

talent

FOR SUSTAINABLE DEVELOPMENT



SUSTAINABILITY REPORT 2012

Mexichem.



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HF tanks in Matamoros, México

1. company profile

AND STRATEGY

1.1 About Mexichem

Mexichem is a leader in the global chemical and petrochemical industry, with more than 50 years of experience in the industry and listed for more than 30 years on the Mexican Stock Exchange (Bolsa Mexicana de Valores). It has operations throughout the Americas, Europe, and Asia. Its products are marketed in over 50 countries, generating total sales of more than USD4.81 billion annually. Mexichem has more than 17,700 employees and actively contributes to progress in all the countries in which it operates. 2.1.

Mexichem products have a positive impact on quality of life and social progress. They include essential goods and services used in fields such as construction and civil infrastructure, water conduction and basic

sanitation, power generation and supply, transportation, communications, environmental protection, and health care, among many others.

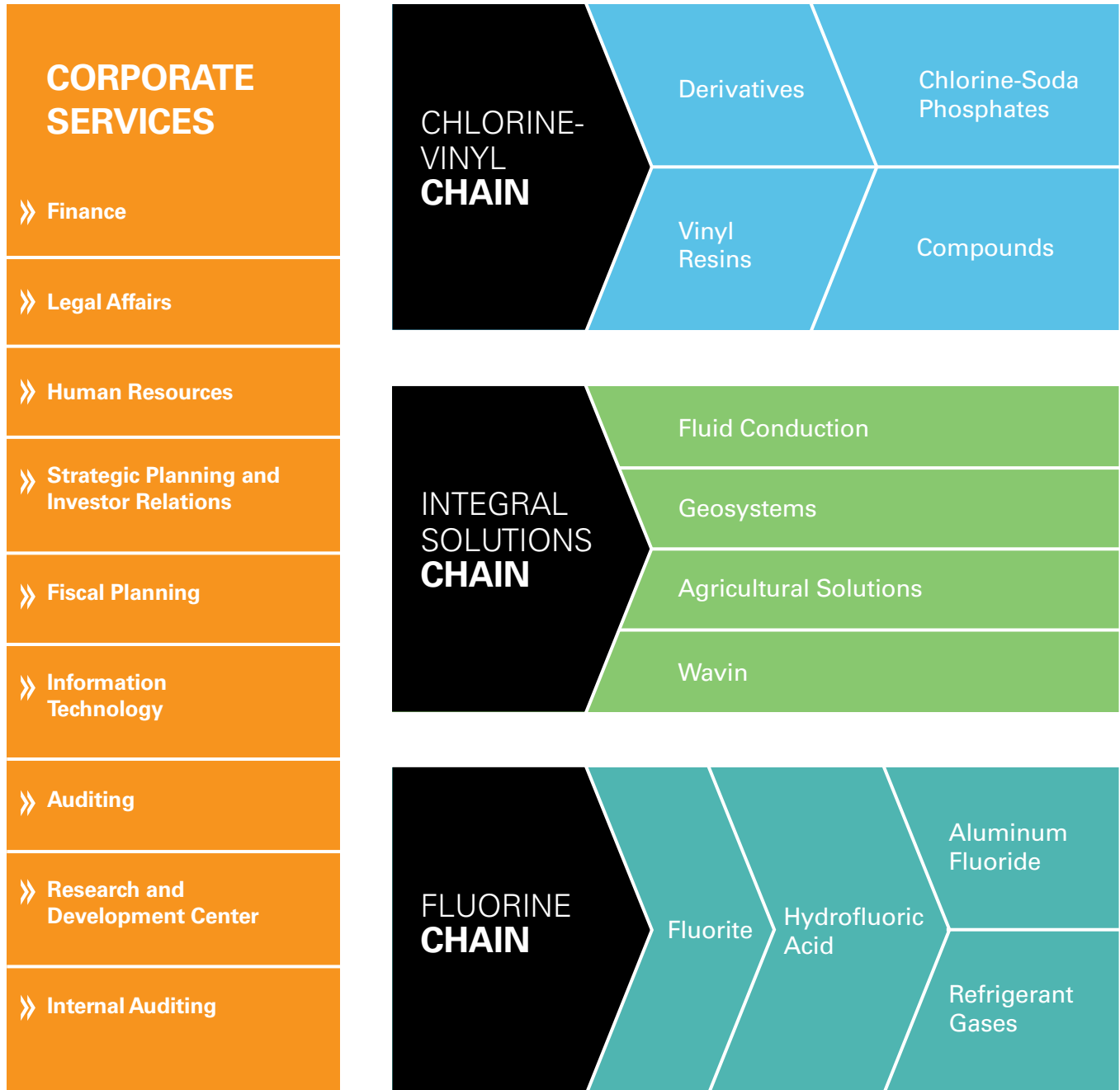
The company's mission is to create value from its basic raw materials (salt and fluorite) through vertical integration of its business in three product chains, in order to make the most of synergies and achieve superior business results within a framework of corporate responsibility oriented towards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

The corporate headquarters is located at:

**Río San Javier #10 Fraccionamiento
Viveros del Río
Tlalnepantla, Estado de México
54060 México 2.4.**

1.2 Operational Structure 2.3.

Mexichem is built around three product chains: Chlorine-Vinyl, Fluorine, and Integral Solutions.



3 CHAINS

89 OPERATING SITES (Plants)

74 ISO-9001 CERTIFIED (Quality Management)

Chlorine-Vinyl Chain. The base of the Chlorine-Vinyl Chain is salt (sodium chloride), which we process to obtain chlorine and soda. We add value to chlorine by transforming it into the vinyl chloride monomer (VCM)—chlorine plus ethylene, derived from petroleum—which we polymerize to produce polyvinyl chloride (PVC) resin and compounds. Other processes include the production of plasticizers used as additives in flexible PVC products.

Integral Solutions Chain. Mexichem is a global leader in the production and marketing of piping systems, plastic accessories, and connectors for fluid conduction, mainly water. Our piping systems also have applications in electrical and gas. We have technical solutions with geosynthetics such as nonwoven geotextiles, woven geotextiles, geodrains, geomembranes, and geomesh.

Fluorine Chain. At the base of this chain is calcium fluoride, better known as fluorite, a nonmetallic mineral whose principal function is to act as a flux. Mexichem owns the largest fluorite mine in the world. Fluorite in its natural state is called metallurgical-grade. Acid-grade fluorite is used in the production of hydrofluoric acid. Hydrofluoric acid is used primarily for manufacturing refrigerant gases and aluminum fluoride.

53

ISO-14001 CERTIFIED
(Environmental management)

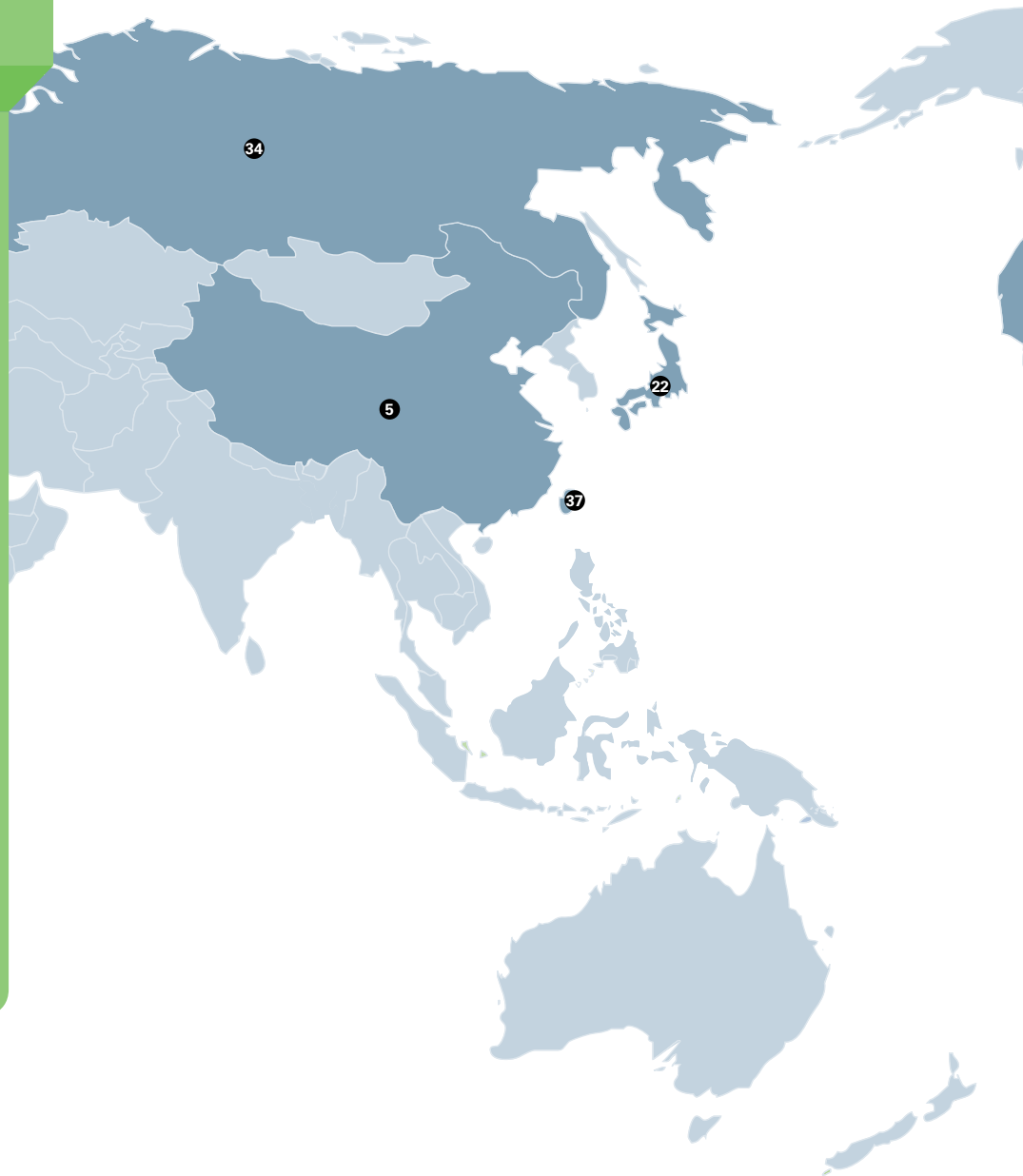
20

OHSAS 18001 CERTIFIED
(Safety)

1.3 Business operations sites

Mexichem has operations in 39 countries in North and South America, Europe, and Asia 2.5.

