjo, within the municipality of Mixco, an environmental solution to treat rainwater and sewage water separately. This solution prevents water from causing river pollution in other communities and sets an example for neighboring communities.

Most of the community members used to empty the water from their washers and showers on the ground because most of the communities’ individual septic systems had collapsed. This practice produced unsanitary conditions.

Authorities gladly accepted the proposed solution to construct treatment plants due to their environmental and social benefits.

The community supplied the materials needed for construction of the system. The municipal government of Mixco supplied the design, labor, and equipment. Mexichem Guatemala supplied Novafort piping and its accessories at favorable prices. The project was concluded with a centralized system to treat sewage water at an approximate cost of USD84,500.00. Now all of the neighbors are connected to the same system, which prevents sanitary problems and pollution. The community manages and maintains the system.

This Mexichem Guatemala project won first place in the environmental category for the Kaluz Foundation Awards. As a prize, the community was granted monetary support for the entire project.



Guatemala

Summary of projects and programs

<p><b>Improvement of child education in Guachené</b>                  This project is a partnership between the municipal government, PAVCO, UNICEF, and the community of Guachené. The purpose of the project is to improve conditions and guarantee a better quality of education for children in the neighborhood around the PAVCO plant. The project proposes altering infrastructure to create learning spaces that respond to children's needs and improve school hygiene and sanitary conditions, which will generate additional benefits for the children's families. This project will be accomplished through a training process and improvement of school infrastructure (teaching materials provided by UNICEF).</p>	<p>CHAIN                  Integral Solutions                  PLANT                  Mexichem PAVCO de Occidente, Guachené, Colombia                  BENEFITED COMMUNITY                  Guachené, Cauca                  CATEGORY                  EDUCATION</p>
<p><b>Safe sanitation in the rural communities of Guachené, Villa Rica, and Puerto Tejada</b>                  Construction of community wastewater-treatment systems and bathrooms in homes and schools. These systems will prevent gastrointestinal diseases and dengue, which affects mainly children in the area.</p>	<p>CHAIN                  Integral Solutions                  PLANT                  Mexichem PAVCO de Occidente, Guachené, Colombia                  BENEFITED COMMUNITY                  Guachené, Villa Rica and Puerto Tejada                  CATEGORY                  HEALTH</p>
<p><b>Coco Arte: Teaching young, vulnerable people how to become artisans</b>                  This project will train children in the arts such as the creation of handcrafted pieces, accessories, and ornaments. The project aims to reuse organic materials and give students the skills for developing a business.</p>	<p>CHAIN                  Integral Solutions                  PLANT                  Mexichem Colombia (PAVCO) Colombia                  BENEFITED COMMUNITY                  Ciudad Bolivar, Altos de Cazucá                  CATEGORY                  CULTURE</p>
<p><b>Archery in poor schools in Medellín</b>                  Archery is a sport that requires strong concentration. Practicing archery contributes to physical development, promotes a healthy lifestyle, and helps to improve academic performance. This project promotes this sport by training eight groups of people for one and a half hours a day, twice a week, for six months. A tournament is planned at the end of the training as part of the instruction process.</p>	<p>CHAIN                  Integral Solutions                  PLANT                  Mexichem Colombia (PAVCO) Colombia                  BENEFITED COMMUNITY                  Medellín (Least favored sector of the population)                  CATEGORY                  SPORTS</p>

Summary of projects and programs

<p><b>Water guards</b> Renew the water-conveyance systems in three educational centers.</p>	<p>CHAIN Integral Solutions PLANT Mexichem Costa Rica BENEFITED COMMUNITY San José metropolitan area CATEGORY EDUCATION</p>
<p><b>Building dreams together</b> Habitat for Humanity has a project in Puerto Cortés called “Nueva Esperanza” (New Hope). This project benefitted 100 families through subsidized housing with long-term, nominal-rate financing. Twenty-five families could not participate in this program because of their economic situation. Mexichem Honduras built alliances with the local government, NGOs, private companies, and the community, including the recipients, to help those 25 families. In this phase, the company will help 10 families (50 people).</p>	<p>CHAIN Integral Solutions PLANT Mexichem Honduras BENEFITED COMMUNITY La Nueva Esperanza community, Puerto Cortés CATEGORY HOUSING</p>
<p><b>Rainwater management</b> This project will prevent water runoff and flooding by directing rainwater into the ground where it will stay in the water table for reuse in the community. The project will also prevent channeling of water towards canyons, thus avoiding the transfer of the problem to other towns. This project complements the completed Sewage Water Management system.</p>	<p>CHAIN Integral Solutions PLANT Mexichem Guatemala BENEFITED COMMUNITY Community of Monte Carlos and nearby areas CATEGORY ECOLOGY</p>
<p><b>Incorporation of a Panorama community children’s art workshop</b> Participating in drawing and theater workshops gives children the opportunity to develop innate artistic talent. The project also strengthens relationships with our neighbors.</p>	<p>CHAIN Integral Solutions PLANT Mexichem Ecuador (Amanco Plastigama) BENEFITED COMMUNITY Community of Panorama, Cantón Durán CATEGORY CULTURE</p>
<p><b>Educating with values, we educate for life</b> This project trains teachers in junior high and high school on values as a teaching subject and as a part of the student’s everyday life. Workshops are also given to young student leaders, with the purpose of instilling honest and ethical behavior in students and complementing the work done by teachers.</p>	<p>CHAIN Integral Solutions PLANT Mexichem El Salvador BENEFITED COMMUNITY San Luis La Herradura CATEGORY EDUCATION</p>



Summary of projects and programs

<p><b>Mexichem Brasil and SENAI: Removing barriers and training communities</b></p> <p>Mexichem Brazil and SENAI respond to one of the biggest deficiencies in the civil construction market in Brazil: the training of labor. This project promotes training of hydraulic installers in all 27 Brazilian states and ensures through SENAI certification, in combination with Mexichem Brazil, the development of civil-construction professionals who consider sustainability in their work</p>	<p>CHAIN Integral Solutions</p> <p>PLANT Mexichem Brazil</p> <p>BENEFITED COMMUNITY Urban and rural</p> <p>CATEGORY EDUCATION</p>
<p><b>Educational and sports activities for the children of Pasacaballos</b></p> <p>This program educates children and their families through a children's soccer championship, which encourages better use of free time, family integration and the overall development of Pasacaballos children.</p>	<p>CHAIN Chlorine-Vinyl</p> <p>PLANT Mexichem Resinas Colombia</p> <p>BENEFITED COMMUNITY Pasacaballos, Cartagena</p> <p>CATEGORY HEALTH AND SPORTS</p>
<p><b>Building capacity to handle chemical products in everyday life</b></p> <p>Chemical companies are a part of the community of Cajicá. When young people complete middle school, many begin training to work in these companies, while others initiate technical or professional studies that in some cases will be related to industry or chemistry. Mexichem Derivados Colombia seeks to foster an understanding within the community of the activities and benefits of the chemical industry, how to react in case of emergencies that involve chemical substances, and to understand the possible uses of these substances. Therefore, students are prepared, through training, to work in the chemical industry and to participate in local emergency-care committees. The project includes practical workshops and two courses with at least 30 students each year from the local school.</p>	<p>CHAIN Chlorine-Vinyl</p> <p>PLANT Mexichem Derivados Colombia</p> <p>BENEFITED COMMUNITY Cajicá</p> <p>CATEGORY EDUCATION</p>

Summary of projects and programs

<p><b>Lago del Niño” (Kid Lake)</b>                  The “Lago del Niño” is a space that was forgotten for such a long time that it became a swamp. Lilies and trash prevented it from being used as a recreational center for an estimated 12,500 people. The phases of rehabilitation were 1) direct intervention from the citizens: sweeping and cleaning; 2) intervention with specialized equipment and heavy machinery; 3) securing the newly protected area and refurbishing the park for recreation and leisure visitors; 4) stocking fish in the lake, and also planting trees and vegetation strategically; and 5) creating a guard network..</p>	<p>CHAIN                  Chlorine-Vinyl                  PLANT                  Mexichem Resinas Vinílicas, Mexico                  BENEFITED COMMUNITY                  Xicohtzinco, Tlaxcala                  CATEGORY                  ECOLOGY</p>
<p><b>For the healthy development of the children in the community</b>                  Fixing the green areas in the neighborhood of Lázaro Cárdenas.</p>	<p>CHAIN                  Chlorine-Vinyl                  PLANT                  Mexichem Resinas Vinílicas and Mexichem Compuestos, México                  BENEFITED COMMUNITY                  Altamira, Tamaulipas                  CATEGORY                  ECOLOGY</p>
<p><b>Ecology tournament</b>                  Mexichem organized the Second Ecological Tournament to promote the care and protection of the environment for employees’ children and students from schools in the neighboring area. The tournament included reforestation and awareness-raising through videos, conferences, painting, and contests focused on the protection and care of the environment. The purpose of the tournament is to teach children to live in harmony with wildlife—fauna and flora—in addition to encouraging family unity among our employees.</p>	<p>CHAIN                  Fluorine                  PLANT                  Mexichem Flúor, Mexico                  BENEFITED COMMUNITY                  Matamoros, Tamaulipas                  CATEGORY                  ECOLOGY</p>
<p><b>Quality schools</b>                  This project includes economic and in-kind support for improvements of school facilities, construction of new works, and maintenance of existing buildings. Having better schools will improve students’ educational development. For this program, the government matches 50% of the funds raised by each participating school. Mexichem Flúor, in addition to giving a donation, verifies that the resources donated to the school are properly applied to the projects and assists in their opening.</p>	<p>CHAIN                  Fluorine                  PLANT                  Mexichem Flúor, Mexico                  BENEFITED COMMUNITY                  Community of the Ejido las Rusias, Matamoros                  CATEGORY                  EDUCATION</p>

Summary of projects and programs

<p><b>Junior high school in La Salitrera</b>                  This project will construct a junior high school building in the community of La Salitrera for children in La Salitrera and neighboring towns.</p>	<p>CHAIN                  Fluorine                  PLANT                  Mexichem Flúor, Mexico                  BENEFITED COMMUNITY                  Municipality of Villa de Zaragoza, San Luis Potosí                  CATEGORY                  EDUCATION</p>
<p><b>Building together in the future of La Salitrera</b>                  Improving quality of life by providing support for low-income families in the community of La Salitrera and nearby towns. The project helps participants improve or build their homes with concrete blocks that they make themselves. Mexichem Flúor hires the supervisor and provides the facilities, machinery, raw materials, and training. The community provides labor for block-making and a token to “buy” the blocks, thus making this project sustainable.</p>	<p>CHAIN                  Fluorine                  PLANT                  Mexichem Flúor, Mexico                  BENEFITED COMMUNITY                  Municipality of Villa de Zaragoza, San Luis Potosí                  CATEGORY                  HOUSING</p>
<p><b>Agriculture in the community of Santa Catarina</b>                  This project irrigates 130 hectares of land, which benefits 58 families.</p>	<p>CHAIN                  Fluorine                  PLANT                  Mexichem Flúor, Mexico                  BENEFITED COMMUNITY                  Community of Santa Catarina, San Luis Potosí                  CATEGORY                  HOUSING</p>
<p><b>Construction of a new sustainable junior high school</b>                  Construction of a new, sustainably designed junior-high school to support quality education for 280 students. The project required closing two schools and transferring those students to the new buildings without losing school time. We are working on the finishing touches, including the garden and patio design.</p>	<p>CHAIN                  Fluorine                  PLANT                  Mexichem Flúor UK, United Kingdom                  BENEFITED COMMUNITY                  Saughall, Chester                  CATEGORY                  EDUCATION</p>
<p><b>Supply of uniforms for a school in Nairobi, Kenya</b>                  Mexichem donated 2,000 uniforms to Pa Mahali Watoto students in Nairobi, Kenya. This school was built with donations at a fraction of its original cost estimate. Funds are also being raised to help expand the school.</p>	<p>CHAIN                  Fluorine                  PLANT                  Mexichem Flúor UK, United Kingdom                  BENEFITED COMMUNITY                  Dagoretti, Nairobi, Kenya                  CATEGORY                  EDUCATION</p>

### Mexichem Colombia provides professional training

Mexichem Colombia is continuing its Professional Plumber PAVCO Work Skills Certification program. The program has trained more than a thousand people, making it the first *Private Company* alliance with plumbers certified in the "Installation of Supply Networks and Drainage in Residential and Commercial Buildings" in this South American country.

Mexichem Colombia is linked to SENA (the National Learning Services) for certifying the work skills of the plumbers from the Ferret-erías Solo Pavco distribution channel, as well as the hydraulic contractors in hydro-sanitary installations of supply, fire prevention and drainage networks, and the Association of Fluid Conduction Professionals.

Professions can be certified in more than eight cities in the country, over a 90-day training period. The certification course includes 60-hour modules on the PAVCO piping systems, personal growth, and the service culture. Participants receive a certificate for "Installation of Supply Networks and Drainage in Residential and Commercial Buildings," which is recognized in International Labor Organization member countries.

The Professional Plumber PAVCO program will continue to provide the opportunity for many people to become certified plumbing sector workers, which will allow them to be more competitive in the market and gain access to better job opportunities.

Colombia

### Mexichem and Amanco received Socially Responsible Business Awards

Within the framework of the fourth Latin-American Forum of Corporate Social Responsibility, Mexichem received—for its fourth consecutive year—the Socially Responsible Enterprise (ESR) distinction granted by the *Centro Mexicano para la Filantropía A.C.* (CEMEFI). Amanco received the same award for the seventh time.

This acknowledgment was obtained through self-analysis, supported by documentation from the company and endorsed by CEMEFI. It represents an exercise in corporate trust, honesty, and transparency that allows companies to systemize their actions into one single process with socially responsible management.

The ESR distinction recognizes the company before its employees, investors, clients, authorities, and society in general for making a voluntarily and public commitment to socially responsible management as part of its business culture and strategy.



Mexico



## Colombia

### **Mexichem Colombia, winner of the Andean Award for Corporate Social Responsibility**

The management of Mexichem Colombia's Bogotá and Guachené operations was recognized by the Andesco Award for Corporate Social Responsibility in 2011. Mexichem Colombia won the National Business category, awarded by the Association of Businesses, Public Services and Communication.

The award, granted by a jury of independent experts on environmental, social, economic, and sustainable development, is endorsed by the United Nations Global Compact and is audited by PricewaterhouseCoopers. The 2011 award was delivered in the frame of the Thirteenth National and Fourth International Congress of Public Services, Information Technologies and Communication.

In the words of the Director of Mexichem Colombia, "Corporate Social Responsibility responds to the sustainability vision of the Mexichem companies, which seeks to manage financial growth and stability by making proper use of natural re-

sources and the creation of social value. Our strategy, which has been oriented to the triple-bottom-line model for more than 15 years, has allowed us to go deep and expand social responsibility to all of our activities, which was a fundamental reason we won this award."