In the global market, our Integral Solutions Chain serves markets in the Americas, Europe, and Asia. The Chlorine-Vinyl Chain serves all the countries in the Americas and several more in Asia. The Fluorine Chain serves markets in the Americas, Europe, and Asia. 2.7



 ARGENTINA 2

 COSTA RICA 7

 EL SALVADOR 11

 GUATEMALA 17

 BELGIUM 3

 CROATIA 8

 ESTONIA 14

 HONDURAS 18

 BRAZIL 4

 CZECH REPUBLIC 32

 FINLAND 15

 HUNGARY 19

 CHINA 5

 DENMARK 9

 FRANCE 16

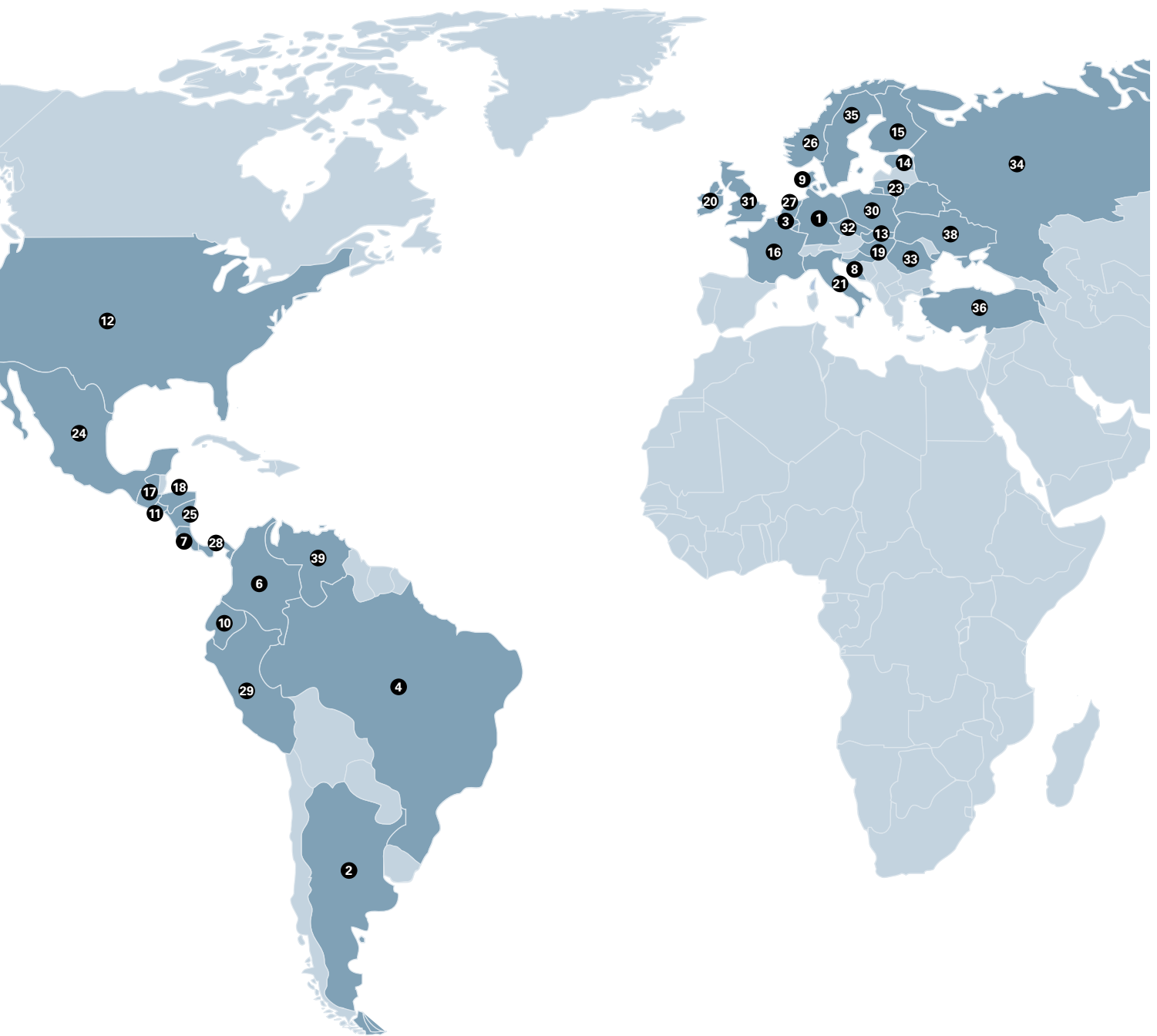
 IRELAND 20

 COLOMBIA 6

 ECUADOR 10

 GERMANY 1

 ITALY 21



 **JAPAN** 22

 **NORWAY** 26

 **RUSSIA** 34

 **UKRAINE** 38

 **LITHUANIA** 23

 **PANAMA** 28

 **SLOVAKIA** 13

 **UNITED KINGDOM** 31

 **MEXICO** 24

 **PERU** 29

 **SWEDEN** 35

 **UNITED STATES** 12

 **NETHERLANDS** 27

 **POLAND** 30

 **TAIWAN** 37

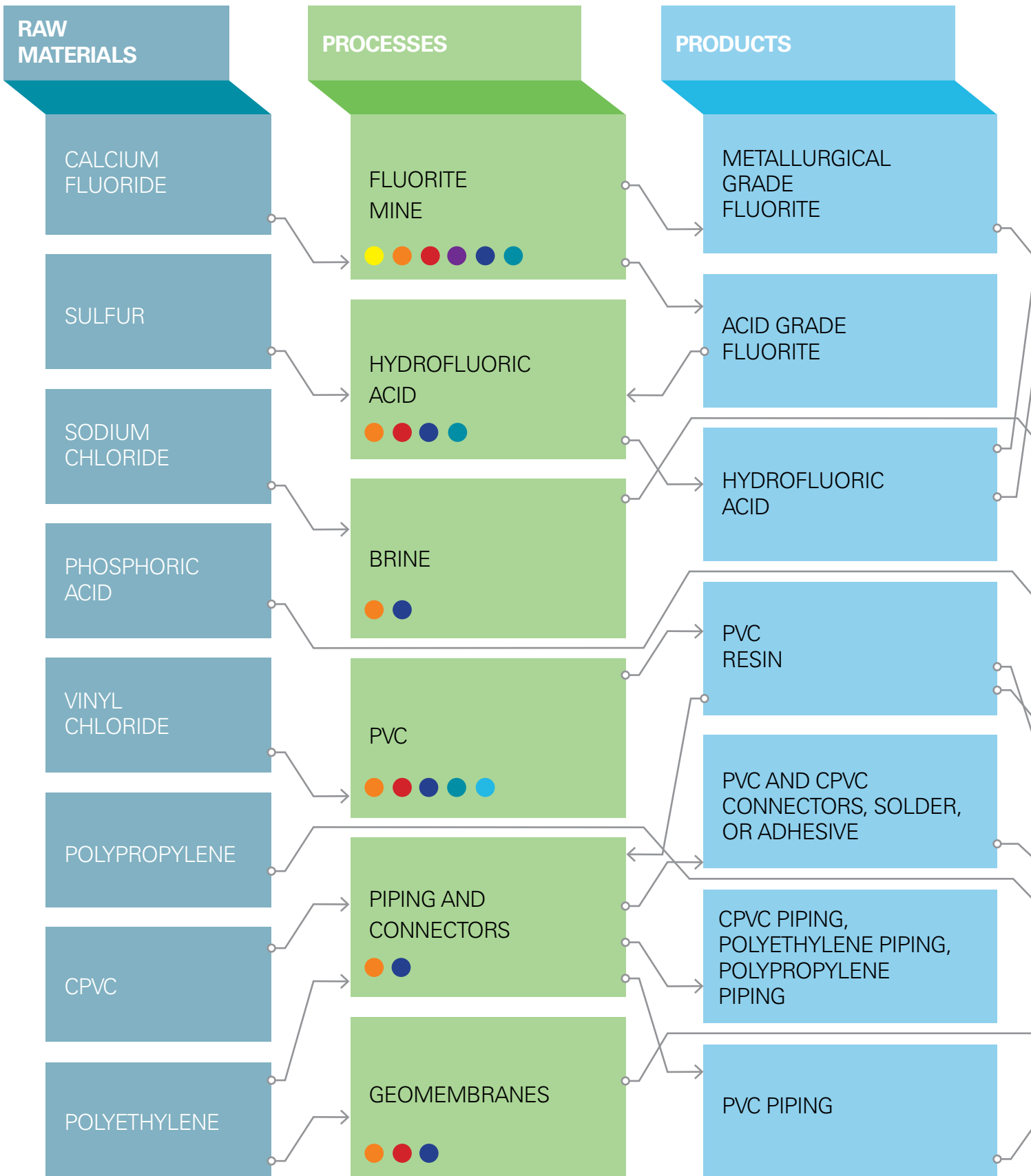
 **VENEZUELA** 39

 **NICARAGUA** 25

 **ROMANIA** 33

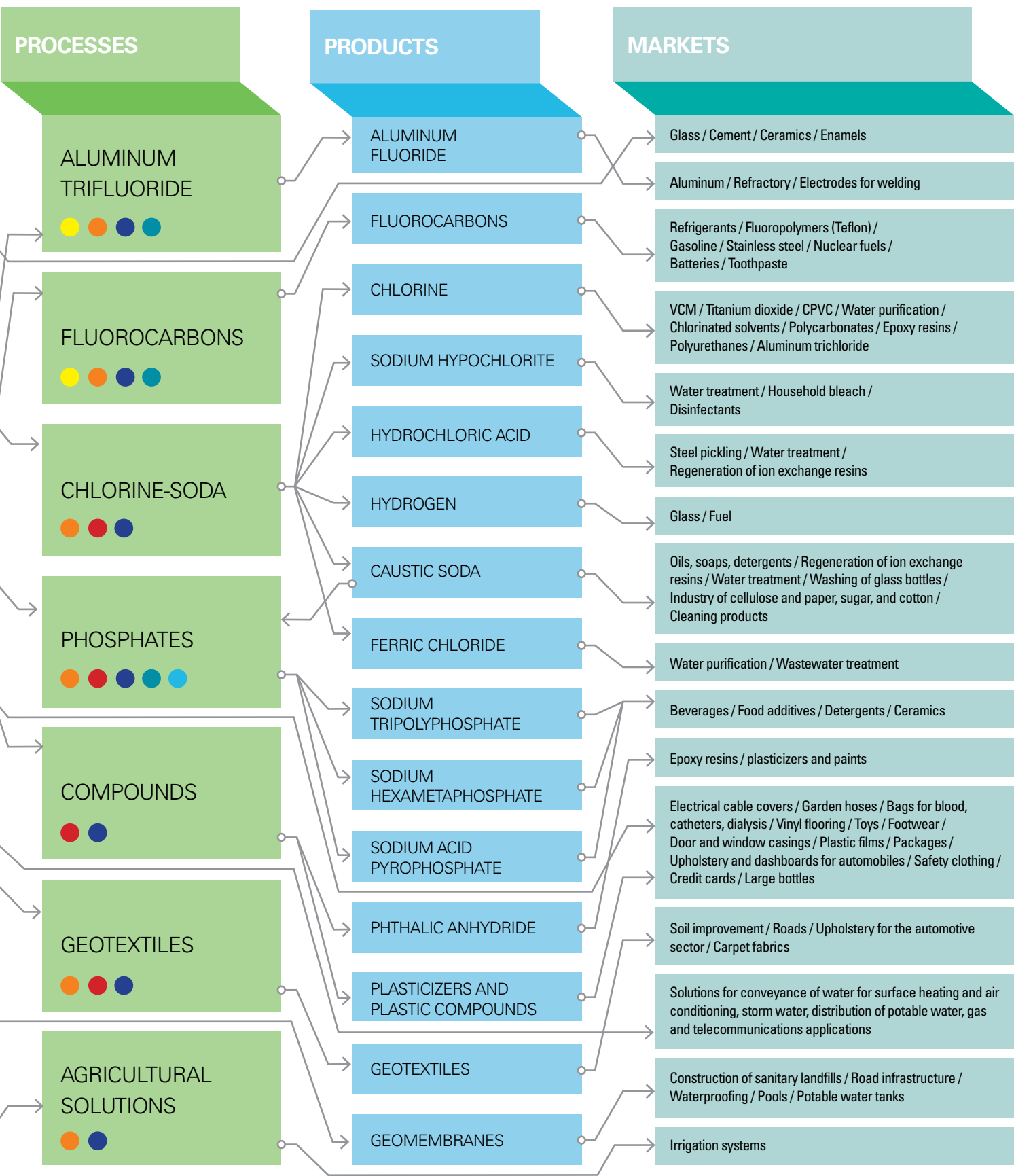
 **TURKEY** 36

1.4 Diagram of processes, products, and uses 1.2, 2.3.



PRINCIPAL IMPACTS

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



ACRONYMS

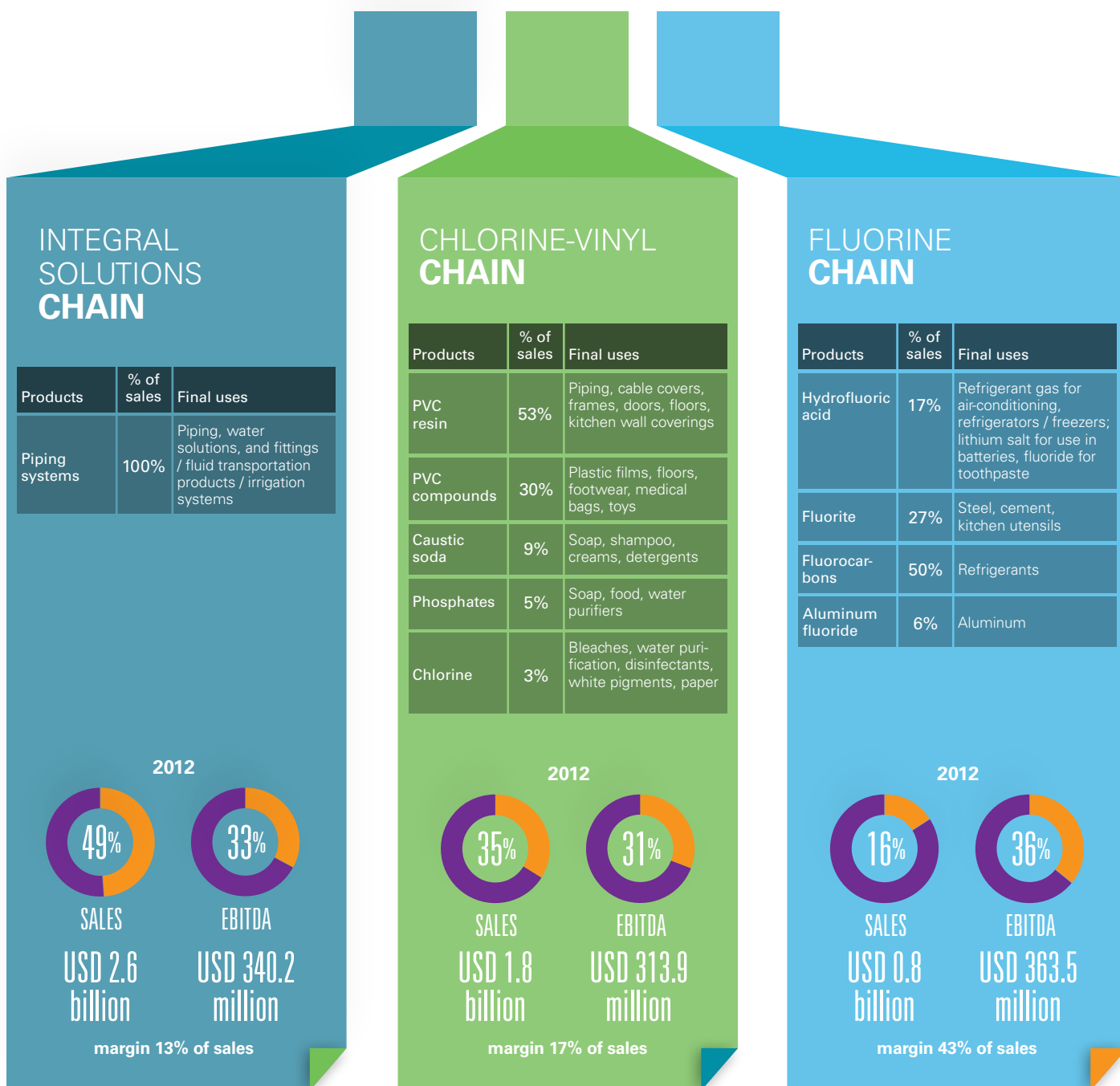
CPVC - Chlorinated polyvinyl chloride
 PVC - Polyvinyl chloride

Brine - Solution of sodium chloride in water
 VCM - Vinyl chloride monomer

Fluorite - Calcium fluoride

25 TOTAL PRODUCTS

1.5 Products, brands, and markets 2.2, 2.7. Mexichem provides 25 products 2.8.



Our brands are Mexichem, Amanco, Plastigama, Pavco, Bidim, Plastubos, Celta, AlphaGary, Zephex, Klea, and Wavin. 2.2



1.6 Mexichem's Culture and Strategy

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 4.8.

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 the quality of people's 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 industry.

COMMITMENT

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

RESPONSIBILITY

We act responsibly and fairly in the communities where we do business. We contribute in the best way possible towards 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 company that treats employees appropriately and with respect.

1.7 Management Strategy 1.1

Mexichem's corporate strategy is focused on the triple bottom line, to create economic, environmental, and social value, based on the following guidelines:

Sustained, healthy growth We take the expectations of our key stakeholders into consideration, identifying the challenges and opportunities presented by our social and environmental responsibility. Our process of strategic planning and follow-up of results relies on electronic information tools for sustainability indicators. With these tools, we combine all the information from our Sustainable Development results, which reflect the most relevant indicators of Mexichem's performance.

Our next step will be to develop a sustainability management system to define strategic objectives and align them with operating goals. The management system will measure and evaluate triple-bottom-line performance, substantiated by examples and case studies of successes. The management system will be supported by a Sustainability Committee consisting of a multidisciplinary group representatives of Mexichem.

Operational excellence The most important consideration when carrying out our activities is employee safety, and our goal is to prevent all accidents and achieve zero fatalities. Mexichem has launched a plan to develop a safety management system that will avoid operational risks and personnel injuries, as well as to increased damage control. This plan integrates activities and responsibilities on safety in one system. The fundamentals for the system are outlined in the Modern Safety Management training course and the International Safety Rating System from Det Norske Veritas.

Development of human capital Mexichem offers its employees fair and equitable remuneration, corresponding with their job descriptions, responsibilities, and the labor

market. The benefits provided are higher than those required by current local labor laws in the countries in which we operate.

Mexichem has a human rights policy and offers training workshops on an ongoing basis to raise awareness at all levels of the organization. In managing suppliers, we give preference to local suppliers when purchasing materials and services needed for plant operations, while looking at criteria such as quality, service, and competitive price range. Our strategy is to have allies in our supply chain.

Technological development and innovation 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.

Social responsibility Commitment to the communities in which we have a presence allows us to capitalize on opportunities to create value



Employees in Tlalnepantla, Mexico



Maintenance employee in Coatzacoalcos, Mexico

for the company and the community. Due to the diversity of social conditions in the communities where we operate, the interaction will take on a variety of forms. We continue to strive to make our focus less and less on working through philanthropic organizations and more oriented toward the strategic building of economic, environmental, and social value together with our stakeholders. The main areas where we take action for social progress are: education, building of skills and abilities, water supply and purification, housing solutions, child-care, and commitment to the environment.