## Costa Rica

### **Mexichem Costa Rica "Water Guards" program**

As part of the 50th anniversary of the *Instituto Costarricense de Acueductos y Alcantarillados (AyA)* (Costa Rica Institute of Aqueducts and Sewage Systems) and the presence of the Costa Rican president, Laura Chinchilla, Mexichem Costa Rica received recognition for the project "Vigilantes del Agua".

This project is an initiative that AyA, the principle operator of potable water services in this nation, developed for educational centers. It involves two elements: the substitution of pipes for potable water in the Amanco PPR Fusión line, and training students about efficient and proper use of water.

Mexichem Costa Rica supports this project with piping and technical advice for the students and the employees of the AyA. In 2011, students graduated from 22 schools that have benefited from this program, and the cost of water has decreased

by up to 60% thanks to the pipe substitutions and wise water use.

In 2011, this program expanded to many more schools around this Central American country.



### Mexichem CID, winner of the State Science and Technology Award

The government of the State of Mexico delivered the State Science and Technology Award to Mexichem CID ( Research and Development Center) for its prominent upward trajectory and contribution to the advances of scientific research and technological development of the company and the country.

This award is granted by the Science and Technology Council of the State of México (COMECYT) to outstanding industrial organizations involved in innovation, investigation, and technological-development activities, as well as distinguished researchers with different areas of expertise.

The awards ceremony was led by the Governor of the State of Mexico. The General Director of the Science and Technology National Council (CONACYT), the president of the Mexican Institute for Competition, the presidents of the Commissions of Science and Technology of the Senate and the Federal Leg-

islature, in addition to other important members of the business, public sector, and scientific community were also present.

To select the recipient of this award, COMECYT formed a 30-member Evaluation Committee, comprising distinguished members of the scientific and technological community, as well as the academic, industrial and governmental sectors. The judges analyzed the projects and their impact on value generation, the capacity of technological innovation, wealth and knowledge generation, and the success reached when competing in global markets.



### Authorities acknowledge the environmental performance of the Coatzacoalcos Plant

The Federal Environmental Protection Agency (PROFEPA), granted the Recognition of "Environmental Performance 2010" to Mexichem Derivados, Coatzacoalcos Plant, for outstanding environmental performance in the following aspects, among others: reduction of water use, energy consumption, and GHG emissions and responsible waste management.

Only 25 of the 867 industrial-sector companies that participated in the National Program of Environmental Audits' statistical exercise were acknowledged, among them, Mexichem Derivados Planta Coatzacoalcos. Winning companies also underwent assessment of their physical operating condition as part of the evaluation process.

The awards ceremony took place in the *Cervecería Cuauhtémoc-Moctezuma, S.A. de C.V.* Auditorium, in the city of Monterrey, N.L.,

and the awards were given by various authorities on Environmental Protection at a national level, among them, the General Director of the Federal Environmental Protection Agency.

This is the first time that PROFEPA has given an award to the industrial sector based on the results of the Environmental Audit. This is a way to show the benefits of proper management, of compliance with environmental regulations and good environmental practices.



## 6.8 Awards, certifications and distinctions in social responsibility 2.10

Operating Site	CERTIFICATION			OTHERS
	ISO 9001	ISO 14001	OHSAS 18001	
Celta Plant Barranquilla, Colombia	✓	✓	✓	Icontec Certification of Product Compliance
Pavco Plant Bogotá, Colombia	✓	✓	✓	Icontec Certification of Product Compliance
Pavco Plant Guachené, Colombia	✓	✓	✓	Icontec Certification of Product Compliance
Guayaquí Plant, Ecuador	✓	✓	✓	Receipt and/or Renewal of INEN Seal of Quality
Cua Plant, Venezuela	✓	✓	✓	NORVEN Venezuelan Official Seal of Quality
Podestá Plant, Argentina	✓	✓	✓	
Joinville Plant, Brazil	✓	✓	✓	
Suape Plant, Brazil	✓	✓	✓	
Sumaré Plant, Brazil	✓	✓	✓	
Cartagena Plant, Colombia	✓	✓		Baxter Certification of Distinguished Supplier; Probos Plastics Certification from Portugal
Cali Colpozos Plant, Colombia	✓			
Cajicá Plant, Colombia	✓			
Lima Plant, Peru	✓	✓	✓	SEDAPAL Certification of Product Compliance
Geotextiles Plant, Peru	✓	✓	✓	
Costa Rica Plant	✓	✓	✓	
RCA Guatemala Plant, Guatemala	✓	✓	✓	
San Pedro Sula Plant, Honduras	✓	✓	✓	
Tegucigalpa Plant, Honduras	✓	✓	✓	
RCA Panamá Plant, Panama	✓			
Altamira Compuestos Plant, Mexico	✓	✓		SARI Certification (Responsible Care) Clean Industry Certification
Altamira PVC Plant, Mexico	✓	✓		SARI Certification (Responsible Care) Clean Industry Certification
Durán Plant, Ecuador	✓	✓	✓	

Clean Industry Certification granted by the Environmental Authorities of Mexico  
 ISO 9001: Quality Management System  
 ISO 14001: Environmental Management Systems

OHSAS 18001: Occupational Health and Safety Management Systems  
 NSF: NSF International is an independent and objective nonprofit organization, dedicated to testing and certification of products, and establishes global performance standards for a great variety of products for homes and industry

Operating Site	ISO 9001	ISO 14001	OHSAS 18001	OTHERS
Coatzacoalcos Plant, Mexico	✓	✓		NSF Certification for Chlorine and Caustic Soda. Kosher Certification
El Salto Plant, Mexico	✓			NSF Certification for Chlorine and Caustic Soda; Clean Industry Certification
León Plant, Mexico	✓	✓	✓	
Matamoros Plant, Mexico	✓			SARI Certification (Responsible Care); Clean Industry Certification
Mina Villa de Zaragoza Plant, Mexico	✓			
Patio Operation San Luis Potosí, Mexico	✓			
Lechería Plant, Mexico	✓			Kosher NSF Certifications and ISO 22000
Tultitlán Plant, Mexico	✓			Kosher NSF Certification
Tlaxcala Compuestos Plant, Mexico	✓	✓		SARI Certification (Responsible Care); Clean Industry Certification
Tlaxcala PVC Plant, Mexico	✓	✓		SARI Certification (Responsible Care); Clean Industry Certification
Plastisur Plant, Peru	✓	✓	✓	
La Presa Plant, Mexico	✓			
Altamira II Plant, Mexico	✓	✓		SARI Certification (Responsible Care); Clean Industry Certification
Monterrey Rex Plant, Mexico	✓			STPS Safe Company Certification Third Level
St. Gabriel Plant, USA	✓	✓	✓	
Runcorn Plant, United Kingdom	✓	✓	✓	
Salinera del Sur Plant, Mexico	✓			Kosher Certification
Bogotá Geosistemas Plant, Colombia	✓	✓	✓	
Leominster Plant, USA	✓	✓	✓	ISO/TS 16949 Certification
Pinville Plant, USA	✓			ISO/TS 16949 Certification
Mihara Plant, Japan	✓	✓	✓	
Melton Mowbray Plant, United Kingdom	✓	✓	✓	

SARI: Responsible Care Management Systems, granted by the National Association of Chemical Industries in Mexico  
 ICONTEC: Instituto Colombiano de Normas Técnicas (Colombian Institute of Technical Standards)

NORVEN: Certifier of final product quality in Venezuela  
 SEDAPAL: Potable water and Sewage Services of Lima



Plant	ENVIRONMENT	HEALTH AND SAFETY	SOCIAL	ENERGY
Altamira Plant, Mexico		Recognized for Self-Management of Health and Safety at Work by the STPS.		
La Presa Plant, Mexico			Distinction from the Red Cross for Training in the Mexican Red Cross in Toluca, Mexico.	
Tlaxcala Plant, Mexico			Distinction as a Family-Responsible Company, from the STPS (Labor Department), Mexico.	
Matamoros Plant, Mexico		Recognition from Union Pacific for zero safety incidents.	Distinctions from the Mexican Red Cross and the local government's Family Development Agency (DIF) for supporting social programs.	
Sumaré Plant, Brazil	FIESP/ CNI Award in the Sustainable Development Category for good practices in the areas of Innovation, Productivity, Design, and Sustainable Development.		Fufo / ACIAS Award, Recognition for participation in the development of the city of Sumaré.	
Suape Plant, Brazil				Renewable Energies Award for consumption of energy from sources encouraged.
Joinville Plants, Brazil	<i>Expressão de Ecologia</i> Award, in recognition of the company's environmental actions; Fritz Muller Award In the Environmental Management Category, sponsored by the Environmental Foundation of Santa Catarina.			
Guayaquil Plants, Ecuador			Renewal of the Quality Seal for the Ventilation Pipes PLASTIDOR (Norm 2474) In BOPLAST pipes the following Quality Seals were obtained: PVC Threadable Pipes C-80 (Norm 2497) PVC Drainage Pipes (Norm 1374) PVC Pressure Pipes (Norm 1373).	

Plant	ENVIRONMENT	HEALTH AND SAFETY	SOCIAL	ENERGY
Cajicá Plant, Colombia		Invima Certification for Good Manufacturing Practices.	Award granted by the Kaluz Foundation for the work done with the community of Cajicá in the project: Let's give solid waste a second chance.	
Poncitlán Plant, Mexico			Jalisco Award for Excellence in Training and Qualification.	
Bogotá Plant, Colombia	Environmental Excellence Generating Sustainable Development, Elite category within the District Environmental Excellence Program (PREAD) from the Bogota City Government and the district Environmental Department.			
Barranquilla Plant, Colombia		Second place, Award for Excellency by ARP SURA Zero Accidents Category.		
RCA Plant, Costa Rica			Kaluz Foundation Award: A water solution for Gavilán Canta.	
RCA Plant, Guatemala			Kaluz Foundation Award, Ecology: Sewage Water Treatment Project.	
Lecheria Plant, Mexico			ISO 22000 Recertification obtained	
CUA Plant, Venezuela			NORVEN Product Brand Certification and National Product Brand Certification	







Mexichem

## 7. Environmental Dimension

Mexichem is committed to environmental protection. We go further legal requirements to regulate our own actions and improve our operations to take care of our environment. We try to not only minimize the local impact of our production plants, but also implement innovative initiatives that contribute to the preservation of environmentally important zones and increase the quality of life of their inhabitants.

In many of the countries in which we operate, we benefit from natural resources, such as abundant water and biodiverse ecosystems. Five of the eleven countries in which Mexichem operates plants hold 60% of the world's biodiversity: Mexico, Colombia, Brazil, Ecuador, and Peru. Because of this, we undertake the challenge of preserving biodiversity in order to guarantee that society and our plants continue using the environmental resources provided.

Optimizing our use of water and energy is a priority for us. It will help Mexichem continue to be one of the Mexican companies most committed to the environment. By promoting ecoefficiency projects and environmental protection, we demonstrate our commitment to the environment. This commitment is appreciated by investors who value corporate social responsibility.

We are focusing on ecoefficiency so that we can produce more products with fewer resources, maintain our competitiveness, and reduce our ecological footprint. Mexichem transforms energy and raw materials into useful products consumed in our daily lives. Our research center focuses on strategic projects for continuous improvement and innovation, in addition to sup-

porting the production chain in the development of environmental management processes aimed at finding sustainable development in our operations. Mexichem accomplished the following in these priority areas during 2011:

- Optimizing the use of water and energy.
- Reducing industrial waste
- Controlling atmospheric emissions.
- Designing plans to protect biodiversity, soil, surface water, and aquifers.
- Conducting research to design and produce safer and more environmentally sound products.

Our principal operating facilities have management systems to identify and manage significant environmental aspects, design improvements in operations and incorporate good industrial and mining practices that distinguish them as clean companies. Mexichem operations that have not been certified are working to do so to align with Mexichem's corporate strategy.

Mexichem signed the global initiative of the chemical industry known as Responsible Care or Principles of Integral Responsibility. Through this framework member companies commit to continually manage the safety of their operations and production, and to protect health and the environment within the framework of ethical principles and practices. These include, among others, transparency and openness in public communications regarding operations and products, collaboration with public and private authorities for the development of better practices and regulations, and the supervision of products aimed at incorporating safety considerations in all the stages of their lifecycle.



### Mexichem Resinas Vinílicas, Altamira Plant, receives the Integral Responsibility Certification

The National Association of Chemical Industries (ANIQ) of México granted the Certification of Integral Responsibility Management System to our companies that comply with over 85% of the program's practices listed in the framework of the Annual Associated Members Assembly.

Mexichem Resinas Vinílicas Altamira I was one of the 17 companies verified through the program of voluntary audits during 2010. This achievement demonstrates the company's commitment and progress in continuous improvement of Safety, Health and Environmental Protection practices. For these achievements, ANIQ awarded companies certified in 2011 with the following distinctions:

1. SARI Certification, which acknowledges and certifies the implementation of at least 85% of the Integral Responsibility Management System for a period of three years.
2. Authorization to use the Integral Responsibility logo.
3. Registration to SASST (Health and Safety at Work Management System). By way of this, companies may access the benefits agreed between ANIQ-STPS and the eventual "Safe Company Level 3" award.
4. Agencia General de Aduanas (AGA) Opinion. Document directed to the Agencia General de Aduanas (General Custom Agency), which gives access to the benefits in foreign-trade matters and the eventual registration as a "Certified Business".



## 7.1 Impact of new plants on environmental performance

As part of its Chlorine-Vinyl Chain vertical integration strategy, in 2011 Mexichem acquired AlphaGary, a leader in the production of PVC compounds, with plants in the United States and the United Kingdom. Such acquisition allowed for the expansion of the production of plastic compounds and generated important synergies from operating efficiencies, profiting from distribution channels, geographic diversification and development of new products for the sectors of medical applications and electrical cables, among others.