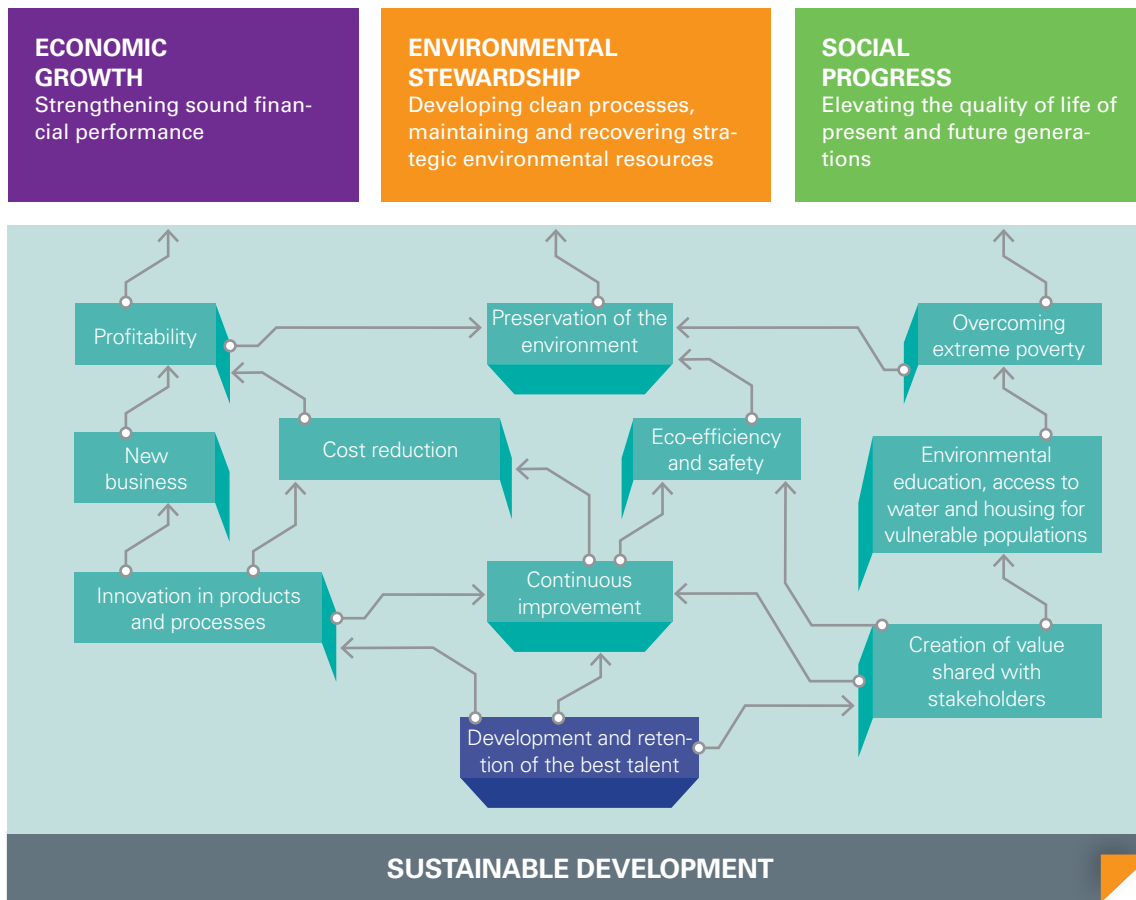
Environmental responsibility Mexichem is committed to environmental protection. We go beyond the legal requirements in our care of our environment. We are continuously working to efficiently manage our use of resources, based on the principles of reducing, reusing, and industrial recycling.

In the area of climate change, we are developing an evaluation of risks and opportunities arising from this phenomenon. We have been recording greenhouse gas (GHG) inventories at our operations since 2007, recording direct and indirect emissions related to the consumption of electrical energy and fossil fuels.

Our commitment to reduce GHG emissions focuses on energy savings and efficiency in our operations, which involves everyone in the organization, from offices to industrial plants. We will continue to develop various plans to increase eco-efficiency in our processes, technology upgrades, and evaluation of alternative and renewable energy.

Our commitment to the environment also includes: optimizing our use of water and energy, reducing industrial waste, controlling atmospheric emissions, designing plans to steward biodiversity, soil, surface water, and

Sustainability model – triple bottom line



aquifers, as well as conducting research and development to design and produce safer and more environmentally friendly products.

In the economic dimension, our successful strategy for creating wealth and prosperity shall continue to rely on the following:

- Implementing our plans
- Adding value to our raw materials
- Continuing vertical integration
- Diversifying our markets geographically
- Discipline in the reduction of costs and investments
- Relationship with stakeholders

1.8 Impacts, risks, and opportunities: strategic goals

We identified the key impacts, risks, and opportunities to improve our performance and make sustainability a successful strategy based on the triple bottom line. The risks identified are strategic, operational, and financial. We include the metrics of capitalizing on opportunities linked to these risks by re-designing goals.

In our first Sustainability Report, published in 2009, we set forth our goals for the years 2010–2013, focused on strengthening our triple-bottom-line management. The goals were reviewed and updated. [1.2](#)

STRATEGIC GOALS 2013-2018

Performance target:	DESCRIPTION
Environmental – Energy	Reduce electrical energy consumption coming from fossil fuels by at least 5% by 2018 (baseline year 2009).
Environmental – Waste	Reduce waste sent to landfills by at least 20% by 2018 (baseline year 2011).
Environmental – Emissions	Reduce greenhouse gas (GHG) emissions by at least 5% by 2018 (baseline year 2009).
Environmental – Biodiversity	The impact of operations on biodiversity should be environmentally neutral by 2025 (baseline year 2012). Operations initiated or acquired since 2012 shall have a period of 10 years to achieve environmental neutrality.
Environment – Water	Reuse at least 70% of water consumed, by 2018 (baseline year 2011).
Environment – Climate change	Maintain strategy to adapt to and mitigate the effects of climate change. Evaluate the impact of climate change at 100% of Mexichem's operations by the year 2016.
Social – Labor practices	Establish a system for training in sustainable development and continuous improvement. Reach at least half of Mexichem employees under this plan by 2016. Achieve zero fatalities. Reduce incapacitating accidents by at least 50% by 2016 (baseline year 2012).
Social – Stakeholders	Establish and encourage two-way channels of communication between Mexichem and its stakeholders. Reach 100% of the primary stakeholders by 2016 and initiate at least one constructive dialogue with each one of these groups.
Social – Environmental Product stewardship	Maintain zero claims of impact on the health and safety of our clients or on ecosystems caused by safety failures in product handling.
Social – Stakeholders	Develop social projects in the communities in which Mexichem operates with shared values. Each one of the chains must have at least one new social project by 2016.
Social – Ethics and the fight against corruption	Train all Mexichem employees and get their commitment to comply with the company's code of ethics and anticorruption policy by the year 2016.
Social – Human rights	Have all our contractors agree to comply with Mexichem's human rights policy by 2016.



2. message

FROM THE CEO TO STAKEHOLDERS

1.1, 3.1, 3.2, 3.3

Dear Readers:

We are pleased to share with you our 2012 Sustainability Report, *Talent for Sustainable Development*. In it, we show you what our company is doing to operate with the highest ethical standards, provide safe and healthy work environments for our employees, and respect the environment, human rights, and the cultural values of the countries in which we have a presence.

We understand that sustainability is, above all, a risk management approach to economic, environmental, and social problem solving. Nonetheless, we are convinced that, to achieve our objective of being a sustainable operation, it is essential to harness the talent of our employees. Thus, we generate the creativity, dedication, and effort needed for us to be able to offer safe, competitive, high-quality products and ensure the sustained and sustainable success of our company in the future.

The year 2012 was undoubtedly key in our preparation for achieving the success we seek. A few examples:

- We implemented a sustainability management system that will allow us to optimize the triple bottom line, standardizing best practices by harnessing the talents of our employees on a global level.
- We issued new long-term debt for the purpose of strengthening our balance sheet and reducing the risks that short-term debt brings. On the other hand, we increased the company's capital to continue growing toward our 20-20-20 vision.
- We also continued to reduce our impact on the environment, and we took on the task of exploring new technologies and strategies to maintain our status as an environmentally responsible company.
- We promoted social projects to improve quality of life and opportunities for progress in vulnerable local communities.

This report is dedicated to all our stakeholders, to demonstrate how we deliver triple-bottom-line performance without compromising our principles of integrity and transparency. At Mexichem, we strive to meet your expectations, and we believe that together

Significant events in 2012

SOCIAL:

- We reported **zero fatal accidents** and initiated a plan to develop a **safety management system** to monitor operating risks, losses, and injuries to our employees.
- We maintained our recognition as a **member of the Sustainability and Social Responsibility Index (ISRS) of the Mexican Stock Exchange**.
- **We initiated** a plan to develop a **sustainability management system to manage sustainability issues and optimize our triple bottom line**.
- We are developing and promoting **21 projects supporting communities**, with a focus on drinking water and sanitation, decent housing, education, health, and environmental protection.

ENVIRONMENTAL:

We are reducing our environmental footprint by:

- Reusing **54% of extracted water** in our operations;
- **A 68% reduction** over 2011 in **waste management**;
- **Upgrading technology** in industrial processes to **save energy**, and **investing in the production of a new generation of refrigerants** that are more environmentally responsible.
- We are initiating work plans to develop **alternative energy sources** and options for the **cogeneration of energy**.
- We are making progress in our strategy for **protecting biodiversity**, with **17 programs** to identify negative impacts and endangered species at sites where we have operations.

ECONOMIC:

- We achieved **cumulative sales of MXN68.398 billion**, which amounts to **growth of 34%** over 2011.
- The **EBITDA** was **MXN13.269 billion**, which represents an **increase of 29%** over 2011.
- We refinanced **debt at a longer term and lower financing cost**. Given the response from the investing public, the issue was more than 14 times oversubscribed, and the company garnered **the award for the Best International Bond Transaction** awarded by LatinFinance.
- **We welcomed a new company, Wavin**, which, in combination with our Amanco Brand, made us **the global leader in plastic piping systems and integral solutions**.

we will generate value and opportunities for social progress, respect for the environment, and growth for our company.

We thank our Board of Directors, our stockholders, employees, clients, suppliers, and members of our communities for their interest, participation, and support. This is what has allowed us to continue to be successful and to grow in the right way. Now we must make the most of the growth platform that we are building and work together to keep moving forward on the road ahead.



Antonio Carrillo Rule
Chief Executive Officer

3. about the

2012 SUSTAINABILITY REPORT

This report is completed in accordance with the Global Reporting Initiative (GRI) G3 Sustainability Reporting Guidelines, and it adheres to the AA 1000 AccountAbility standards (2008) and to the principles of relevance or materiality, inclusivity, and responsiveness to our principal stakeholders.

The selection of information presented in the report and its adherence to GRI indicators was completed by the Corporate Sustainability Coordinator, based on an analysis of the facts and data reported by all operating sites. 3.5 The information takes into account the principles related to materiality, participation of stakeholders, relevance to the context of sustainability of production chains, completeness, balance, comparability, accuracy, timeliness, reliability, and transparency. 3.5

We used the G3 Guidelines from the GRI, using the technical protocols and the 2010 Mining and Metals Sector Supplement. 3.5 The information provided in this report covers operations from January 1 to December 31, 2012. 3.1 Historical data from the five previous years (2007 to 2011) are included for comparison purposes and to help identify trends in certain indicators. Our last report covered 2011. 3.2, 3.3 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 was compiled with transparency and integrity from operations carried out at the operation

sites (plants) in our three principal business chains: Integral Solutions, Chlorine-Vinyl, and Fluorine, as well as their corporate support services. The information does not include data from sales offices. 3.6, 3.7 All data compiled is documented electronically, and the technical support used for mathematical calculations is mentioned in the numerical indicators. 3.9

Deloitte (Galaz, Yamazaki, Ruiz Urquiza, S.C.) conducted a third-party review of the 2012 Sustainability Report to guarantee the transparency and reliability of the information presented. 3.13 Mexichem has self-reported a GRI Level of "A +" for this report, based on the GRI Level Application Table.



PVC resin warehouse, Mexico



Sulfur extraction piping in Jaltipan, Mexico

4. **corporate** GOVERNANCE

4.1 Governance system

Mexichem S.A.B. de C.V. is a public company listed with variable capital, whose corporate bylaws are governed by the General Corporations Law of Mexico and by the Securities Market Law. 2.1, 2.6 No government holds shares in the company.

Our corporate governance principles provide us with a framework for managing 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. 4.1



Employee in Tlalnepantla, Mexico

Because Mexichem shares are listed on the Mexican Stock Exchange (BMV), we are governed by the Securities Market Law. We also adhere to the principles established in the Code of Best Corporate Practices endorsed by the Council for Business Policy Coordination.

4.2 Corporate governance structure 4.1

4.2.1 Board of Directors

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 The chairman of the Board of Directors is not a company executive. 4.2

Mexichem's corporate bylaws establish 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 general management policies and monitors our

triple-bottom-line performance through the Executive Committee, with support from both the Audit and the Corporate Practices Committees. We also 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 created 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 bylaws for the Board of Directors, the Audit Committee and/or the Corporate Practices Committee, or for the stockholders meeting.

This committee is the highest executive governing body and is responsible for guiding the organization's strategy in corporate, environmental, and economic matters. The Executive Committee uses consultants and independent

experts to evaluate the 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](#)

Corporate Practices Committee

The Corporate Practices Committee's duties are to evaluate the performance of relevant executive officers, review transactions between related parties, review compensation of the aforementioned officers, evaluate any exemption granted to the directors or relevant executive officers that allow them to have advantages in business opportunities, and perform those duties as required by the Securities Market Law. According to our bylaws, all members of the Audit and Corporate Practices Committees, including each chairman, shall be independent directors. [4.5](#), [4.6](#)

Communications with the highest corporate governance body take place through operational meetings 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](#)

4.3 Code of Ethics [4.8](#)

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 is communicated to all employees as soon as they are hired and can be referenced online at any time by all personnel. Other corporate documents are also communicated to employees when they join the company, and employees must sign these to ensure their agreement and compliance. Statements within the company, behavior of executive officers and employees, as well as work performance are measured based on the Code of Ethics and other policies and protocols.

Structure of the Board of Directors and Executive Committee [4.1](#)

Honorary Chairman of the Board of Directors for Life

Antonio del Valle Ruiz

Chairman of the Board

Juan Pablo del Valle Perochena

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 *

Juan Beckmann Vidal *

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 *

Chief Executive Officer

Antonio Carrillo Rule

Chief Financial Officer

Miguel Ruiz Tapia

Of the alternate directors on the board of directors, 30% are women and 70% are men. None are members of a minority group. [LA13](#)

* Independent directors

Employee evaluations include a focus on compliance with triple-bottom-line practices. [4.8](#)

In 2012, a corruption incident was reported within the company. It was handled according to internal procedures and our Code of Ethics. [SO4](#) All personnel have been informed of Mexichem's anticorruption policy and procedures. [SO2](#), [SO3](#)

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. [SO5](#) In accordance with these guidelines, we do not make contributions in kind or in cash to political parties or related institutions, nor do we attempt to influence our employees to participate or to back a particular political party. [SO6](#)

Mexichem does not need to conduct studies regarding specific practices that are monopolistic or against free competition because the majority of our products are generic commodities, and we compete in the international markets, in a global environment. Proposals regarding the acquisition of companies to be brought into Mexichem are communicated in a timely manner to the appropriate agency regulating free

competition in the countries of origin of these companies. We comply with any conditions that may be imposed to allow the acquisition, and the latter is carried out with full disclosure to the public through communications with stakeholders. [SO7](#) During 2012, none of our subsidiaries were subject to 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 OHSAS 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 Responsible Care®, a voluntary program that operates under the supervision of the chemical industry associations in Mexico, Colombia, the United States, and the United Kingdom.

At Mexichem, we have a documented comprehensive safety, environmental, and quality policy that is communicated to and understood by the entire organization.

More information on this matter can be found at: http://www.mexichem.com/English/politica_seguridad.html



PVC pipe process, Colombia



Employees, Mexico

5. **economic**

DIMENSION

5.1 Creation of wealth and prosperity

Cumulative sales at the close of the year reached MXN63.398 billion, 34% higher than in 2011. Operating income plus depreciation and amortization (EBITDA) at the close of the year was MXN13.269 billion, up 29% over the previous year. EC1, 2.8

Mexichem	2012
Net sales	63.398
Cost of sales	42.932
EBITDA	13.269
Total assets	100.094
Total debt	57.649
Stockholders' equity	42.445
Market capitalization	151.431
Figures in billions of Mexican pesos	
Employees	17,792

Mexichem EC1, EC8

Millions of Mexican pesos

2012

Direct economic value created (EVC)

a) Income (net sales) 63,398

Economic value distributed (EVD)

b) Operating costs (cost of sales) 42,932

c) Wages and benefits to employees 9,324

e) Payments to governments (taxes) 2,013

f) Investments in the community 34

Economic value retained (EVR)

EBITDA (calculated as economic value generated minus economic value distributed) 13,269

5.2 Economic performance EC1

The increase in sales is due to increased volumes and prices for fluorite, hydrofluoric acid, aluminum fluoride, piping and connectors, and soda, as well as to the acquisition of Fluorita de México and Wavin. As for EBITDA, the increase is due to the aforementioned better prices and to the increased volume achieved through investments in machinery and equipment achieved in the various Mexichem plants for the manufacture of different types of products, as well as to the incorporation of Fluorita de México and Wavin.

The government of Mexico has a policy of offering financial incentives for research and development. In 2012, we received an incentive grant for research and technological development in the amount of MXN22.37 million (USD1.72 million) from CONACYT, the National Council on Science and Technology. EC4

The most significant economic event for the organization in 2012 was the following:

February 8, 2012

Mexichem S.A.B. de C.V. ("Mexichem") and Wavin N.V. ("Wavin") jointly announced that

they reached an agreement with regard to the public cash offer by Mexichem for all shares issued by Wavin and in circulation. 2.9

5.3 Markets 2.7

We are able to maintain a leadership position in the Americas and Europe, as well as in Asia, through the geographic diversification of our operations, operating efficiencies oriented to producing different products to the specific needs of each market, and our ability to take advantage of our logistics network and production facilities.

5.4 Social Investments EC8

In 2012, Mexichem made investments of USD2,645,157 in public infrastructure and services.

Mexico

- Construction of new access road to plant
- Change to LED-type lights on the perimeter
- Paving of Salitrera-Zaragoza road, 4 kilometers
- Supplying drinking water to the Salitrera community
- Handling of waste from the community
- Medical care for the community, including medication
- Minor support work for hospital, Telesecundaria (a distance-learning secondary-education program), kindergarten, teachers for the primary school and the community

Brazil

- Training of labor for civil construction (includes payment of fee for group and sending samples, uniforms, and classroom materials)
- Hydros Project: awareness of wise water use

Argentina

- Hydros Project: awareness of wise water use
- Strengthening of skills. EC8

SALES BY GEOGRAPHIC AREA - DESTINATION 2012



SALES
34%
HIGHER THAN
IN 2011

EBITDA
29%
HIGHER THAN
IN 2011



Students in a Mexichem-supported school in San Luis Potosí, Mexico

6. **social**

DIMENSION

6.1 Relationship with stakeholders

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

A discussion group composed of citizens representing stakeholder groups pointed out matters of interest that Mexichem should include in the sustainability report and which impact six core themes:

Three internal: Human Rights, Environmental, and Social Performance

Three external: Product Responsibility, Labor Practices, and Economic Performance

The results of the focus group study on stakeholder expectations are:

1) Environmental performance:

- Emissions, effluents
- Biodiversity

2) Social performance:

- Local communities
- Industrial safety 3.5, 4.17

6.1.2. Communication with stakeholders 4.17.

Investors: Mexichem is committed to providing its shareholders with reasonable, sustained profitability for their investment. We communicate with our investors through:

- Annual financial report
- Quarterly reports
- Meetings designed by brokers for institutional investors
- Presentations for potential investors in North America, South America, and Europe to announce the issuer's recent projects and news
- Through our web page:
<http://www.mexichem.com/English/index.html>
- Telephone conferences

- Scheduled formal meetings (one on one)
- Relevant notices through the Mexican Stock Exchange (BMV)

Employees: Communications between company management and employees to relate direction, awareness of expectations, monitoring performance, conflict resolution, and general information is carried out through formal channels such as meetings, interactive news sources (Mexichem website and intranet), union dialogues, joint committees, available information systems, and others.

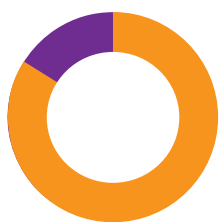
One of the formal ways we engage in dialogue with our employees is through a confidential, anonymous survey called Taking the Pulse, which is taken by all of our employees—unionized and nonunionized—to evaluate employee satisfaction. Other forms of dialogue are messages via the Mexinet intranet, regular mail and e-mail, bulletin boards, and face-to-face meetings with immediate supervisors and directors.

Communities: We make every effort to maintain active channels of communication with each stakeholder to understand



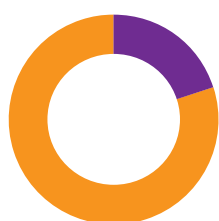
Boy in Mexichem plant in Jáltipan, Mexico

HUMAN CAPITAL



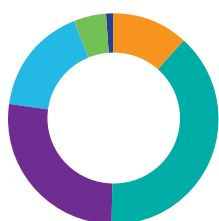
MALE 84%
FEMALE 16%

ANNUAL TURNOVER



MALE 80%
FEMALE 20%

AGE RANGE



UP TO 24 12%
25-35 39%
35-45 27%
45-55 17%
55-65 5%
> 65 0%

their perceptions and expectations, to identify opportunities, and to 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 leaders, and international authorities.