This acquisition impacted our environmental performance by increasing the consumption of raw materials, natural gas and water, as well as the volume of drainage water discharged. The consump-

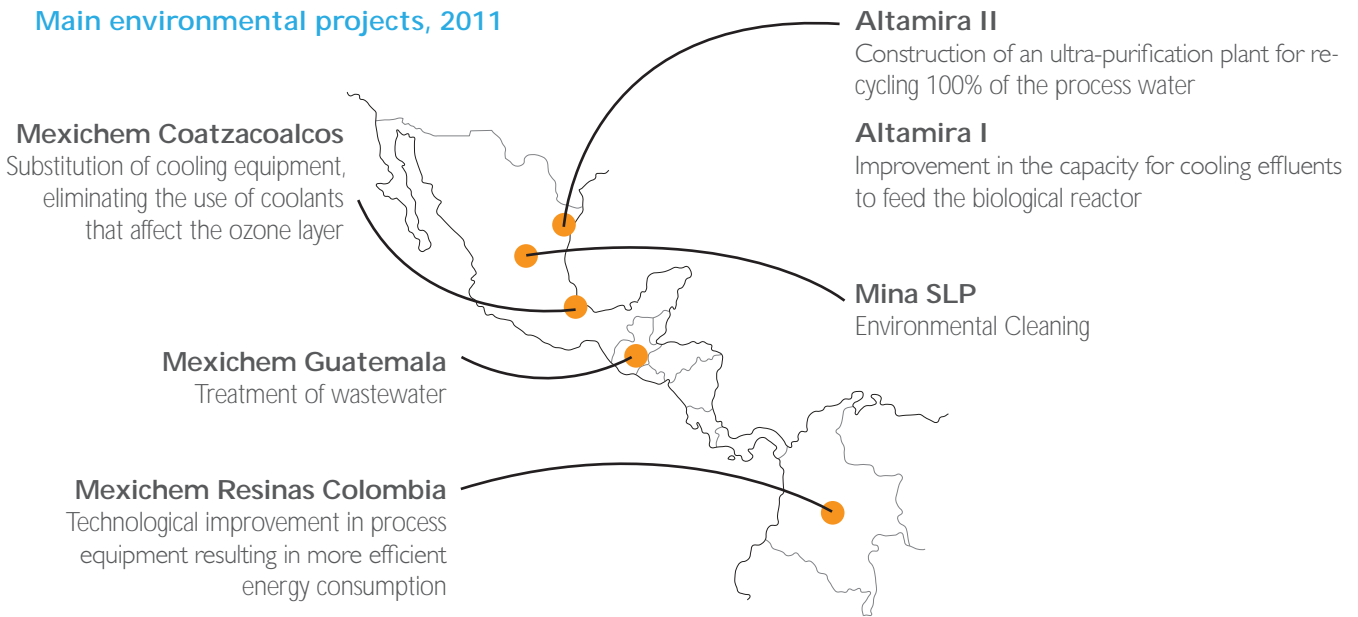
tion of electric energy was also increased as a result of the integration of a major production operation.

We modified our 2009 baseline to include the contribution of the plants acquired in 2011. We are determining the necessary adjustments in our baseline to evaluate compliance with our environmental performance goals and adjust the goals.

## 7.2 Investments in environmental projects

In 2011, investments were made in environmental projects in the amount of USD16 million, mainly in improvements to optimize energy use, reduce ozone-layer-depleting emissions, and reduce industrial waste. **EN30**

### Main environmental projects, 2011



### 7.3 Use and consumption of natural resources

The raw materials used to manufacture Mexichem products are essentially salt (sodium chloride) and fluorite (calcium fluoride), which are obtained through extraction processes in the mines of the company in Mexico. **EN1**

Salt is the starting point of the chlorine-vinyl chain, and it is converted into chlorine and sodium through an electrolytic process. The reaction of chlorine with ethylene produces the vinyl chloride monomer (VCM), which is transformed into polyvinyl chloride (PVC) in a polymerization process. Plasticizers, stabilizers, and other substances are added to PVC resins to convert them into vinyl compounds, which can be processed and then transformed into any number of final-use products. Mexichem converts part of the PVC it produces into pipes and geosystem membranes, as well as plastic compounds for medical devices,

electric cables, construction sections, and other specialized applications.

Fluorite, known chemically as calcium fluoride, is a mineral used in the steel, cement, glass, and ceramics industries. It is also used in the manufacture of hydrofluoric acid, through a reaction with sulfur. This hydrofluoric acid is then used in the manufacture of refrigerant gases for air conditioning and refrigeration systems.

During 2011, we stopped extracting sulfur from our plant in Veracruz, Mexico, to explore areas that may have greater availability of sulfur, which will improve the ecoefficiency of this operation. Mexichem is reforesting land that has been cleared for drilling. **EN26** This operation has a closing plan that includes the environmental recovery of the site over a ten-year period. **MM10**

**Consumption of raw materials, 2007-2011**

	2007	2008	2009	2010	2011
<b>Tonnes per year</b>	2,927,557	2,852,913	3,355,918	3,942,044	4,406,333

**EN1**

We have increased our consumption of raw materials during the last few years because we have more plants and, therefore, increased demand. However, we are continuously working to use our resources more efficiently, based on principles of reduce, reuse, and recycle and industrial metabolism.

The percentage of industrial recycling achieved is an average 9% with greater impact in our Integral Solutions Chain. In that chain, 99% of the PVC waste that is used as raw material is recovered to be integrated into the process, closing the product's lifecycle. **EN2**

Mexichem has state-of-the-art technology for the production of PVC resins, which incorporates closed-loop processes to recover the nonpolymerized fraction of the chlorine-vinyl monomer and reincorporating it into the process to be used in subsequent production runs. In this way, we optimize efficiency and minimize the loss of raw materials in manufacturing plants while ensuring a safe work environment for our employees.

## 7.4 Efficient use of water and energy

Mexichem commits efforts and resources to continually improving its processes to make them safer and more water and energy efficient. We increase our ability to reduce operational and production costs through synergies generated by vertical integration in our production chains. Cost reduction depends mostly on reducing the costs associated with raw materials and the energy demand of our production processes.

### Energy consumption

Mexichem consumes electrical energy and natural gas as its main sources of energy. Most of the energy we use comes from electricity provided by outside our companies. We also use gas and, to a lesser extent, steam that we purchase from a third party, diesel, and LPG (liquefied petroleum gas).

Our suppliers generate energy with thermoelectric, hydroelectric, coal-generated-electric, geothermal-electric, wind-generated-electric, nuclear-generated electric, and biomass plants. **EN4**

We have done a lot to improve our energy efficiency through investments in process technology and conservation strategies, which have generated economic savings, competitive advantages, and market differentiation.

Energy consumption is a very significant aspect of our environmental impact assessment. Therefore, we have developed a culture of responsible use based on saving programs led by technical plant personnel with participation of all of our employees. Successful actions are then replicated in the additional plants.

In 2004 Mexichem initiated an Energy Efficiency Program at its chlorine-soda plant in Coatzacoalcos, Veracruz, Mexico. This plant represents 38% of the company's total electrical energy consumption in Mexico. Mexichem also implemented the program in other operating sites and as a result of this effort, Mexichem plants have won awards in various categories of the National Energy Conservation Award given by the National Commission for Energy Conservation.

In 2011, Mexichem maintained the same level of energy savings and reduction as in 2010. The data reflect increased consumption resulting from an increase in the number of plants and a growth in the volume of the global production. The consumption of electric energy purchased from third parties was 31% more than in 2010 due to the growth in operations and increased production activity. The increase in sales was 31%. **EN4**

Mexichem is considering increasing the use of renewable energy sources in its operations. Currently, it produces 50% of the electric energy by cogeneration in the Altamira Plant, Mexico, dedicated to the production of PVC resins. In Coatzacoalcos, where the main plant producing chlorine is located, the Investigation and Development Center, CID, has made progress in the design of a cogeneration plant capable of supplying the total of the energy consumed in this plant. These two plants, together, represent the highest energy consumption in the company. In addition, we are conducting a viability study to use alternative energy sources in these plants, including eolic and solar energy. **EN6**

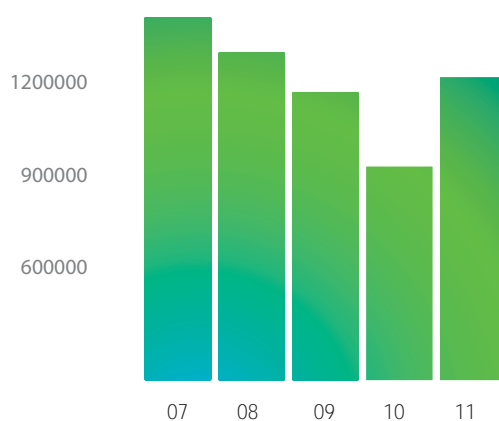
Greater savings will depend on the development of alternative energies, such as solar panels for supplying energy to the lighting network in the Coatzacoalcos and El Salto plants as well as for the administrative headquarters in Tlalnepantla, Mexico, and will also depend on the construction of the cogeneration plant in Coatzacoalcos, Mexico. In 2011, energy savings was 8% due to conservation programs and improvements in operating efficiency. **EN5**

Among the activities undertaken to save energy were the following:

- Shutting down processes during peak use hours.
- Installing thermal covers on extrusion machinery.
- Insulating chilled water piping.
- Reducing operating pressures in injection-molding machinery.

- Improving efficiencies in electrically powered machinery.
- Using on-site power generators during peak use hours. **EN6, EN7**

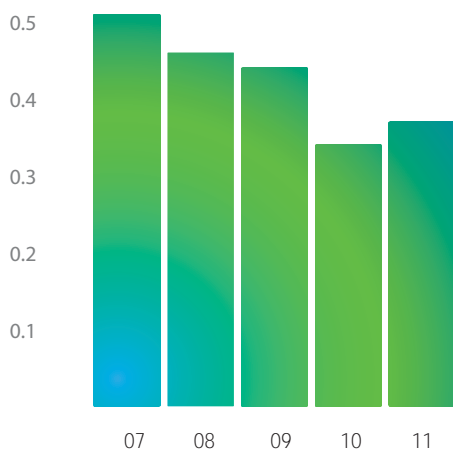
Other investments implemented at Mexichem plants to save power include: increasing the number of electrolytic diaphragm cells to reduce current flow in the production of chlorine-soda; exchanging electric engines for high-efficiency engines; replacing incandescent bulbs with energy-saving bulbs; increasing the efficient use of water by improving compressors; changing the packing in the cooling tower cells; and installing more efficient cold water equipment. In addition, we implemented operating practices such as reductions in line equipment and decreasing the number of ventilators in the cooling towers during the winter months. **EN7**



**Consumption of electric energy**  
(Gcal/year)

Electric energy in Gcal/year <b>EN4</b>	
2007	1,407,319
2008	1,292,586
2009	1,163,575
2010	922,522
2011	1,213,110

The consumption of electric energy was 31% higher than the previous year due to increased production. The increase in sales was 31%.



**Consumption of electric energy per tonne sold**  
(Gcal/Tonne sold)

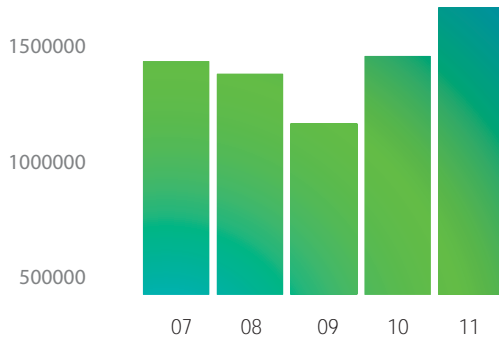
Consumption of electric energy per tonne sold Gcal/tonne sold	
2007	0.51
2008	0.46
2009	0.44
2010	0.34
2011	0.37

However, the ratio of electric energy consumption per tonne sold increased 9% over 2010.



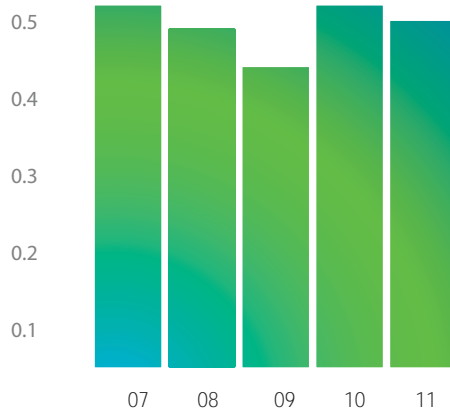
Burning fossil fuels such as natural gas is a significant source of GHG emissions. Consumption of natural gas for power generation in our plants is directly related to CO<sub>2</sub> emissions at

our company. At Mexichem, direct energy consumption of natural gas in 2011 was 17% higher than the previous year, due primarily to increased production.



**Consumption of natural gas**  
(Gcal/year)

Natural gas in Gcal/year <sup>EN3</sup>	
2007	1,431,212
2008	1,376,673
2009	1,161,709
2010	1,453,341
2011	1,664,028



**Consumption of natural gas per tonne sold**  
(Gcal/tonne sold)

Consumption of natural gas per tonne sold Gcal/tonne sold	
2007	0.52
2008	0.49
2009	0.44
2010	0.52
2011	0.50

The ratio of natural gas consumption per tonne sold decreased 4% with respect to 2010.

### Water consumption

Water represents an indispensable resource for mining operations, processing, and operation at Mexichem. Most of our plants have closed-loop wastewater-treatment systems, and all of our plants operate wastewater-treatment systems. These systems recover 60% of the water used. Mexichem seeks to expand the recirculation and reuse of water to all of its plants to contribute to reducing water consumption and mitigating the risk of shortage. This will also prevent possible punitive or regulatory actions by authorities that manage this resource in the countries in which we operate. <sup>EN26, EN10</sup>

Our operations are subject to authorization by the governmental authorities for permits, licenses,

and/or titles of water concession, issued according to the environmental regulations of each country.

The consumption of first-use water in 2011 was 11,946,882 m<sup>3</sup>. The extraction of water from surface water bodies was 84%, and from aquifers 16%. This means that 84% of the water consumed by Mexichem is a product of the runoff generated by the water cycle into rivers, lakes, creeks and water vessels. Therefore, there is a natural recharge of these water sources. Only 16% comes from the extraction of groundwater, where natural replenishment is more complicated. The variation in the numbers was attributable mainly to the operations in the Fluorine Chain in the United States of America. <sup>EN8</sup>

Water consumption in our operations (cubic meters) EN8			
	Surface water	Ground-water	Total use of water
2007	6,414,535	627,393	7,041,928
2008	5,861,867	936,159	6,798,026
2009	6,214,158	600,757	6,814,915
2010	8,604,753	1,604,036	10,208,789
2011	10,082,410	1,864,472	11,946,882

We do not know of any water sources that have been significantly affected by the extraction of water for use by Mexichem. EN9

We currently recycle and reuse more than 60% of the water that we utilize, mainly in the mineral concentration processes at our fluorite mine. EN10 In this way, only 38% of the water used is "first-use" water.

Recovery of water in the operations (cubic meters) EN10		
	Recycled and reused water (m <sup>3</sup> /year)	Recycled and reused water (as a % of the total)
2007	5,675,623.7	80
2008	5,917,573.6	87
2009	5,603,900.1	82
2010	5,417,633.0	53
2011	7,592,879.0	63

All Mexichem plants treat their wastewater before discharging it. The treatment goes beyond the standards required by the law in each country where we operate. The return of treated water to surface bodies, municipal drainage, and infiltration was 6,163,091 m<sup>3</sup>, which represents 51% of the total water used. This number includes the runoff water collected during the rainy season in the plants that have artificial dams or vessels. EN21 In the total soil-water balance, we did not quantify losses from evaporation or natural collection of rainwater in our tailings dam, which could change our water figures by up to 15%.