Clients and suppliers: Mexichem works with suppliers who share the highest levels of quality, integrity, and honesty, seeking mutual benefit that adds efficiency to the vertical integration of our chains. We have a supplier evaluation system that allows us to identify common areas of opportunity.

6.2 Management of human capital

6.2.1. Labor practices and indicators

As of December 31, 2012, Mexichem had a total workforce of 17,792 employees throughout the various countries in which we operate. Out of this total, male employees represented 84% of our human capital, while female employees comprised 16%. [LA2](#)

Number of employees	17,792
Number of directors	69
Number of managers	407
Number of supervisors	1,043
Other levels	16,273
Number of women	2,865
Number of men	14,927
Individual employment contract	6,445
Collective bargaining agreement	11,347

Chain	Employees
Chlorine-Vinyl Chain	2,274
Corporate	227
Fluorine Chain	1,649
Integral Solutions Chain	13,642
Total	17,792

These numbers do not include subcontractors, those who work independently, or part-time workers. [LA1](#)



Employees in flourite mine in San Luis Potosí, Mexico

Percentage of turnover at Mexichem [LA2](#)

Turnover, individual contract	4.84%
Turnover (directors)	3.29%
Turnover (managers / superintendents)	0.98%
Turnover (supervisors / coordinators)	0.77%
Turnover (not in position of authority)	1.47%
Turnover, collective bargaining agreement	2.30%
Total	5.52%

Annual turnover in percentages: 20% are female employees, and 80% are male. [LA2](#)



Employee in Coatzacoalcos, Mexico

6.2.2 Wages and benefits

Mexichem pays equitably and fairly in accordance with labor market standards and the dedication of its workers, taking into account the job description and responsibilities assigned to each employee, the skills required to perform the job, and the conditions involved in the work. Full-time employees receive more benefits than part-time or temporary employees, which affects 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.

For its nonunionized employees, Mexichem backs a voluntary pension plan to encourage savings for retirement, so that the employees are motivated to establish a fund that will become their retirement pension. EC3

Labor legislation in each country establishes the local minimum wage. Mexichem has operations in various countries, various industries, and various regions and economic zones. The average standard starting salary is three times the local minimum salary where significant operations take place EC5.

Base salary ratio, men to women, by professional category LA14

Category	Women	Men
Assistants/Coordinators	0.94	1.06
Supervisors	0.99	1.01
Operational Leaders/ Superintendents	0.96	1.04
Managers	0.98	1.02
Directors	1.10	0.90

Average = 1

0
FATAL
ACCIDENTS

1.3
INCIDENT
RATE

47
SEVERITY
RATE

6.2.3 Union affiliation

Of our employees, 64% (11,347 people) 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

6.2.4 Training and development

In 2012, employees undertook 382,284 hours of training: 67% for employees under a collective-bargaining agreement and 33% for employees with an individual contract. The main areas of training and education were: Human Rights, Sustainability, Health and Safety, Orientation for new employees, Corporate Culture and Code of Ethics, English Language, Process Technologies, Information Technology, and Process Administration. The total amount invested in training activities during 2012 was USD1,096,721. LA10 The experience and training acquired by our employees allows those who are in the final stage of their professional career or who have been part of a reorganization to provide valuable services to other companies and to society through other activities. LA11

In order to encourage the development of its human capital, the company conducts an annual performance review of all nonunionized personnel. Each employee receives feedback from an immediate supervisor and together they agree on work goals that align with both

the company's strategy and the individual's personal development and improvement objectives. These evaluations are the basis of career planning for executives and personnel with high potential and leadership. LA12

6.2.5 Origin of employees

At the end of December 2012, Mexichem had 59 directors working at corporate and at the Integral Solutions, Chlorine-Vinyl, and Fluorine Chains. Ninety-three percent of them are natives of the country in which they work as executives at Mexichem, making decisions on important operations of the organization, or as operations managers—a significant fact considering that Mexichem is a global company with a presence in many countries. EC7

6.3. Health and safety of workers

For Mexichem, the most important factor in carrying out our activities is employee safety, with the goal of preventing accidents to achieve zero fatalities. In order to achieve this goal, all of our employees are represented by safety and occupational health committees. LA6

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 our entire management team is to ensure that we operate accident-free. Each and every company employee is charged with the ongoing responsibility to achieve this unceasing goal.

Indicators of Operational Safety LA7

Indicator / year	2007	2008	2009	2010	2011	2012
Incapacitating accidents	179	185	165	131	180	253
Days lost	10,079	3,253	3,251	2,153	4,697	8,777
Fatal accidents	2	1	0	2	1	0
Man-hours worked	19,208,894	17,708,791	19,451,891	19,558,905	22,979,677	36,782,516
Incidence rate *	1.8	2.1	1.6	1.3	1.5	1.3
Severity rate **	105.0	36.7	33.4	22.0	40.8	47.0

* Incidence rate = (number of incapacitating accidents / man-hours worked) x 200,000

** Severity rate = (number of days lost / man-hours worked) x 200,000



Employee in Sumaré, Brazil

There were no fatal accidents in 2012 LA7

The number of incapacitating accidents was 40% higher than the previous year, and severity increased by 15%. Nevertheless, man-hours worked also increased by 60% over 2011.

Mexichem initiated a plan to put in place a safety management system that would be effective in handling risks and controlling losses. The work plan looks at integrating all the operating sites into a single system over a period of three years. The basis of the system will be delineated by the requirements and principles found in Modern Safety Management and by the Det Norske Veritas International Safety Rating System.

Health education and prevention programs LA8

To aid in preventing illness, we provided within our medical programs informational programs for our employees aimed at preventing the risk of serious illnesses most common to the various geographic areas in which our plants are located. For example, we offered talks and campaigns on high blood pressure, diabetes, obesity, smoking, influenza, stress, alcoholism, cancer, and AIDS, with a focus on preventive health measures. These practices have been linked to productivity improvements.

Labor agreements with unions include health and safety clauses for Mexichem employees.

LA9 The preventive safety programs include:

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

17,792
EMPLOYEES

382,284
TRAINING
HOURS

11,347
PEOPLE UNDER
A COLLECTIVE-
BARGAINING
AGREEMENT

6.4 Promotion and protection of human rights

6.4.1 Mexichem's Human Rights Policy

Mexichem's Human Rights Policy is endorsed by the CEO, and we have presented workshops to raise awareness at all levels of the organization. In 2012, 15,657 hours were dedicated to training employees on Mexichem's human rights policies and procedures. **HR3**

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

6.4.2 Implementation of the policy

a) Human rights in significant investment agreements

Fluorita de México and Wavin N.V. were acquired in 2012, and both investment agreements were reviewed for any human rights issues. **HR1**

b) Human rights in the company

Currently all Mexichem employees take an introductory course about our Code of Ethics and our policies and procedures related to human rights. In 2012, 14,669 hours of employee training were dedicated to these subjects. **HR3** In 2012, no incidents of discrimination were recorded. **HR4**



Hydros - Water Fair in Costa Rica

Workers' freedom of association is granted through collective-bargaining agreements; there is no risk that this right will be affected. **HR5** During the year, there were no strikes or work stoppages. **MM4**

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 in this regard. 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**

There is no risk of forced or nonconsensual labor in any of our operations, and therefore no actions were required. The Safety and Hygiene Committees, composed in equal proportions of company representatives and worker representatives, complete an evaluation and conduct monthly plant inspections. In addition, all personnel can notify upper management of any noncompliance or abuse through the complaint box, either anonymously or openly, or electronically or through physical mailboxes. Our hiring agreements fully support the International Human Rights Convention and the standards of the International Labor Organization. **HR7**

Our security personnel receive training in human rights, reliability tests, and Mexichem values. This training helps prevent reputation risks and litigation from inappropriate actions or approaches not tolerated by our company. In 2012, 345 security guards (security personnel) were trained on human rights policies and procedures **HR8**.

c) Analysis of human rights demonstrated by suppliers

Mexichem has established a method to monitor means of communication, which includes a review of suppliers in cases related to human rights. Given that Mexichem is structured in vertically integrated product chains, starting with the raw materials that are taken from nature, the company's subsidiaries become intercompany clients and suppliers: The finished product of one plant becomes 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 the support for awareness of human rights in relation to our business. Human resources executives from each unit participated in these workshops and then became instructors within our own company. We estimate that 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](#)

d) 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 the year covered by this report, there were no incidents related to violations of the rights of original communities at sites where we operate. [HR9](#)

Sources:

Comisión Nacional de Derechos Humanos (National Human Rights Commission)

<http://www.cndh.org.mx>

Business and Human Rights Resource Centre

<http://www.business-humanrights.org/Home>

Media monitoring through Factivia

Universal Declaration of Human Rights

<https://www.un.org/en/documents/udhr/>

Fundamental Principles on Occupational Health and Safety: http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_093550.pdf



Employees in Podestá, Argentina

6.5 Management of suppliers

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

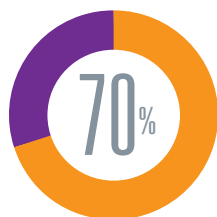
In 2012, 70% of orders in the Chlorine-Vinyl Chain were given to local suppliers, and generally 90% of labor hired for services is from local contractors. We define local suppliers as those who are geographically near our facilities or within the same state. In the Fluorine and Integral Solutions Chains, the proportion spent on local supplier purchases is about 68%. The suppliers selected are, in any case, those who demonstrate commitment to environmental and social responsibility. [EC6](#)

6.6. Product Stewardship

All of our main products are subject to evaluation in order to identify improvement opportunities and reduce health and environmental risks. This evaluation focuses on all stages of a product's life cycle: supply, storage, distribution, use, and final disposal. [PR1](#)

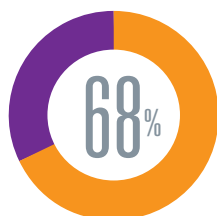
In the Fluorine Chain, the supervision of fluorite includes the handling, transportation, and use of the mineral as a metallurgical-grade flux and as acid grade for fluorite. In the Chlorine-Vinyl Chain, the supervision of salt includes the handling, transportation, and use of the

ORDERS IN THE CHLORINE-VINYL CHAIN



ASSIGNED TO LOCAL SUPPLIERS

ORDERS IN THE FLUORINE AND INTEGRAL SOLUTIONS CHAINS



ASSIGNED TO LOCAL SUPPLIERS

chlorine-soda in salt. 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** Third parties are responsible for the transportation of products and other goods such as some raw materials and secondary materials used by Mexichem to carry out its operations and for transporting the labor force.

6.6.1 Compliance with regulations or voluntary codes

From 2008 to the present, 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 complied with the preregistration of more than 55 substances and finalized the registration of eight that were classified as priority substances under this regulation. In this process, because it possessed the greatest information available on the risks of the substances to be

registered, Mexichem Fluor in the UK led registration consortiums for various fluorine compounds, and it helped fill in the gaps in the investigation and knowledge of risks to document the registration files. In 2012, Mexichem made progress in incorporating the information to complete the registration of a second group of substances that have a deadline of 2013.

The content of the labeling and the Mexichem Material Safety Data Sheet is adjusted to the specifications of the laws and regulations of each country, including information relative to the chemical composition of the products; a description of the product's physical properties; recommendations for handling, storage, and safe use; and proper disposal practices. **PR3**

The Chemical Safety Reports on the substances already registered, which include exposure scenarios and complete information for REACH files, can be consulted by visiting the website of the European Chemicals Agency (ECHA) at: <http://echa.europa.eu/web/guest/regulations/reach>.



Employee with PVC resin in Tlalnepantla, Mexico

Mexichem has risk information that is available to all interested groups (“Answers to Frequent Questions on PVC”), which collates the findings of the most recent evaluations of the life cycle of its primary applications, including risks to health and the environment. Visit: http://www.mexichem.com.co/CloroVinilo/ResinasColombia/english/pvc_sustentabilidad.html

During 2012, there were no recorded incidents of failure to comply 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, environmentally sound products

Some of the highlights in this area are described below for each of our chains:

Chlorine-Vinyl Chain: Evaluation of alternative plasticizers for PVC to incorporate them in the company’s portfolio.

Fluorine Chain: Mexichem Fluor supports global regulation to limit and reduce the potential growth of hydrofluorocarbon (HFC) emissions. Responding to the need to reduce its

environmental impact, Mexichem Fluor is developing a new generation of refrigerants that maintain the excellent properties of HFCs, but with less potential of contributing to climate change, although they are not yet available commercially.

Integral Solutions Chain: In 2012, Mexichem acquired the multinational Wavin, whose technology made it possible to broaden the portfolio of Mexichem products and introduce to Latin America bi-axially oriented piping and “trenchless” solutions, as well as other technologies that contribute to the conservation of resources and the reduction of environmental impacts. Several years ago, Mexichem replaced the lead-based stabilizers used in its manufacture of pipes with more environmentally sound alternatives, such as organic calcium and zinc salts and tin stearates. PR1

6.6.3 Product information

Mexichem provides personal technical assistance to its clients or users when they require help or additional information regarding product safety and handling, including information that supports its use in critical applications, such as products that must be in



Employees in Tlalnepantla, Mexico

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 regulations related to product information or labeling during the period covered by this report. **PR4**

6.6.4 Customer health, safety, and satisfaction

We conduct periodic surveys to measure customer satisfaction. The survey includes a rating for the client's overall level of satisfaction with Mexichem.

Chlorine-Vinyl Chain, customer surveys are given to evaluate the following elements:

1. Product characteristics
2. Service
 - a) Communication
 - b) Logistics
 - c) Technical support
 - d) Response to complaints

Fluorine Chain, customer satisfaction surveys cover the following items:

1. Product characteristics
 - a) Service
 - b) On-time delivery
 - c) Quantity

Integral Solutions Chain, surveys evaluate the following aspects:

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

The survey results show customer satisfaction ranging between 88% and 98%, versus a maximum of 100%. **PR5**



Mexichem Wavin, plants in Buk, Poland.

6.6.5 Marketing communications

All information, including marketing communications, published by the company must comply with the policies documented by Mexichem's legal department and the Department of Investor Relations. Regulation specialists from each country in which we operate review the local communications to ensure that they comply with local laws and regulations, in accordance with Mexichem's policies and Code of Ethics.

Some of the products that Mexichem manufactures have been the subject of controversies with certain stakeholders because of the supposed or real risks to health or to 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 in their various applications. **PR6**

No incident of failure to comply with regulations regarding communications, marketing, publicity, and sponsorship was identified during the reporting period. **PR7**

6.6.6 Client privacy

During 2012, there were no incidents of failure to comply with regulations related to sales communications, nor were there claims from

clients related to privacy or leaks of personal information. [PR7](#), [PR8](#) Therefore, we were not fined for any noncompliance in the provision or use of our products. [PR9](#)

6.7 Contribution to social progress

6.7.1 Responsibility to our communities

We established the following guidelines in our relationship management strategy to strengthen our interactions with the community and support the continuity of projects undertaken:

- We respond to priority needs in areas related to the company's interests.
- We establish partnerships with public and private organizations to increase the scope of our efforts.
- We guarantee tangible results by defining and monitoring the indicators on every project. [4.16](#)

The program called Redoubling Efforts for My Community, allows each Mexichem plant to evaluate its impact on the community in which it operates and to identify that community's



Children in school in Delta, Argentina

needs. Mexichem cooperates with local and regional governments to develop projects to meet those needs and handle the impacts. The local or regional governments contribute 50% of the resources, while the other 50% is contributed by Mexichem and its employees. The core program areas include Housing, Safety, Health, Education, Ecology, Culture, and Outdoor Recreational Activities.

6.7.2 Achievements driven by the Kaluz Foundation

Redoubling Efforts for My Community is the guiding principle of the programs that the Kaluz Foundation supports. The foundation identifies and supports social responsibility initiatives that benefit communities through mechanisms such as the Kaluz Foundation Grant, which encourages projects that are undertaken jointly by companies in the group, their managers and employees, the corresponding governments, and the community itself.

In its third year, the 2011–2012 Kaluz Foundation Grant supported projects that have benefited more than 37,000 people directly, and more than one hundred thousand indirectly.

Mexichem competed to obtain grants for 21 projects that are either in progress or completed. These projects were led by employees from various operating units in different countries. The participating projects are described in the table on pages 36 to 39.

6.8 Awards, certifications, and distinctions [2.10](#)

Certification on ISO 9001 • ISO 14001 • OHSAS 18001 • Clean Industry • Baxter • Kosher • NSF • SARI • IS=22000 • Socially Responsible Company • Safety Self management • Icontec • INEN quality seal • INASSA seal • Environmental Leadership for Competitiveness • Family Responsible Company • Recognition by the Chlorine Institute on Safety • Environmental Voluntary Compliance • Work Safety and Health level 3

THIRD EDITION
KALUZ FOUNDATION
GRANT

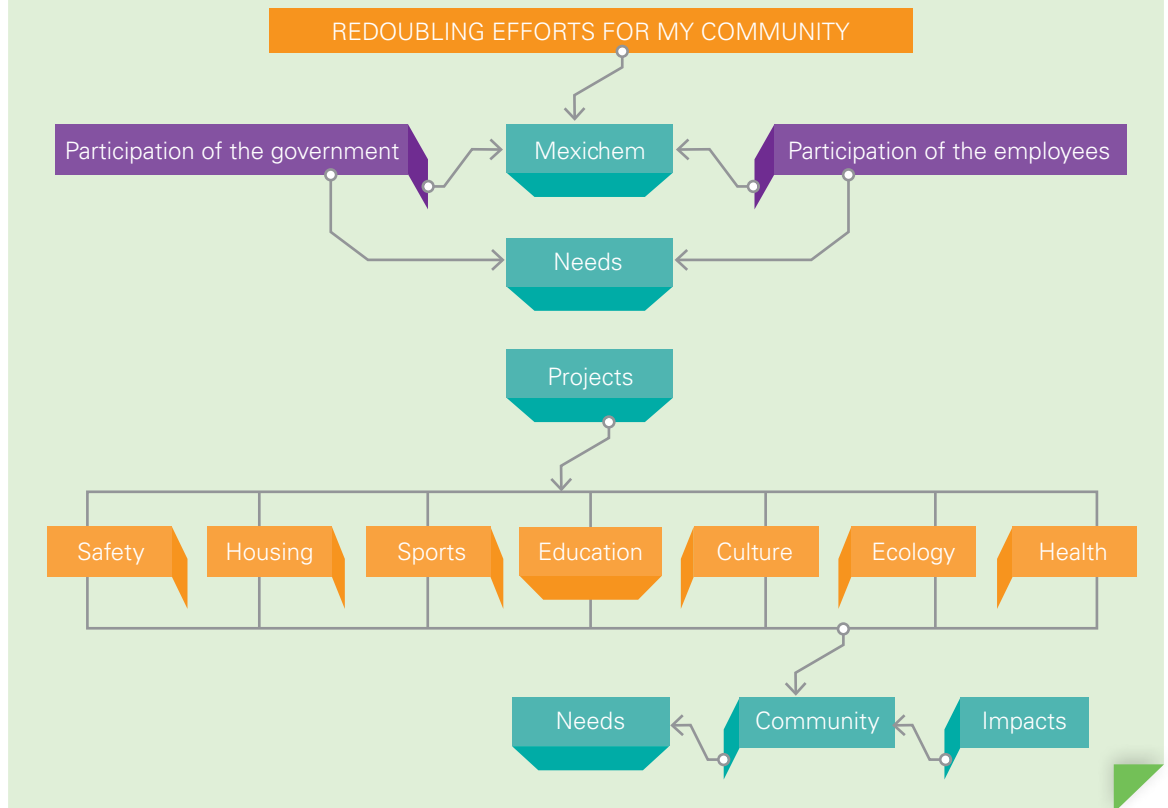
37

THOUSAND PEOPLE
DIRECTLY BENEFITED
AND ONE HUNDRED
THOUSAND INDIRECTLY

21

PROJECTS
PRESENTED BY
MEXICHEM TO OBTAIN
THE GRANT

Operations Scheme



- Union Pacific (Pinnacle Award) in product safety
- Festival Caribe Campaña Vilcabamba: Silver Award and Bronze Award
- Effie Silver Award and Cannes Lions
- Sustainable Colombia 2012 Gold Seal Environmental Responsibility Award
- Commercial Merit Award, Elite Category of the District Environmental Excellence Award - PREAD 2012
- Kaluz 2012 Award in the Home category
- Excellence Award in Work related risks
- Clean Industry Certification granted by the Environmental Authorities of Mexico

ISO 9001: Quality Management System

ISO 14001: Environmental Management Systems

ISO 22000: Food Safety Management System

OHSAS 18001: Occupational Health and Safety Management Systems

NSF: NSF International is an independent and objective nonprofit organization, dedicated to product testing and certification, and it establishes global performance standards for a wide variety of products for home and industry

SARI: Responsible Care® Management System, granted by the National Association of the Chemical Industry in Mexico

ICONTEC: Colombian Institute of Technical Standards

NORVEN: Certifier of final product quality in Venezuela

SEDAPAL: Potable Water and Sewage Services of Lima

Summary of social initiatives for community development and participation, 2012 4.12, 4.16, SO1.