Discharge of wastewater (cubic meters) EN21	
	Wastewater discharged into rivers, creeks, and municipal drainage
2007	2,420,187
2008	2,550,174
2009	2,273,020
2010	5,803,709
2011	6,163,091

## 7.5 Controlling emissions and handling industrial waste

Mexichem continuously or periodically monitors emissions of gases and particulates at all of its facilities to guarantee the health and safety of neighboring communities, as well as the protection of the environment.

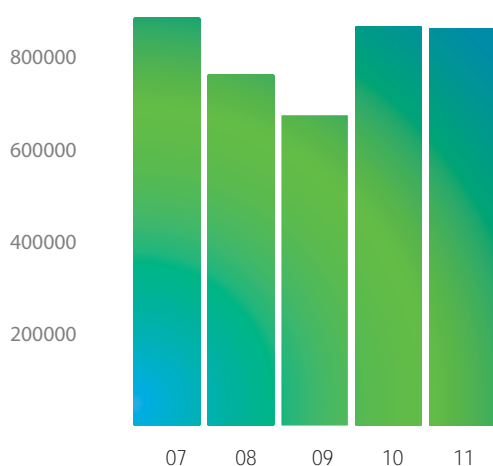
### Emissions of greenhouse gases

With the exception of Japan and England, none of the countries in which we operate are members of the United Nations Framework Convention on Climate Change or the subsequent Kyoto Protocol. Therefore, Mexichem has no obligation to conduct GHG inventories or commit to reducing emissions. Nonetheless, we have been taking GHG inventories since 2007, with the aim of reducing total emissions. These emissions are calculated based on the World Resources Institute (WRI) methodology and the World Business Council for Sustainable Development (WBCSD) methodology, as well as on emission factors from the *Comisión Federal de Electricidad* (CFE) reported in the GHG program of Mexico (<http://www.geimexico.org>) and the International Energy Agency (*CO<sub>2</sub> Emissions from Fuel Combustion, 2010 Edition*). The values from 2007 to 2011 have been recalculated in compliance with the criteria from WRI, WBCSD and the International Energy Agency factors. This estimate includes the values of NO<sub>x</sub> emissions, the consumption of fuels as natural gas, LP gas, diesel and gasoline, in fixed and movable sources, converted into tonnes of CO<sub>2</sub> equivalent. EN3, EN16, EN17

In 2011 the emissions of NO<sub>x</sub> were equivalent to 352 tonnes and SO<sub>x</sub> emissions to 72.5 tonnes. EN17, EN20

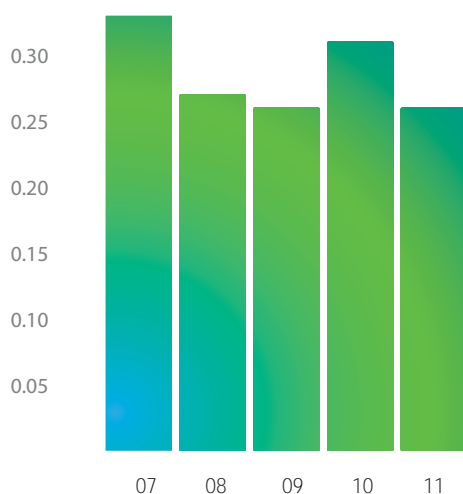
Mexichem's GHG emissions have also been affected by the acquisition and incorporation of new plants and companies. The high level of 2011 emissions reflects the purchase of PVC compound production plants in the UK and the USA.

Total GHG Emissions			
Equivalent tonnes of CO <sub>2</sub> per year <sup>EN16</sup>			
	Direct emissions of GHG (Corrected)	Indirect emissions of GHG (Corrected)	Total emissions GHG (Corrected)
2007	367,688	526,235	893,923
2008	335,960	424,145	760,105
2009	286,171	386,240	672,411
2010	357,084	507,718	864,802
2011	385,575	475,095	860,670



**Total emissions of greenhouse gases**  
(Equivalent tonnes of CO<sub>2</sub> per year)

Total emissions of greenhouse gases	
(Equivalent tonnes of CO <sub>2</sub> per year)	
2007	893,923
2008	760,106
2009	672,412
2010	864,803
2011	860,670



**Tonnes of GHG per tonne sold**

Tonnes of GHG per tonne sold	
2007	0.33
2008	0.27
2009	0.26
2010	0.31
2011	0.26

In 2011 the ratio of tonnes of GHG released per tonne sold decreased 16% with respect to 2010.

Our commitment to reduce these emissions has caused us to give even greater consideration to energy efficiency and energy reductions at all levels of the organization, from our offices to our industrial facilities. Likewise, we are giving greater weight to the use of renewable energy sources in order to decrease our carbon footprint.

Our plants will continue to implement energy efficiency in our processes, update technology, and evaluate options for renewable energy use:

**EN18**

Among our current initiatives, the following are worth mentioning:

- Conduct predictive maintenance with thermography and vibration analysis to reduce electrical risks due to thermal fatigue in connections. This analysis improves employees' safety and reduces energy consumption by eliminating points of power dissipation because of connection or component failures.
- Control downtime and scrap-generation in the production process.

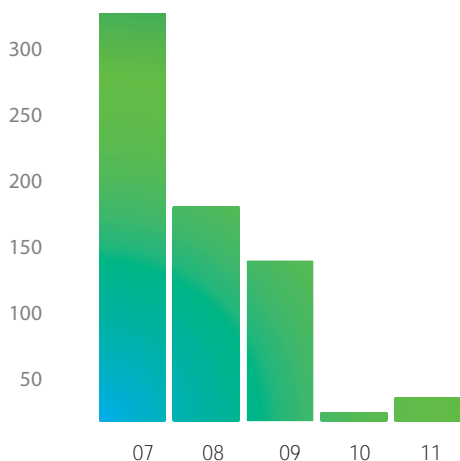
- Educate employees about the safe use of electric energy, for example, proper heating of molds, turning off socketing machines in smooth wall pipes, and turning off equipment when not in use.
- Inspecting transportation carriers initially and periodically as well as requesting proof of vehicle inspection.
- Substitute more energy-efficient machinery for inefficient machinery in the Integral Solutions Chain.
- Install new transformers to improve machines' loading capacity.
- Purchase an vacuum system for PVC mills, which will reduce air emissions and contribute to reducing energy consumption.

### Emissions that affect the ozone layer

**EN19**

As a result of implementing and maintaining good practices for handling substances that destroy the ozone layer, and in response to the agreements of the Montreal Protocol, Mexichem has achieved very significant reductions since 2007.

In 2011, emissions increased slightly due to our production of refrigerants. It is worth mentioning that, currently, the hydro fluorocarbons (HFC) represent only 1% of our total GHG emissions.



**Emissions of substances that damage the ozone layer**  
(Tonnes/year)

Emissions of substances that damage the ozone layer (Tonnes/year) <b>EN19</b>	
2007	332
2008	180
2009	139
2010	24
2011	35

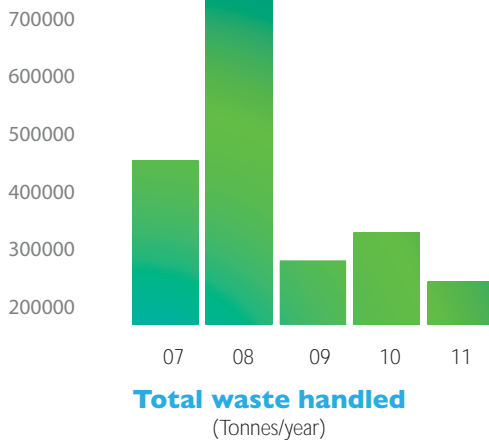


**Industrial waste generation and management**

We generate waste that, although not considered hazardous, requires special handling. This waste includes tires, glass, plastic, paper, cardboard, biodegradable organic material, wood, and others. Some of this waste, such as industrial oils, wood, cardboard, and paper, can be reused. Other waste types, such as plastics, can be recycled.

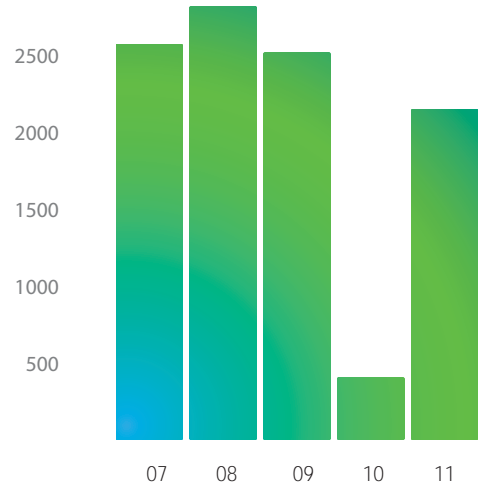
In 2011, a total of 242,437 tonnes of waste was generated. Ninety-nine percent was nonhazardous waste, and 1% was considered hazardous waste. The disposal methods used included: 96% filling and compaction, 2% incineration, 1% reuse or recycling, and 1% industrial containment. In some cases, waste that resulted from industrial operations, such as that used for subproduct processing, required special handling. Mexichem has established procedures that define the sustainable use and/or final destination for road paving, refilling and compacting materials. [EN22](#)

Of the packing materials used for distribution of Mexichem products, such as paper bags or industrial plastics, pallets, and containers, 17.8% are recovered at the end of their useful life. [EN27](#)



Total weight of waste handled (Tonne/year) <a href="#">EN22</a>	
2007	452,611
2008	741,917
2009	279,164
2010	327,801
2011	242,437

All hazardous waste generated by Mexichem operations is handled locally in temporary warehouses and is subsequently sent to controlled confinement sites, or for stabilization or recycling treatment, in compliance with the environmental regulations of each country. In 2011, Mexichem did not transport any hazardous waste internationally. [EN24](#)



**Transported hazardous waste**  
(Tonnes/year)

Hazardous waste transported locally to be treated (Tonnes/year) <a href="#">EN24</a>	
2007	2,572
2008	2,817
2009	2,516
2010	405
2011	2,149

The scheduled maintenance for the salt-extraction dome in Jáltipan, Mexico, caused an increase in hazardous waste in 2011. Diesel was recovered and sent for thermal destruction to harness its energy.

In 2011, there were five accidental spills that represented a total of 20.25 m<sup>3</sup> of material spilled. Mexichem plants have specific plans and trained personnel to handle these types of incidents in our operations as well as during transport. Therefore, these events were efficiently controlled, and the materials were recovered or neutralized, preventing any impact to the environment. [EN23](#)

Spills EN23			
Country	SUBSTANCE	SPILL QUANTITY	ENVIRONMENTAL IMPACT
Colombia	Hydraulic oil	0.008 m <sup>3</sup>	None
Colombia	Sodium Hypochlorite	7.910 m <sup>3</sup>	None
Colombia	Caustic soda	6.420 m <sup>3</sup>	None
United States	Refrigerant R-22	5.910 m <sup>3</sup>	None
Mexico	Additive	0.001 m <sup>3</sup>	None
<b>TOTAL</b>		20.250 m <sup>3</sup>	

### Generation and handling of tailings or waste-rock dumps

Most of our wastes from mining operations are tailings, also known as slag and sterile material. These waste materials are disposed of in specific sites made for that purpose, such as tailings dams and deposits in yards within our facilities. These sites have been approved for disposal by local authorities. These are not hazardous wastes that require special handling. MM3

None of the mining operations are conducted in or nearby indigenous communities. The federal government grants a concession for the lands that have been evaluated by the Mexican Geological System, and the land is privately owned or belongs to communal farms or the community. The mining operation land is regulated through a lease contract entered into with the local community. MM5

No conflicts exist with respect to the use of land. Because the concessions have been granted by the Mexican Government for extraction of minerals, Mexichem avoids any controversy related to land use. MM6, MM7

Mexichem allows and supports the presence of small individual artisan miners, who possess their own concession for extracting fluorite, on its extraction sites in Villa de Zaragoza, Mexico, which is the company's only fluorite extraction mine. Mexichem buys the mineral from the artisan miners at a preferential price, since there are no intermediaries in these business transactions. MM8 These miners and their families live on the land where they operate. Mexichem supports the community with basic services such as roads, water, electricity, elementary schools and basic medical attention, so that the families stay and enjoy a better quality of life. Preventing miner relocation is very important for Mexichem. MM9

Total tailings, slag and sterile material (tonne) MM3	
2007	392,837
2008	454,733
2009	411,413
2010	437,258
2011	575,869

### Compliance with applicable environmental regulations

Mexichem was assessed no fines or sanctions for failure to comply with environmental regulations during 2011. EN28 Nor did we cause significant environmental or logistic impact derived from the transportation of products or personnel during the year covered by this report. EN29

## 7.6 Development and introduction of safer and more ecologically sound products

We have adopted a precautionary approach for products destined for the medical and food industries. The Food and Drug Administration (FDA) validates our raw materials by performing physicochemical, bioaccumulation, cytotoxicity, microbiological, melamine, genetic and biocompatibility tests. 4.11

### Replacement of lead-based stabilizers

In accordance with our commitment to the environment and the reduction of problematic materials such as lead, years ago Mexichem's Integral Solutions plants in Brazil and Argentina replaced their lead-based stabilizer, one of the additives used in the manufacture of pipes, with more environmentally sound alternatives, such as organic calcium and zinc salts.

Calcium zinc is used in our plants in Colombia, Venezuela, Peru, Ecuador, and Central America, while Mexico is carrying out tests with tin stearate stabilizers.

In addition, with the support of the PVC Institute of Brazil, we are committing ourselves to replace lead-based stabilizers in the entire PVC production chain, including the pipe and connector transformers and manufacturers of PVC resin and stabilizers. The objective is to promote the Brazilian movement to replace lead-based stabilizers with calcium and zinc compounds.

Our company in Brazil acted prior to the voluntary agreement led by the production chain and completed the replacement of the extrusion stabilizers. The project was shared with the Brazilian PVC chain, which successfully replaced lead with calcium and zinc, achieving economic sustainability by decreasing costs and increasing product demand. [EN26](#)

## 7.7 Protection of vulnerable ecosystems and biodiversity

### Protected or restored habitats

Some of the operations and extractions of materials such as fluorite and salt that Mexichem exploits in Mexico are located in areas that have significant biodiversity. For our company, ensuring the integrity of the natural habitats around mining operations is fundamental for guaranteeing integrity of natural resources and the continuity of our business. A notable example of an intervention in this matter is *Álamos de Martínez*, which was declared in 2007 by SEMARNAT as a protected area of the Biosphere Reserve of the *Sierra Gorda*, Guanajuato. This is an area where fluorite is extracted from waste discharged by operators prior to Mexichem's acquisition in 2008. The extraction is done with no damage to the reserve.

The industrial operations of the Chlorine-Vinyl Chains and Integral Solutions are conducted mainly in specifically designed and selected industrial zones and areas where the environmental impact has been mitigated by action from local governments. No actions were necessary for these operations.

Mexichem's biodiversity strategy is focused on its fluorite mining operations, which may have an impact on the environment. Mexichem's protected areas strategy has three objectives:

1. Reducing the volume of waste in the zone, complying with the regulations established by the SEMARNAT and the General Law for Prevention, and Comprehensive Waste Management;
2. Not affecting the ecosystem with the operation of the mine because the activity itself consists of recovering fluorite from waste already exploited; and
3. Implementing a plan for recovering and protecting biodiversity in the zone. [EN13](#)

### Strategies and actions for limiting negative impacts on biodiversity [EN14](#)

Mexichem's commitment to protecting biodiversity is reflected in its Human Rights Policy and its Corporate Code of Ethics. Having businesses in countries with very rich biodiversity obligates us to act responsibly in all of our activities. Therefore, it is particularly relevant for the company to implement strategies to manage our mining operations' impact on biodiversity.

From the start, we perform environmental impact studies with the purpose of determining the proper actions for the protection and restoration of natural habitats and species found in our operations' area of influence. The aspects we focus on and the actions we take for controlling the risks and impact on biodiversity are described below:

Focus	ACTIONS
Species that inhabit the region	<ul style="list-style-type: none"> <li>• Monitoring</li> <li>• Recording events related to each species</li> </ul>
Quality of air and water	<ul style="list-style-type: none"> <li>• Monitoring</li> </ul>
Waste	<ul style="list-style-type: none"> <li>• Ensuring the proper management and improvement of waste</li> </ul>
Communities	<ul style="list-style-type: none"> <li>• Supporting organizations that preserve biodiversity</li> <li>• Establishing efficient communication channels with interest groups</li> </ul>
Invasive species	<ul style="list-style-type: none"> <li>• Monitoring and control</li> </ul>
Native vegetation	<ul style="list-style-type: none"> <li>• Reforesting</li> <li>• Follow-up and control of the replenished population density</li> </ul>
Physical, chemical and temporal dimension	<ul style="list-style-type: none"> <li>• Study of physical and chemical indicators</li> <li>• Studies of toxicity</li> <li>• Study of bio-indicators of environmental health</li> </ul>

### Endangered species whose habitat is located in areas affected by our operations EN15

Mexichem is concerned about the species located around its mining installations; therefore, we think it important to understand the species and determine their level of risk. In this process, six species have been identified with different levels of risk

according to the *Comisión Nacional para el Conocimiento y uso de la Biodiversidad* (CONABIO) (National Commission for Knowledge and use of Biodiversity): two vulnerable species, two threatened species, and two critically endangered species. These species can be found around a mine and two fluorite mining plants in Mexico: Villa de Zaragoza and Río Verde, in San Luis Potosí, and Álamos de Martínez, in Guanajuato.

	SPECIES SUBJECT TO SPECIAL PROTECTION		THREATENED SPECIES	ENDANGERED SPECIES
Río Verde	Skunk	<i>Spilogale pygmaea</i>		Rattle Snake <i>Crotalus molossus</i>
Álamos	<i>Biznaga barril de acitrón</i> (Cactus)	<i>Ferocactus Histrix</i>	Golden Eagle <i>Águila Chrysaetos</i>	Quail <i>Colinus virginianus</i>
			Sparrow <i>Spizella wortheni</i>	
Villa de Zaragoza	Skunk	<i>Spilogale pygmaea</i>		Rattle Snake <i>Crotalus molossus</i>

### Biodiversity of water resources and related habitats EN25

Water, a limited resource, is vital for the operation processes of Mexichem. That is why Mexichem requires plants to identify affected bodies of water within our operation zones. In addition to that, our environmental impact studies determine the size, protection status, and the biodiversity value of the water resources in order to plan necessary protection measures.

The discharge of Mexichem's wastewater does not affect any aquifers. Mining units reuse all of

the water in their areas of operation. Chemical and manufacturing plants use waste water systems for complying with and going beyond water discharge laws.

In the case of the fluorite extraction mine in Río Verde, San Luis Potosí, Mexico, studies show biodiversity in the runoff areas will not be affected. In the operations in Álamos de Martínez, Guanajuato, Río Verde and Villa de Zaragoza, San Luis Potosí, in Mexico, water is handled in a closed cycle. We only have one fluorite extracting mine and the rest are fluorite processing plants.

### Management plans for biodiversity protection <sup>MM2</sup>

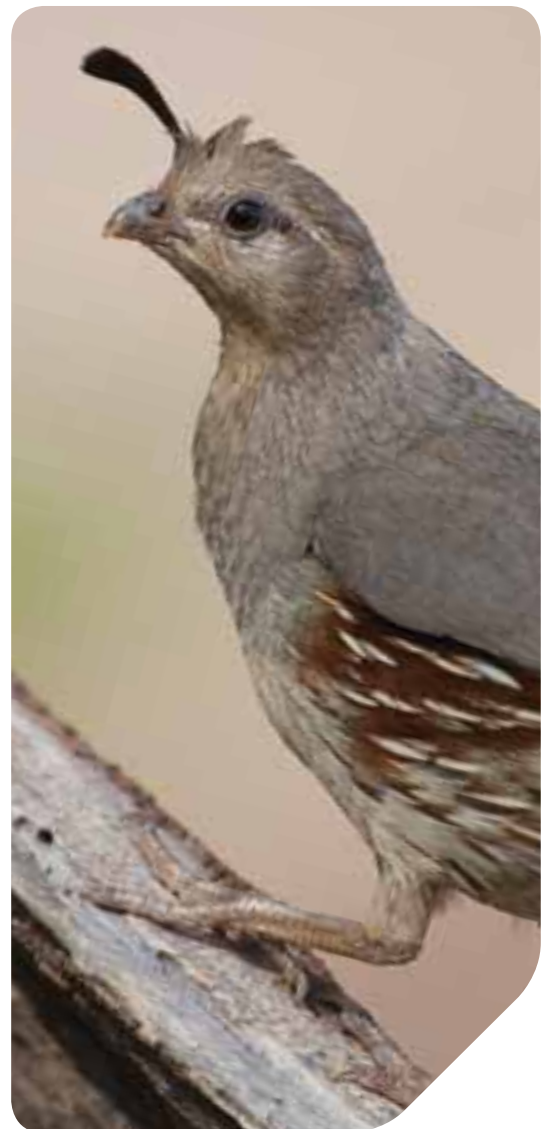
Since Mexichem's commitment involves the protection of the biodiversity around its operation sites, it is very important for us to understand the current condition of the species. With that in mind, we perform an Environmental Impact Study in all of our mining operation sites. Based on the results, we formulate plans to protect biodiversity. This is also a legal requirement that Mexican agencies like SEMARNAT establish as a prior condition for extraction in any mine.

The following aspects are considered in the environmental impact analysis:

- The impact scale that the mining operation or the extraction of material from the deposits would have

- The level of sensitivity of the area where the installations are located
- The use of the biodiversity by the local community
- The importance of the community and the employees in the protection of the environment and its biodiversity
- The identification of the protected areas where mines are located
- Actions for compensation and protection of the zone
- Actions for proper closing of the mining zones once the operations are ended.

Mexichem identified actions to take based on its environmental impact evaluations and biodiversity management plans.





## Management plan for biodiversity protection

Mine Operation Phases	REQUIREMENTS	ACTIONS TO BE TAKEN BY MEXICHEM	Río Verde	Álamos	Patio San Luis	Villa de Zaragoza
Exploration and planning of a deposit	Buffer area and compensation plans	Conduct a risk analysis of the ecosystems: <ul style="list-style-type: none"> <li>Including an evaluation of probability that adverse effects may occur or are occurring as a result of exposure to one or more factors of environmental stress</li> </ul>	●			●
	Identification of endangered species	Identify species in field and their risks		●		●
	Level of acoustic and light pollution for species	Conduct study and perimeter analysis of noise and light (including acoustic levels in the area where the installations are located and their exterior, as well as light radiation)	●	●	●	●
	Protection of the species; mitigation of adverse effects in the reproduction phase of protected and vulnerable species	Programs for protection of species that are found at the operation sites	●	●	●	●
	Preservation of the recharge levels in aquifers	Aquifer recharge study, including: <ul style="list-style-type: none"> <li>rational management of water resources</li> <li>comprehensive use of rain water; recharge of aquifers</li> <li>mechanisms for preservation of natural resources.</li> </ul> Elaboration of a strategic plan considering the restoration of the ecosystem including the following areas: <ol style="list-style-type: none"> <li>current control</li> <li>reduction of soil erosion processes</li> <li>sustainable development of the natural resources, taking into consideration socioeconomic and sociocultural aspects</li> </ol>		●		●
Extraction	Evaluation of efficiency in the compensation plans	Compliance with conditions established by the authorities	●	●		●
	Monitoring buffer zones, ecosystem health and level of surrounding biodiversity	Execute a Biodiversity Program, including distribution of flora and fauna species, spatial distribution and population density	●	●		●

Mine Operation Phases	REQUIREMENTS	ACTIONS TO BE TAKEN BY MEXICHEM	Río Verde	Álamos	Patio San Luis	Villa de Zaragoza
Extraction	Training of interest groups about the care and protection of the threatened species and how to proceed in case encountering one	<p>Create a Communication and Training Program that includes:</p> <ul style="list-style-type: none"> <li>• knowledge dissemination</li> <li>• monitoring of knowledge of the plant and external personnel found near the operation site</li> </ul> <p>Creation of workshops for the communities, including:</p> <ul style="list-style-type: none"> <li>• good practices of relations with the community</li> <li>• conferences, workshops, courses and projects for supporting the locals.</li> </ul>	●	●	●	●
Support to NGOs that protect endangered species	Support to NGOs that protect endangered species	Create relationships with NGOs for protection of flag species in the areas of operation.	●			
	Avoid erosive processes (paying attention to the embankment inclination grade)	Adapt the store sites for tailings waste: adapt embankments in compliance with the NOM-141-SEMAR-NAT-2003 Perform safety-factor studies on the embankments.	●	●	●	●
	Monitoring air quality	Study and program for monitoring suspended particles including: <ul style="list-style-type: none"> <li>• toxicity level of suspended particles at the site and surrounding areas</li> <li>• negative effects for ecological balance.</li> </ul>	●	●	●	●
	Monitoring the quality level of the discharge of different types of water	Create a log book that includes discharges of wastewater and analysis of water quality for discharge.	●	●		
	Emissions calculation	Exclusive Environmental License which must include the measurements of emissions into the atmosphere taken at the site, suspended particles and working environment.	●	●	●	●
Reincorporating deposits to the surrounding ecosystem once extraction ends	Follow-up of reforestation actions	Development and execution of a reforestation program that includes recovering endemic species, as well as following-up and controlling the population density of the reintroduced species.	●		●	●

Mine Operation Phases	REQUIREMENTS	ACTIONS TO BETAKEN BY MEXICHEM	Río Verde	Álamos	Patio San Luis	Villa de Zaragoza
Reincorporating deposits to the surrounding ecosystem once extraction ends	Reintegrate the ecosystem before the end of mining operations (not necessarily once all operations have concluded)	Development and execution of a reintroduction program for the site. The program contemplates activities of restitution, from the operation phase to the final closing, in compliance with different regulations: <ul style="list-style-type: none"> <li>• NOM-157-SEMARNAT-2009 Establishes operations for closing of operations related to mining</li> <li>• NOM-141-SEMARNAT-2003 Establishes the requirements of environmental protection for storing the waste tailings from fluorite recovery operations.</li> </ul>	●		●	●
	Monitoring the health of the ecosystem reintroduced in the area	Study of physical indicators, including physical properties of the soil (structure, compactness, texture, apparent density, porosity capacity of water retention, infiltration, depth, water conductivity, etc.)	●	●		●
	Bio-chemical monitoring of the soil	Study chemical indicators and consideration regulations: <ul style="list-style-type: none"> <li>• Including mobility, bio-availability, based on their properties, and degradability in the environment (presence of intermediate compounds or final degradation products), trace elements</li> <li>• The limits established as maximum values according to NOM-147-SEMARNAT/SSA1-2004.</li> </ul> Study of toxicity: Includes bio-availability of any organic or inorganic pollutant present in the soil, expressed in terms of toxicity, biodegradability, and extractability in time.	●	●	●	●

Our main mining operation is the fluorite (calcium fluoride) extraction mine located in the village of La Salitrera in the Municipality of Zaragoza, in San Luis Potosí, Mexico. Its surface area is 500 hectares, approximately 50 of which are for the mining operation, while the remaining 450 have not been impacted. The ore being extracted is located southeast of the Sierra de Alvarez, in the western part of the Eastern Sierra Madre, outside of the boundaries of the polygon de-

clared to be a protected natural area by the government of the state of San Luis Potosí. Due to its geological characteristics and geography, this region is naturally suited for mining; in fact, mining activities have been carried out here since the 1950s. The area where the mine is located presents typical environmental characteristics of arid zones, where the main features that determine the productivity potential for the zone are the soil type, the topography, and the limited water resources. **MMI, ENI I**

The most significant aspects and environmental impact of the mine are:

**Noise:** Generated by the milling, with intermittent presence during periods of equipment operation.

**Dust:** Generated by fugitive emissions from the silos where fluorite is stored.



**Waste water:** No significant impact is generated because only water for bathrooms and kitchens is used; the process water is kept in an independent system and is recirculated permanently into the process and is used only for cooling.

**Soil pollution:** The operation does not pollute soils because chemical substances and hazardous wastes are contained in the storage area. The company does not place chemical products, such as sulfuric acid and motor oil, directly on the natural ground.

Mexichem altered the ground and the vegetation during construction of the plant by displacing soil to level and clear the site; however, this area does not have high biodiversity since it was declared an industrial-use site long ago.

The existing habitat primarily promotes retention of bird species typical of arid zones and some small mammals and reptiles. The current effect on fauna is considered to be of little impact, as larger animals were displaced from the beginning of human settlement, before mining facilities were established.

Mexichem mitigates the biodiversity impact in the Villa de Zaragoza Mine, San Luis Potosí. Mitigation actions prevent, control, mitigate, correct, or compensate for the environmental impact with different activities during both the operation and closing phases.

The strategy and actions Mexichem implemented to manage the biodiversity impact from its mining operations are mostly small in scale, and we established and implement measures to mitigate them.

Two species (skunks and rattle snakes) were identified in the mine's zone of influence and require special attention; there are no flora species requiring special protection; the cactus known as *biznaga barril de acitrón* grows near the mine in an area that is not currently affected, nor is it expected to be affected in the future by the mining operations. [ENI1](#), [ENI2](#), [ENI3](#), [ENI4](#), [ENI5](#)

We plan to close two mines, fluorite (San Luis Potosí) and sulfur (Jáltipan, Veracruz). [MM10](#)

## Mexichem presents *Hydros IV*, its new book on water management

The fourth edition of *Hydros* presents as its subject the *Fuente de Tlaloc* in the Chapultepec Forest in Mexico City. *Hydros* is a series of books published by the Kaluz Group and its companies Mexichem and Elementia, to raise awareness of the importance of water as a universal value for humanity.

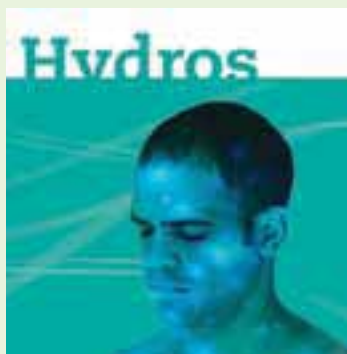
*Hydros IV* reflects the importance Mexichem gives to handling water, as it is a vital resource for the balance of nature and life itself. This conviction and commitment to water management is reflected in our business culture and the processes in our different chains and operations.

Don Antonio del Valle Ruiz, Honorary Chairman of the Board, emphasized that the environmental policies of the Kaluz companies contribute to ecological balance. He described in detail how Mexichem invests 83 million pesos annually on environmental control projects; this investment allows the company to be at the forefront of water management challenges.

The book's visual and editorial content leads to a profound reflection on the meaning of water and its presence in every moment of our lives, and highlight that it is a resource that we should protect not only today but always.

*Hydros IV* discusses the fact that human beings not only drink water but also ingest it in our food and use it in products and services. Indeed, every individual uses 5 thousand liters of water every day, which in one year represents half of the water contained in an Olympic-sized swimming pool.

Therefore, it is of great importance that we all raise awareness and modify our consumption patterns of this vital liquid. That is the only way we can "generate a change in our conduct that will bring balance back between a being and its essence; between use and abuse; between conscience and impulse."



For more information:  
<http://www.projecthydros.com>

Mexico

## Commemorating World Environment Day, Mexichem releases an internet video on the responsible use of water

With the purpose of educating the public on the subject of water, Mexichem released a video about *Hydros IV* on the internet to celebrate World Environment Day (June 5). The video is inspired by the book, created by Mexichem, and produced by Editorial Satori.

This three minute-long video is an invitation to reflect on the close relationship, although sometimes irresponsible, of human beings and water. The diffusion through social media will help reach a larger audience.

The video can be viewed at:  
<http://www.projecthydros.com>

SO1, 4.12, 4.16

Mexico



## Ecosystems, biodiversity, and vulnerable-species protection in the Palo River basin, Mexichem Colombia, Guachené Plant

4.12, EN13

Mexichem Colombia—in partnership with UNICEF, sugar mills in the area where the Guachené Plant is located, and represented by ASOCAÑA (The Water for Life Fund) and the local community (indigenous councils)—helps to protect and preserve strategic water resources of the Andean páramo, sub-páramo, and high forest. This work guarantees a long-term water supply in the area of influence in the Palo River basin.

The hydrographic basin of the Palo River is one of the largest in the northern zone of the region of Cauca. Located in the southwest of Colombia, it covers an area of 152 thousand hectares and measures 92 kilometers long.

The Colombian afro-descendant communities in municipalities like *Guachené*, *Caloto*, and *Puerto Tejada*, where the employees of the Mexichem pipe plant live, are the predominant users of the water. Indigenous communities of NASA ethnicity transport and collect the water. Both communities suffer from high levels of poverty.

The páramo and sub-páramo ecosystems are considered sacred lands by these indigenous peoples.

The protection of those ecosystems is of strategic and vital importance for preservation of water resources. The moors, located in indigenous territories within the municipality of *Toribío* and *Jambaló*, are crucial for their capacity to produce and transport water, and to prevent soil degradation; they reduce floods in the towns located in flat areas near the Palo River.

The project has three focal points:

1. Protection of water springs and riverbanks by way of banking
2. Converting economic activities from extensive livestock farming into more nature friendly activities, and
3. Community development.

The resources committed by the UNICEF Alliance of Business Owners and Indigenous Communities reached USD265,457 and was distributed as follows:

1. ASOCAÑA, *Agua para la vida* (Water for Life Fund), 19.5%
2. UNICEF, 19.5%
3. Mexichem Colombia - PAVCO, 19.5%
4. CORPOPALO and Indigenous Councils: 41.5% and labor.



### Acknowledgement to Mexichem for reducing GHG emissions by using railroads

Kansas City Southern de México S.A. de C.V. (KCSM), a Mexican leader in railroad transportation, recognized Mexichem for having avoided 12,884 tonnes of GHG emissions during 2011 by using the railroad to transport its products and raw materials.

Trains are an inexpensive and ecologically responsible option for transporting large volumes of cargo over long distances because they use less fuel than trucks. Choosing trains can save up to 75% in GHG emissions. One single train can transport one tonne of cargo for 700 kilometers using only one gallon of fuel and can carry the cargo of 280 trucks.



Mexico

## 7.8 Preparing for Climate Change <sup>EC2</sup>

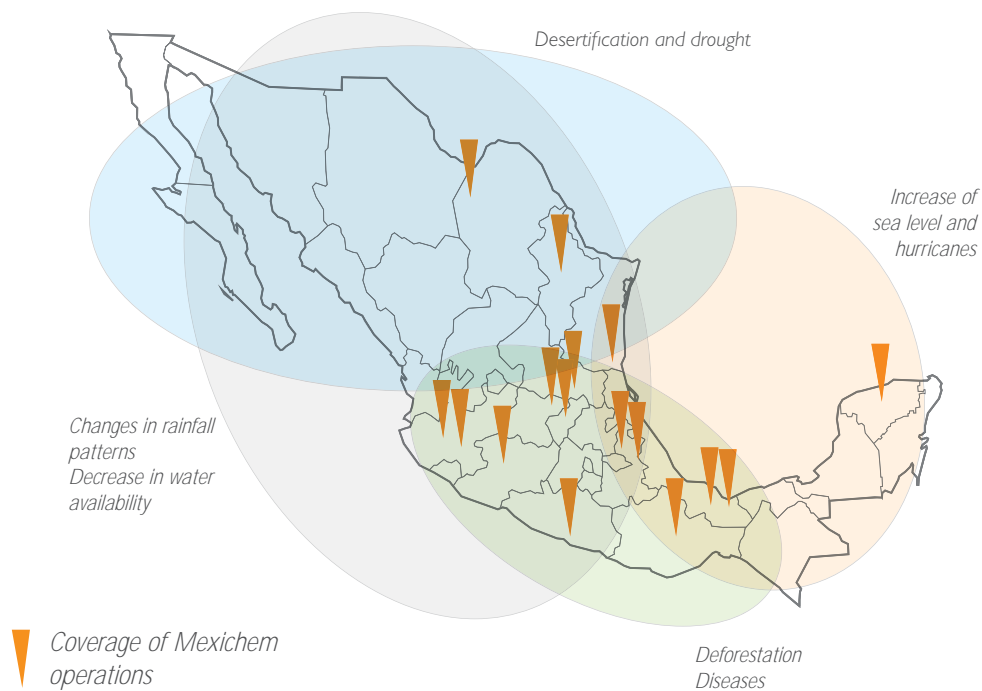
Mexichem is aware of the consequences of climate change and is working proactively to mitigate the risks while searching for opportunities to go further and get closer to meeting the needs of its clients.

Our Mexican operations conducted an initial evaluation of the impact and potential opportunities whose methodology can be extrapolated to other regions of the world where Mexichem has operations and/or markets.

Climate change may mean higher operational expenses because of increases in the price of supplies and energy, the closing of affected operations and relocation of suppliers, protective measures for natural phenomena (for example, construction of dikes at marine installations, protection against floods or fires), relocation of installations to sites with more favorable conditions, and larger environmental regulatory requirements. It can also present new and interesting business opportunities, however, such as:

- Opening new niches and markets—Introduction of products that contribute to adaptation and mitigation of climate change impacts; and
- Long-term positioning—Preference of the consumer for companies committed to environmental care and social responsibility.

Based on the evaluation of our Mexico operations, it is possible to foresee both a series of opportunities and threats for our businesses, operations, and facilities in this country. Such opportunities may translate into profitable businesses if the company achieves an appropriate market position in the identified niche. The company must be able to rapidly identify the service and be among the first to establish itself in the market. These business opportunities will remain subject to the effects of climate change, and so adaptation will have to follow the effects of climate change. For example, even though a small decrease in rainfall in the central zone may mean a business opportunity for Integral Solutions due to a higher demand for water extraction and irrigation systems, a drastic decrease in rainfall may force farmers to relocate their operations to other zones or countries.



Some of Mexichem installations may need to undergo physical adaptations resulting from climate change. An example is the protection of facilities that are located on coastlines that may be threatened by the increase of the sea level or extreme weather events. Also, some operations may be modified or strengthened in anticipation of climate-change effects. For example, the company can formulate a series of options so that company logistics is altered as little as possible in the event of a hurricane.

### Risks

Mexichem's greatest risk is the physical risk to our facilities, as well as the availability of water for our operations. The company must conduct a vulnerability study of its facilities and the surrounding communities. Depending on the location, the following dimensions of vulnerability must be considered:

- Protection for coastal facilities from the increase of sea level and the number and intensity of extreme weather events
- Fires caused by droughts
- Storms, floods and landslides

It is important to monitor the progression of diseases in regions where they historically did not occur. An impact to our workforce or food production could result in an impact on the company's productivity.

Mexichem anticipates that there will be new climate regulations that may impact its operations. The regulation of water supply and emissions are the main short-term factors on the legislative agenda.

Mexichem has identified and mitigates its operative risks in sea level zones by way of constant hurricane monitoring, with the support of forecasting models by the National Water Commission and the National Hurricane Center in Miami, Florida. That way, we can plan actions related to our supply chain operations and plant operations and can prevent difficulties that may result from these types of events.

Extreme weather events have impacted the company's logistics. In some cases production units were isolated and unable to receive or send out

any products by sea or land transportation. There have also been cases where the flow of materials was interrupted during transportation of goods (closed ports in the United States because of a hurricane or inaccessible border crossing bridges due to floods).

The Intergovernmental Panel on Climate Change (IPCC) forecasts that extreme meteorological events will continue to increase in intensity and number. Mexichem will implement contingency plans when facing such events, seeking to return operations to normal as soon as possible through new company logistics options. Redundant transport options, different routes and logistic means, or emergency inventories are examples that we are considering as part of these emergency plans.

If Mexichem is able to operate in an almost normal manner during those events, it will have a clear competitive advantage in the market.

### Opportunities

Mexichem is considering alternative energy sources to improve the sustainability of its operations. With that in mind, it produces 50% of its electric energy by cogeneration in its Mexican Altamira Plant, which is one of its most important plants for production of PVC resin. In Coatzacoalcos, Mexico, the most important chlorine production plant, the CID is constructing a cogeneration plant for supplying all of the electric power it needs; those sites are the company's two largest consumers of electric energy. Additionally, Mexichem is conducting a viability study for the use of alternative energy in its facilities, including wind power and solar energy.

Water is a vital resource for Mexichem's extraction, processing, and general operations. That is why several of its plants have closed-loop water systems and all of its plants have systems for wastewater treatment. Mexichem recovers more than 60% of the water it uses. In order to mitigate water availability risks, Mexichem seeks to replicate these actions in all of its facilities. Mitigation will enable us to avoid future regulatory risks from entities such as the National Water Commission.

The company is constantly working to remain at the forefront in order to go further and adapt itself to its clients' needs. Studies done by the National Ecology Institute (INE) and the Department of Natural Resources and Environment (SEMARNAT) show that one of the consequences of climate change is the extreme change of temper-

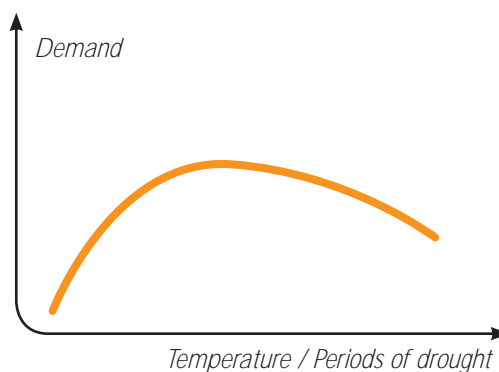
atures. These changes may represent an area of opportunity due to a higher demand for air conditioners, as well as the consumption and production of more efficient refrigerants. Therefore, Mexichem goes further with the investigation and development of new viable refrigerants that may replace existing ones.

### • Integral Solutions Chain

Currently, sales from this division to the agricultural sector represent around 20% of total sales, with Baja, Mexico, representing the largest market. Some studies forecast changes in the rainfall patterns derived from climate change for the entire country, which will result in less-frequent rain in the large agricultural regions of central and northern Mexico.

As rain diminishes in the region, the demand for water extraction and irrigation of farmland may grow. The decrease in rainfall may reach such a level that the aquifers dry out, however, or that the increase in temperature directly affects the productivity of farming land.

Human settlements that depend on rivers where a decrease of rainfall is expected will also increase demand for alternative methods of water extraction, both for industrial and domestic use. The Integral Solutions chain will be able to supply this growing market, offering its clients different solutions such as irrigation systems, training, and water filtering in areas where rainfall is either low or high.



Public perception and awareness of the damage caused by open dump sites is growing, and some jurisdictions are beginning to regulate them. The Integral Solutions chain has solutions for containing leachates by using geomembranes, and demand in the public sector for these types of products may grow quickly.

### • Chlorine-Vinyl Chain

Our Chlorine-Vinyl Chain offers comprehensive solutions for treating wastewater. In the zones where rainfall is expected to decrease, less water will be available for domestic and industrial use. In that case, the industrial sector will have to use water more efficiently, either by modifying operating facilities to use closed-loop processes or by reusing their wastewater, which will force them to use wastewater systems. Therefore, in areas of low rainfall, public- and private-sector demand for wastewater-treatment systems will significantly increase, requiring more chlorine for treating water and caustic soda for regenerating the resins for water treatment.

Maintaining and increasing our customer base is fundamental for Mexichem. Because of this, we want to disprove myths regarding our products with technical, economic, and scientific tools that demonstrate the benefits of using our products. One example is chlorine in water. Mexichem has the elements necessary to create facilities that neutralize chlorine emissions in case of accidents and also provides technical information that explains proper use. Mexichem's chlorine offers tremendous advantages for users.

As is the case within the Integral Solutions Chain, an effective marketing strategy and straightforward positioning will create a competitive advantage for Mexichem in this growing market.

Phosphates in soaps and detergents have been linked with eutrophication of water bodies, and their natural degradation produces carbon dioxide. Therefore, the Chlorine-Vinyl Chain has started to shift its phosphate business to other applications less harmful to the environment.

Mexichem plants are certified to produce food-grade phosphate, which can be used as a food preservative. Climate change may increase the need for more logistics support in the world food market, which would increase demand for food preservatives. Mexichem is even developing sodium-free phosphate additives, following global healthy-living trends.

Mexichem is also exploring other applications for phosphates as hygroscopic agents for the construction sector, specifically for concrete foundation construction. Climate change may cause a strong demand for infrastructure, therefore the concrete industry may consequently have more demand.

### • Fluorine Chain

Our innovative technical programs have supported industrial users from all over the world—from the automobile industry, to refrigeration and air conditioning, to foam aerosols—in order to move away from CFC and HFC.

Fluorine brings different benefits, sometimes imperceptible, to modern life. Our products are an integral part of many things that society takes for granted:

- Our refrigerants keep food fresh and safe, preserve stored blood in biomedicine, and are used in air conditioning in offices, cars and hospitals
- Our medical-use propellants help millions of asthmatic patients breathe more easily
- Our fluorated chemical inputs are used to make anti-adherent coverings for spacecraft and cooking utensils.

Mexichem Fluorine supports global regulation under an international agreement to contain and reduce the growing potential of HFC emissions. International coordination is essential for technological, economic, and environmental reasons. It is vital that decisions are made that enable the optimal and appropriate use of HFCs, as they have a wide range of applications to provide safe and efficient refrigeration.

Mexichem is investing in a research center in the United Kingdom to develop refrigerants with a lower global-warming potential. We are looking for that same—or greater—efficiency while at the same time contributing to decreasing global warming.

Mexichem has a series of projects in its three different chains that take climate change into account, as well as the market tendencies and the demand for products that, among other things, will allow the company to enjoy continuity in its operations.





### Indirect economic impact EC9

#### Strategy

Mexichem's triple-bottom-line management model includes the involvement and development of the communities in which it operates. In this way, Mexichem's actions have an impact in the communities around them and, if this impact is positive, create a spiral growth effect. This positive impact in the communities may take different forms.

#### Awareness-raising

By evaluating the vulnerability of its facilities and the surrounding communities, Mexichem has identified the most vulnerable areas. Protecting or moving operations (or labor) from those areas and protecting the lives of the people is cheaper than repairing the damage caused by an ecological disaster.

#### Protection

Mexichem can monitor the progress of diseases that endanger its workforce and the food they eat. Monitoring will prevent the population from

encountering these risks. Mexichem will not deplete local water sources because our operations are efficient and have a high percentage of recycling or closed-loop water systems.

Mexichem aims to implement programs that favor the economic and social development of the communities in which we operate.

Mexichem's actions to support local communities focus on the small local miners who sell fluorite to Mexichem; these miners perform the extraction and recovery of fluorite with a higher level of purity since they extract the material manually, and Mexichem acquires it at a higher price because it has a higher concentration of fluorite; moreover, its extraction is cleaner.

Mexichem's fluorite purchases have a larger effect on the local economy. Community members who own dump trucks and belong to the local association are in charge of the transportation of this material. EC9, SO1

## Brazil

### Mexichem Brazil receives the *Exame* award for the fifth consecutive year

Mexichem Brazil received the *Exame* award for Sustainability in 2011 for the fifth consecutive year, recognizing the company as a model of sustainability in Brazil.

This award recognizes the company's triple-bottom-line business strategy.

The *Exame* award on Sustainability (12th edition) is an analysis of corporate sustainability practices in Brazil. The ranking is coordinated by the *Centro de Estudos em Sostenibilidad* (Sustainability Studies Center) of the Getúlio Vargas Foundation which evaluates the strategies and practices of companies in all three sustainability dimensions.



## United Kingdom

### Mexichem Fluorite Distributors Conference

Mexichem Fluorite organized its first European Conference of Distributors. It took place in the Hard Days Night Hotel, the only hotel inspired by the Beatles, located within the center of the Beatles' neighborhood in Liverpool.

The Conference in Liverpool offered the perfect opportunity for Mexichem Fluorite to announce its future strategy to its European Distributors and for them to meet the Mexican Directors. These conferences are organized regularly to encourage communication and building relationships with European Distributors. These events are also good networking opportunities.

Distributors from across Europe attended the Global Mexichem Fluorite Business presentations regarding Mexichem assets, the current business, and future plans. The acquisition of the plant R125 of Showa Denko in Kawasaki, Japan, and detailed information regarding our advances in the field

of low-global-warming-potential refrigerants were the most highly attended.

After reviewing the day's agenda, everyone toured the docks and the harbor of Liverpool in two Yellow Duckmarines, authentic World War II amphibious vehicles; so the tour was given on land as well as on the river!

Feedback from this event has been very positive, and our Distributors showed great confidence in their future with Mexichem.



## Index of Indicators GRI 3.12

### Mexichem GRI Indicators Version G3

Category	GRI ID	DESCRIPTION OF GRI INDICATOR	Page	Reported
	<b>1</b>	<b>PROFILE: STRATEGY AND ANALYSIS</b>		
	1.1	Statement from the most senior decision-maker of the organization	16	✓
	1.2	Description of key impacts, risks, and opportunities	13	✓
	<b>2</b>	<b>ORGANIZATIONAL PROFILE</b>		
	2.1	Name of the organization	3, 20	✓
	2.2	Primary brands, products, and/or services	10	✓
	2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures	4, 8	✓
	2.4	Location of organization's headquarters	3	✓
	2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report	6, 7	✓
	2.6	Nature of ownership and legal form	20	✓
	2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries)	7, 10	✓
	2.8	Scale of the reporting organization	27, 28	✓
	2.9	Significant changes during the reporting period regarding size, structure, or ownership	22, 28	✓
	2.10	Awards received in the reporting period	61-67	✓
	<b>3</b>	<b>REPORT PARAMETERS</b>		
	3.1	Reporting period (e.g., fiscal/calendar year) for information provided	16, 19	✓
	3.2	Date of most recent previous report (if any)	19	✓
	3.3	Reporting cycle (annual, biennial, etc.)	16, 19	✓
	3.4	Contact point for questions regarding the report or its contents	Inside back cover	✓
	3.5	Process for defining report content	19	✓
	3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers).	19	✓
	3.7	State any specific limitations on the scope or boundary of the report (see completeness principle for explanation of scope)	19	✓
	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations	19	✓
	3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report. Explain any decisions not to apply, or to substantially diverge from, the GRI Indicator Protocols	19	✓
	3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g., mergers/acquisitions, change of base years/periods, nature of business, measurement methods)	19	✓

GRI ID	DESCRIPTION OF GRI INDICATOR	Page	Reported
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	19	✓
3.12	Table identifying the location of the Standard Disclosures in the report	2, 95-100	✓
3.13	Policy and current practice with regard to seeking external assurance for the report	19	✓
<b>4</b>	<b>GOVERNANCE, COMMITMENTS, AND ENGAGEMENT</b>		
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight	20, 22	✓
4.2	Indicate whether the Chair of the highest governance body is also an executive officer	20	✓
4.3	For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members	20	✓
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	21	✓
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance)	21	✓
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	20, 21	✓
4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental, and social topics	20, 21	✓
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation	11, 21	✓
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles	21	✓
4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance	21	✓
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization	79	✓
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses	45, 53-60, 87, 88	✓
4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization: * Has positions in governance bodies; * Participates in projects or committees; * Provides substantive funding beyond routine membership dues; or * Views membership as strategic	107	✓
4.14	List of stakeholder groups engaged by the organization	31	✓
4.15	Basis for identification and selection of stakeholders with whom to engage	31	✓
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	31, 52, 56-60, 87	✓
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	31	✓

Category	GRI ID	DESCRIPTION OF GRI INDICATOR	Page	Reported
<b>ECONOMIC PERFORMANCE INDICATORS</b>				
IP	EC1	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	27, 28	✓
IP	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	89	✓
IP	EC3	Coverage of the organization's defined benefit plan obligations	36	✓
IP	EC4	Significant financial assistance received from government	28	✓
IP	EC5	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation	36	✓
IP	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation	46	✓
IP	EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation	38	✓
IP	EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	29	✓
IA	EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts	93	✓
<b>ENVIRONMENTAL PERFORMANCE INDICATORS</b>				
IP	EN1	Materials used by weight or volume	71	✓
IP	EN2	Percentage of materials used that are recycled input materials	72	✓
IP	EN3	Direct energy consumption by primary energy source	74, 75	✓
IP	EN4	Indirect energy consumption by primary source	72, 73	✓
IA	EN5	Energy saved due to conservation and efficiency improvements	73	✓
IA	EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives	72, 73	✓
IA	EN7	Initiatives to reduce indirect energy consumption and reductions achieved	73	✓
IP	EN8	Total water withdrawal by source	74	✓
IA	EN9	Water sources significantly affected by withdrawal of water	75	✓
IA	EN10	Percentage and total volume of water recycled and reused	74, 75	
IP	EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	85, 86	✓
IP	EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	86	✓
IA	EN13	Habitats protected or restored	80, 86, 88	✓
IA	EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	80, 86	✓
IA	EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	81, 86	✓
IP	EN16	Total direct and indirect greenhouse gas emissions by weight	75, 76	✓
IP	EN17	Other relevant indirect greenhouse gas emissions by weight	75	✓
IA	EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	77	✓
IP	EN19	Emissions of ozone-depleting substances by weight	77	✓
IP	EN20	NO <sub>x</sub> , SO <sub>x</sub> , and other significant air emissions by type and weight	75	✓
IP	EN21	Total water discharge by quality and destination	75	✓
IP	EN22	Total weight of waste by type and disposal method	78	✓



Category	GRI ID	DESCRIPTION OF GRI INDICATOR	Page	Reported
IP	EN23	Total number and volume of significant spills	79	✓
IA	EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	78	✓
IA	EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff	81	✓
IP	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	71, 74, 80	✓
IP	EN27	Percentage of products sold and their packaging materials that are reclaimed by category	78	✓
IP	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	79	✓
IA	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	79	✓
IA	EN30	Total environmental protection expenditures and investments by type	70	✓
<b>SOCIAL PERFORMANCE INDICATORS</b>				
IP	LA1	Total workforce by employment type, employment contract, and region	33	✓
IP	LA2	Total number and rate of employee turnover by age group, gender, and region	33, 34	✓
IA	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations	34	✓
IP	LA4	Percentage of employees covered by collective bargaining agreements	36	✓
IP	LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	36	✓
IA	LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	38	✓
IP	LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region	39	✓
IP	LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases	40	✓
IA	LA9	Health and safety topics covered in formal agreements with trade unions	41	✓
IP	LA10	Average hours of training per year per employee by employee category	36	✓
IA	LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	37	✓
IA	LA12	Percentage of employees receiving regular performance and career development reviews	37	✓
IP	LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity	33	✓
IP	LA14	Ratio of basic salary of men to women by employee category	36	✓
IP	HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening	43	✓
IP	HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	44	✓
IA	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	41, 43	✓
IP	HR4	Total number of incidents of discrimination and actions taken	43	✓
IP	HR5	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights	43*	●

✓ Fully covered    ● Non-applicable

\* Freedom of association for workers is granted through collective bargaining agreements

Category	GRI ID	DESCRIPTION OF GRI INDICATOR	Page	Reported
IP	HR6	Operations identified as having significant risk for incidents of child labor; and measures taken to contribute to the elimination of child labor	44	✓
IP	HR7	Operations identified as having significant risk for incidents of forced or compulsory labor; and measures to contribute to the elimination of forced or compulsory labor	44	✓
IA	HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations	44	✓
IA	HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	44	✓
IP	SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting	56-60, 87, 93	✓
IP	SO2	Percentage and total number of business units analyzed for risks related to corruption	24	✓
IP	SO3	Percentage of employees trained in organization's anti-corruption policies and procedures	23, 24	✓
IP	SO4	Actions taken in response to incidents of corruption	23	✓
IP	SO5	Public policy positions and participation in public policy development and lobbying	24	✓
IA	SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country	24	✓
IA	SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	24	✓
IP	SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	24	✓
IP	PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures	46, 48, 50	✓
IA	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes	49	✓
IP	PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements	48, 51	✓
IA	PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes	51	✓
IA	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	51	✓
IP	PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship	51	✓
IA	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes	51, 52	✓
IA	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	52	✓
IP	PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	52	✓

Category	GRI ID	DESCRIPTION OF GRI INDICATOR	Page	Reported
<b>MINING AND METALS SECTOR SUPPLEMENT ICMM/GRI 2010</b>				
IP	MM1	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated	85	✓
IP	MM2	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place	82	✓
IP	MM3	Total amounts of overburden, rock, tailings, and sludges and their associated risks	79	✓
IP	MM4	Number of strikes and lock-outs exceeding one week's duration, by country	43	✓
IP	MM5	Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities	79	✓
IP	MM6	Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples	79	✓
IP	MM7	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes	79	✓
IP	MM8	Number (and percentage) of company operating sites where artisanal and small-scale mining (ASM) takes place on, or adjacent to, the site; the associated risks and the actions taken to manage and mitigate these risks	79	✓
IP	MM9	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	79	✓
IP	MM10	Number and percentage of operations with closure plans	71, 86	✓
IP	MM11	Programs and progress relating to materials stewardship	46	✓
<b>DISCLOSURE ON MANAGEMENT APPROACH FOR THE ECONOMIC, SOCIAL, AND ENVIRONMENTAL ASPECTS</b>			12-18	✓

**IP** GRI G3 Sustainability Reporting Guidelines Core indicator

**IA** GRI G3 Sustainability Reporting Guidelines additional indicator

**MC** GRI Mining and Metals Sector Supplement Core indicator

**MA** GRI Mining and Metals Sector Supplement Additional indicator



**We go beyond  
regulations...**



**to care for the  
environment**

## Glossary of terms and acronyms

### AQUIFER

Water-bearing porous rock or soil.

### BRINE

Solution of sodium chloride in water.

### BIODIVERSITY

Biodiversity includes various living organisms, genetic diversity, and habitat diversity, as well as the processes that create and maintain variation in the environment. Different species of plants, animals, fungi, and microbes interact with each other in diverse ecological processes that form the ecosystems. Biodiversity is important because the combination of different forms of life has made the earth a unique place that is habitable for human beings.

### CARBON COSTS

The virtual price of carbon is used to assess the increase or decrease in GHG emissions, as a result of a specific policy. In simple terms, this virtual price “sets a price” on damage due to climate change caused by each additional tonne of GHG emissions, expressed as equivalents of carbon dioxide (CO<sub>2</sub>e) to facilitate the comparison.

### CLOSURE PLAN

Plan that is required for mines to obtain an operating license. It includes the procedures for closing the site, with a schedule of the stages of remediation, the re-vegetation or stabilization of land program, and the proposal for monitoring, maintaining, and using the site after closing the mine.

### CO<sub>2</sub>e

Equivalents of carbon dioxide.

### CSR

Corporate Social Responsibility.

### CPVC

Chlorinated polyvinyl chloride

### DIRECT USE OF ENERGY

Consumption of primary energy sources, owned or controlled by Mexichem.

### ECO-EFFICIENCY

Level of efficiency associated with operating processes, expressed as a combination of economic and environmental performance. In general, eco-efficiency is expressed in terms of the monetary value of the product or service, divided by the monetary cost of its environmental impact.

### ENVIRONMENTAL AUDIT

Analysis of the operation of a company with respect to the contamination it generates and the associated risks, as well as its degree of compliance with environmental regulations. These audits specify the preventive and corrective measures necessary to protect the environment.

### EQUATOR PRINCIPLES FROM THE WORLD BANK

Constitutes the framework for financial entities for evaluating environmental and social risks associated with the financing of projects; they are evaluated in accordance with the following criteria:

- Category A
  - A.1** Significant impact on people (involuntary relocation, economic displacement, issues affecting indigenous populations).
  - A.2** Loss or degradation of habitat in preserved ecosystems.
  - A.3** Adverse impact on cultural heritage.
  - A.4** Various substantial impacts, in combination with the above.
- Category B
  - Projects which activities take place in natural habitats, with a specific use of land. Impacts are local, can be mitigated, and do not trigger any of the category “A” policies.
- Category C
  - Refinancing of projects, expansions with minimal or non-adverse environmental impact.

### FATAL ACCIDENTS

Accidents that result in the loss of human life.



### FOSSIL FUEL

Product of the decomposition, partial or complete, of prehistoric plants and animals, found as crude oil, coal, natural gas, or heavy oils that are created as a result of their exposure to intense heat and high pressure under the earth's crust for millions of years.

### G3

Global Reporting Initiative indicators (third generation), which compliance is the basis of this report.

### GREENHOUSE GASSES (GHG)

Gases located in the lower part of the atmosphere (the troposphere) which cause the greenhouse effect (increase in temperature). They include carbon dioxide, chlorofluorocarbons, ozone, methane, and nitrous oxides. These gases, released into the atmosphere through the burning of fossil fuels and through other means, are the primary cause of world climate change.

### GRI

Global Reporting Initiative, the most common methodology for presenting sustainability reports. It lists 79 indicators that serve as a guideline for companies when reporting on their economic, environmental and social performance. For this report, we used the third generation GRI Guide, known as "G3".

### HUMAN RIGHTS

Concept that affirms that human beings have universal rights or statuses, apart from jurisdiction or other distinct factors, such as ethnic group, nationality, or gender.

### ICMM

International Council on Mining and Metals.

### INCAPACITATING ACCIDENTS

Accidents that result in the loss of faculties or skills, which make it impossible for a person to perform his or her job for a period of at least one full work shift, subsequent to the date the accident occurred.

### INCIDENCE RATE

This is the number of incapacitating accidents within the number of man-hours worked in the period, multiplied by 200,000.

### INDIGENOUS GROUPS

Cultural groups and their descendants who have a historic relationship with a specific region. They share a cultural identity and, as minorities, can be vulnerable to current social and economic systems.

### INDIRECT ECONOMIC IMPACTS

As defined in the Economic Indicators Protocols of the GRI, these impacts are the result, often non-monetary, of direct economic impacts (transactions between the company and its stakeholders).

### INDIRECT USE OF ENERGY

Energy used by Mexichem, generated by sources owned and controlled by another company (e.g., electricity, heat or imported steam).

### INTEGRATED RESPONSIBILITY

Global, voluntary initiative from the chemical industry, which purpose is to have companies that are part of this program to, in their normal course of business, continually take action to improve safety, protect health, and be stewards of the environment in accordance with the principles of sustainable development.

### INTEREST GROUPS

Groups or people who can be positively or negatively impacted by the financial, environmental, health and safety, and social aspects of our operations, as well as those who have an interest in, or influence on, our activities. This term is also known as stakeholder communities.

### IPCC

Intergovernmental Panel on Climate Change.

### ISO 14001

International standard governing environmental management systems.

#### IUCN

International Union for the Conservation of Nature.

#### LOST DAYS

Days of work which are lost due to work accidents, as consequence of the resulting inability to perform that work.

#### MAN-HOURS WORKED

This is the sum of man-hours worked at each location of the group.

#### MATERIALITY

Information that can affect the company and could influence the perceptions and decisions of stakeholders seeking to make decisions and evaluate Mexichem's commitment to sustainability.

#### MSDS

Material Safety Data Sheet.

#### NGO

Non-governmental organization, a non-profit organization financed mainly by private contributions, which operates outside institutionalized government or political structures. In general, the agendas of NGOs include social, political, and environmental issues.

#### OHSAS 18001

System for evaluating occupational health and safety that governs management systems in those areas.

#### OSHA

Occupational Safety and Health Administration. Guides issued by this agency to evaluate occupational health and safety.

#### PARTICIPATION

The process of contact, dialogue, and interaction that guarantees that all interested parties have adequate information and participate in the decisions that affect their future.

#### PVC

Polyvinyl chloride.

#### RESTORATION

Re-establishment of the original properties of an ecosystem or habitat with regard to its community structure and fulfillment of its natural functions.

#### SEVERITY RATE

The number of days of disability granted within the number of man-hours worked in the period, multiplied by 200,000.

#### SLAG

Waste from the metal smelting and refining processes, comprised mainly of iron, silica, and calcium.

#### SOCIO-EFFICIENCY

Describes the relationship between the added value of the company and its social impact.

#### SUSTAINABILITY

Focus of an economy used for the development of our society, which exists in equilibrium with the natural resources and ecosystems of the planet. Sustainability balances environmental quality and economic growth; it does not confront them. It is a concept that recognizes that economic activities, environmental conditions, and social development, need to be integrated for humanity in the long run.

#### SUSTAINABLE DEVELOPMENT

Development that meets current needs without compromising the ability of future generations to meet their own needs, as defined by the World Commission on Environment and Development (Brundtland Commission) in 1987.

#### TAILINGS

Waste from the concentration process or smelting of low content minerals.

#### TAILINGS DAM

Shallow depression where tailings are confined. Its main function is to provide time for the heavy metals to settle, or for the cyanide (used to dissolve gold and silver from the mineral) to be destroyed before the water is discharged into a local source.

### UNIVERSAL DECLARATION OF HUMAN RIGHTS

Declaration adopted by the United Nations General Assembly that describes the rights guaranteed for all persons.

### UNITED NATIONS GLOBAL COMPACT

It is an initiative for ethical commitment, encouraging entities in all countries to adopt its Ten Principles of Conduct and Action as an integral part of their strategy and their operations with regard to human rights, labor, the environment, and the fight against corruption, as an integral part of their strategy and their operations.

### VCM

Vinyl chloride monomer.

### WASTEWATER

Liquids of varying composition discharged after use by various sources: municipal, industrial, commercial, agricultural, livestock, or any other type, whether public or private, which has degraded its original quality.

### WASTEWATER TREATMENT

Procedure by which water contaminated with organic and mineral matter is purified. It is divided into three phases:

- **Primary treatment**  
First step in the treatment of wastewater, in which all floating and sedimentable solids are eliminated by means of screens, mechanical extractors, and other devices.
- **Secondary treatment**  
During this phase, the content of organic materials is eliminated through microbial processes.
- **Tertiary treatment**  
In this stage of the process, nutrients (phosphorus and nitrogen) are removed along with a high percentage of suspended and dissolved solids.

### WBCSD

World Business Council for Sustainable Development.

### WRI

World Resources Institute.



**Definition of units  
and conversion factors**

T	Tonnes (1,000 kg)
Kt	Kilotons (1,000 t)
Mg	Miligram (0.001 g)
Ug	Microgram (0.000001 g)
Ppm	Parts per million
L	Liter
m <sup>3</sup>	Cubic meters
GJ	Giga-joules (10 <sup>9</sup> joules)
TJ	Tera-joules (10 <sup>12</sup> joules)
kWh	Kilowatts/hr (0.0036 GJ)
GWh	Gigawatts/hr (106kWh)

**GHG conversion factors  
by fuel type**

	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	GJ
Diesel	2,730 g/L	0.12 g/L	0,1 g/L	38.68 GJ/m <sup>3</sup>
Gasoline	2,360 g/L	0.19 g/L	0.39 g/L	34.66 GJ/m <sup>3</sup>
Natural Gas	1,880 g/m <sup>3</sup>	0.048 g/m <sup>3</sup>	0.02 g/m <sup>3</sup>	0.03723 GJ/m <sup>3</sup>
Propane	1,530 g/L	0.03 g/L	0	25.53 GJ/m <sup>3</sup>
Heavy Fuel Oil	3,090 g/L	0.12 g/L	0.013 g/L	38.68 GJ/m <sup>3</sup>
Coal	2,110 g/Kg	0.015 g/Kg	0.05 g/Kg	30.5 GJ/t
Coke	2,480 g/Kg	0.12 g/Kg	0	28.83 GJ/t

Source: Canada Mining Association



Affiliations 4.13	
	Chlorine Institute
	NSF Product Certification Organization for Food, Water and Consumer Goods
	Mexican Center for Philanthropy
	Green Building Council Brazil
	WBCSD Brazilian Business Council for Sustainable Development
	Mexican Mining Chamber
	 PROVINILO Commission for vinyl promotion
	 CIPRES Plastics Industry Commission on Responsibility and Sustainable Development
	 <i>Responsabilidad Integral</i> (Responsible Care)
	 SETIQ Transportation Emergencies System for the Chemical Industry
	 ECBE Emergency Squad Training School

 MEXCHEM	Mexican Stock Exchange Ticker Symbol MEXCHEM
	Institute for Research and Testing of Materials
	Acoplásticos (Colombia)
	Colombian Council of Sustainable Construction
	Colombian Institute of Technical Standards, ICONTEC
	Instituto do PVC (Brazil)
	The Vinyl Institute (USA)
	Initiative of the Chemical Industry Initiative to improve Health, Safety, and Environmental Development
	United Nations Global Compact
	Mexican Association of Investors Relations
	Mexican Stockbrokers' Association
	Petrochemical and Chemical Association of Latin America



## Verification of GRI level



### Statement GRI Application Level Check

GRI hereby states that **Mexichem S.A.B de C.V.** has presented its report "We go further... to get closer." (2011) to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3 Guidelines.

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 27 April 2012

A handwritten signature in blue ink, appearing to read "Nelmara Arbex", is written over a faint background watermark of the GRI logo.

Nelmara Arbex  
Deputy Chief Executive  
Global Reporting Initiative



The "+" has been added to this Application Level because Mexichem S.A.B de C.V. has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

*The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. [www.globalreporting.org](http://www.globalreporting.org)*

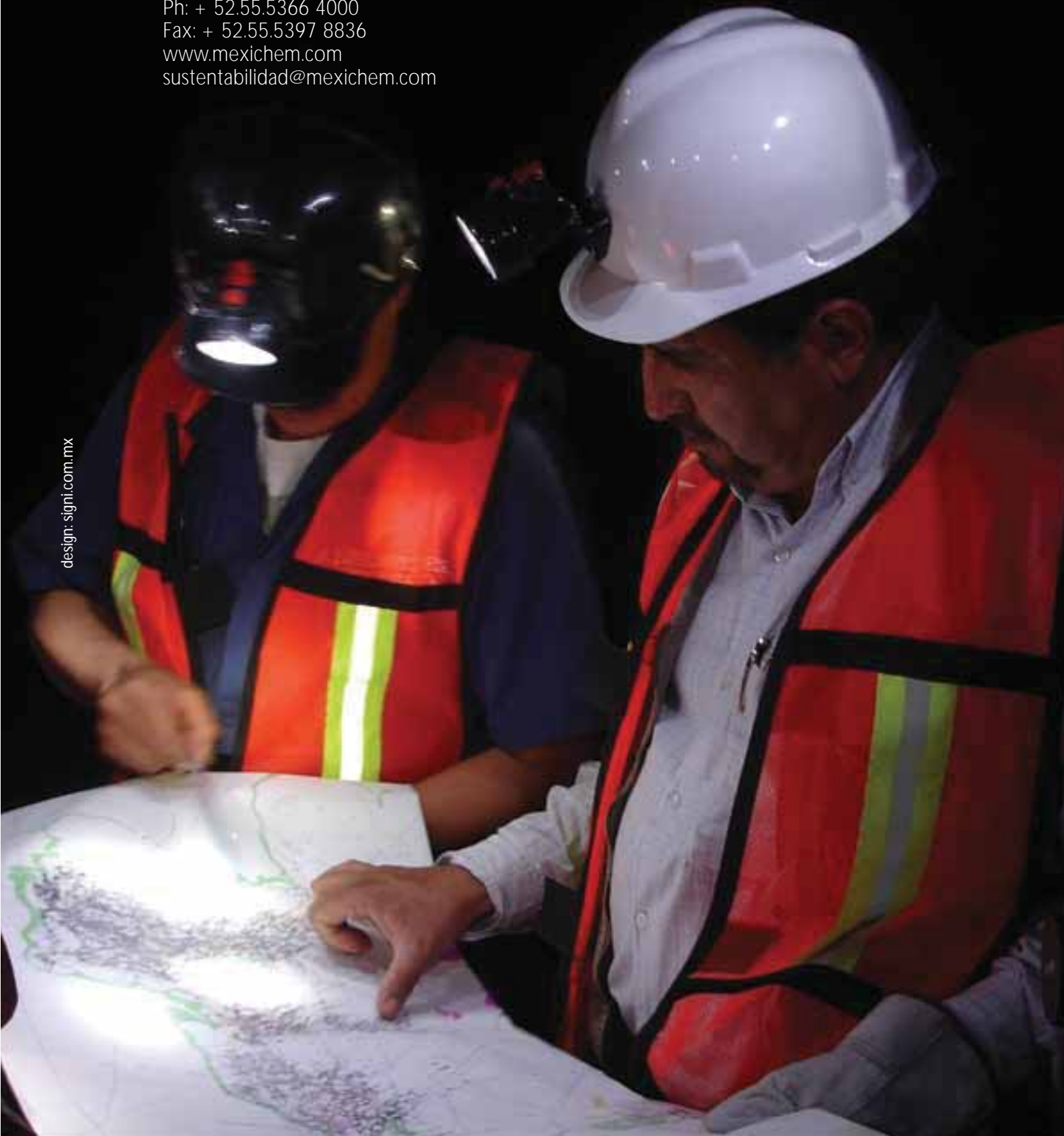
*Disclaimer: Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 10 April 2012. GRI explicitly excludes the statement being applied to any later changes to such material.*

### Contact Information

If you would like to obtain additional information about this report or Mexichem, you may do so by contacting Enrique Ortega Prieto, Director of Strategic Planning and Investor Relations. [3.4](#)

Mexichem, S.A.B. de C.V.  
Río San Javier #10 Fraccionamiento  
Viveros del Río  
Tlalnepantla, Estado de México  
54060 México

Ph: + 52.55.5366 4000  
Fax: + 52.55.5397 8836  
[www.mexichem.com](http://www.mexichem.com)  
[sustentabilidad@mexichem.com](mailto:sustentabilidad@mexichem.com)





[www.mexichem.com](http://www.mexichem.com)