Project name: **Improvement of children's education**

Chain / plant: **Integral Solutions / Pavco de Occidente, Guachené, Colombia**

Benefited community: **Guachené, Cauca**



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 designing an infrastructure to create learning spaces that respond to children's needs and to 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).

Project name: **Safe sanitation in rural communities**

Chain / plant: **Integral Solutions / Pavco de Occidente, Guachené, Colombia**

Benefited community: **Guachené, Villa Rica, and Puerto Tejada**



Construction of community wastewater treatment systems and bathrooms in the rural area of the municipality of Guachené, Villa Rica, and Puerto Tejada, Department of el Cauca, so that families and schools in the rural area of Guachené and the other municipalities have systems that will allow them to safely handle wastewater, including excreta and detergents, to prevent diseases such as acute diarrhea, parasitism, and dengue, which affect mainly children in the region.

Project name: **Coco Arte: Teaching vulnerable young people how to become artisans**

Chain / plant: **Integral Solutions / Mexichem, Colombia (Pavco) Colombia**

Benefited community: **Ciudad Bolívar, Altos de Cazucá**



This project will train young people how to create handcrafted pieces, accessories, and ornaments. The project aims to reuse organic materials and give the participants training to develop business initiatives.

Project name: **Archery in poor schools in Medellin**

Chain / plant: **Integral Solutions / Mexichem Colombia (Pavco) Colombia**

Benefited community: **Least favored sectors of the population**



Archery is a sport that requires intense concentration. Practicing archery contributes to physical development, promotes a healthy lifestyle, and helps improve academic performance. This project seeks to promote this sport by training eight groups of people in one and a half hour practices, twice a week, for six months. In addition, a tournament is planned at the end of the training process.

Project name: **Follow-up on the "Water guardians" project**

Chain / plant: **Integral Solutions / Mexichem Costa Rica**

Benefited community: **San José metropolitan area**



Renovate the water-conduction systems in three educational centers from the months of September 2011 to July 2012.

Project name: **Building Dreams Together**

Chain / plant: **Integral Solutions / Mexichem Honduras**

Benefited community: **La Nueva Esperanza community, Puerto Cortés**



Habitat for Humanity has a project in the department of Puerto Cortés called New Hope. This project will benefit 100 families through subsidized housing, with long-term, nominal-rate financing. However, there are approximately 25 families located in the center of the project surrounded by the community, and because of their economic situation, they could not participate in this program. Mexichem Honduras built alliances with the local government, NGOs, private and public companies, and the neighboring community, including the recipients, to help those 25 families. In this phase, the company will help 10 families (50 people).

Project name: Rainwater management
Chain / plant: Integral Solutions / Mexichem Guatemala
Benefited community: Community of Monte Carlos and nearby areas



This project will prevent flooding problems by directing rainwater to the ground where it will stay in the water table for reuse in the community. This will prevent having to channel the water toward nearby canyons, thus avoiding the transfer of the problem to other communities. This project complements an integral solution, the completed Sewage Water Management system.

Project name: Incorporating children from the Panorama community in an art workshop for employees' children
Chain / plant: Integral Solutions / Mexichem Ecuador (Amanco Plastigama)
Benefited community: Community of Panorama, Cantón Durán



Participating in drawing and theater workshops allows children in the community to develop their innate artistic talents. The project also helps strengthen relationships with our closest neighbors.

Project name: Educating values for life
Chain / plant: Integral Solutions / Mexichem El Salvador
Benefited community: San Luis La Herradura



This project seeks to train middle school and high school teachers to teach values through interconnecting themes in education, incorporating them into the curricula so that these values become part of their students' daily lives. The project also expects to train students to become leaders in their communities who will then promote good practices and values. Workshops on values in each theme will be given to teachers and young student leaders, to lay the groundwork and supplement the teachers' work.

Project name: Amanco and SENAI: Removing barriers and training hydraulics specialists in the communities
Chain / plant: Integral Solutions / Mexichem Brazil
Benefited community: Urban and rural



The Amanco and SENAI project was established to respond to one of the biggest deficiencies in the civil construction market in Brazil: the training of labor. It was developed jointly to promote training of hydraulics installers in the 27 states in Brazil and to ensure, through SENAI certification, in combination with Mexichem Brazil, the development of professionals in this sector of civil construction, taking the basic principles of sustainability into account in the training.

Project name: Educational and sports activities for the children of Pasacaballos
Chain / plant: Chlorine-Vinyl / Mexichem Resinas, Colombia
Benefited community: Pasacaballos, district of Cartagena



This program educates and provides a positive impact on children and their families through a children's soccer competition, encouraging a better use of free time, family integration, and the overall development of Pasacaballos children.

Project name: Developing skills to handle chemical products in everyday life
Chain / plant: Chlorine-Vinyl / Mexichem Derivados Colombia
Benefited community: Cajicá



Chemical companies are part of the community of Cajicá. Young people, when completing middle school, need to start preparing to work in these companies, or begin 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 uses of these substances and their potential. Therefore, students are prepared so that it might be easier in the future to find work in this type of company and to participate in local emergency-care committees. The project includes two 10th-grade courses of 30 students each year at the local departmental school and practical workshops in these subjects.

Project name: **Lago del Niño (Lake of the Child)**
Chain / plant: **Chlorine-Vinyl / Mexichem Resinas Vinílicas, Mexico**
Benefited community: **Xicohtzinco, Tlaxcala**



For many years, natural reserves have continued to be abandoned in the state of Tlaxcala. Various areas have been devastated by people's irresponsible actions; therefore, we could not sidestep the opportunity to be a positive influence on the environment. 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 the estimated 12,500 people living in the area of Xicohtzinco. The phases of rehabilitation were: 1) Direct participation of area residents, sweeping and cleaning; 2) intervention with specialized heavy equipment and machinery; 3) securing the newly protected area and refurbishing the park for recreation and leisure visitors; 4) stocking fish in the lake, and planting trees and vegetation strategically; and 5) creating a guard network.

Project name: **For the healthy development of children in the community**
Chain / plant: **Chlorine-Vinyl / Mexichem Resinas Vinílicas and Mexichem Compuestos, Mexico**
Benefited community: **Colonia Lázaro Cárdenas, Altamira, Tamaulipas**



We continue to work on fixing the green areas of the Lázaro Cárdenas neighborhood in Altamira, Tamaulipas.

Project name: **Ecology tournament**
Chain / plant: **Fluorine / Mexichem Flúor, Mexico**
Benefited community: **Matamoros, Tamaulipas**



Mexichem organized the Second Ecology Tournament for employees' children and students from schools in the neighboring area to promote the care and protection of the environment, with activities such as reforestation and raising awareness through videos, conferences, painting, and contests focused on promoting environmental care. The purpose of the tournament is to teach children to live in harmony with wildlife—flora and fauna—in addition to encouraging an atmosphere of family unity among our employees.

Project name: **Quality Schools**
Chain / plant: **Fluorine / Mexichem Flúor, Mexico**
Benefited community: **Community of Ejido las Rusias, Matamoros**



Over the years, Mexichem has annually provided financial and in-kind support for improvements in school facilities, which has been well-spent in the construction of new spaces or maintenance of existing buildings. The opportunity for students to have these better facilities will undoubtedly allow them to make better progress in their classes. For this Quality Schools Program, the government matches 50% of the funds raised by each participating school. Mexichem Fluor, 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.

Project name: **Junior high school in La Salitrera**
Chain / plant: **Fluorine / Mexichem Flúor, Mexico**
Benefited community: **Municipality of Villa de Zaragoza, San Luis Potosí**



Construction of a junior high school building for young people in the community of La Salitrera and in neighboring communities.

Project name: **Building the Future of La Salitrera Together**
Chain / plant: **Fluorine / Mexichem Flúor, Mexico**
Benefited community: **Municipality of Villa de Zaragoza, San Luis Potosí**



This program offers support for low-income families in the community of La Salitrera and neighboring towns who need support to improve their quality of life. It seeks to provide a stable, do-it-yourself program to help participants build or improve their own homes with concrete bricks that they make themselves. Blocks are provided for building, modernizing, expanding, and modifying rural housing. Mexichem Flúor hires the supervisor and provides the facilities, machinery, raw materials, and training. The community provides labor for making their own bricks, as well as a token payment to "buy" the bricks, thus making the program sustainable.

Project name: **Agriculture in the community of Santa Catarina**
Chain / plant: **Fluorine / Mexichem Flúor, México**
Benefited community: **Community of Santa Catarina, San Luis Potosí**



This project benefits 58 families by irrigating 130 hectares of land with seasonal irrigation.

Project name: **Construction of a sustainable junior high school**
Chain / plant: **Fluorine / Mexichem Flúor UK, United Kingdom**
Benefited community: **Saughall, Chester**



Construction of a new junior high school with a self-sustainable, environmentally friendly design to support quality education for 280 young people. The project required closing two schools and transferring those students to the new buildings without them losing school days. We are working on the finishing touches, including designing the gardens and courtyards.

Project name: **Supply of uniforms for a school in Nairobi, Kenya**
Chain / plant: **Fluorine / Mexichem Flúor UK, United Kingdom**
Benefited community: **Dagoretti Slum, Nairobi, Kenya**



Mexichem donated 2,000 uniforms to Mahali Pa Watoto students in a neighborhood of Nairobi, Kenya. The school was built with donations at a fraction of the original cost estimate for its construction. Funds are also being raised to help expand the school.



Education



Ecology



Recreation



Culture



Health



Housing



Children in Bogotá, Colombia



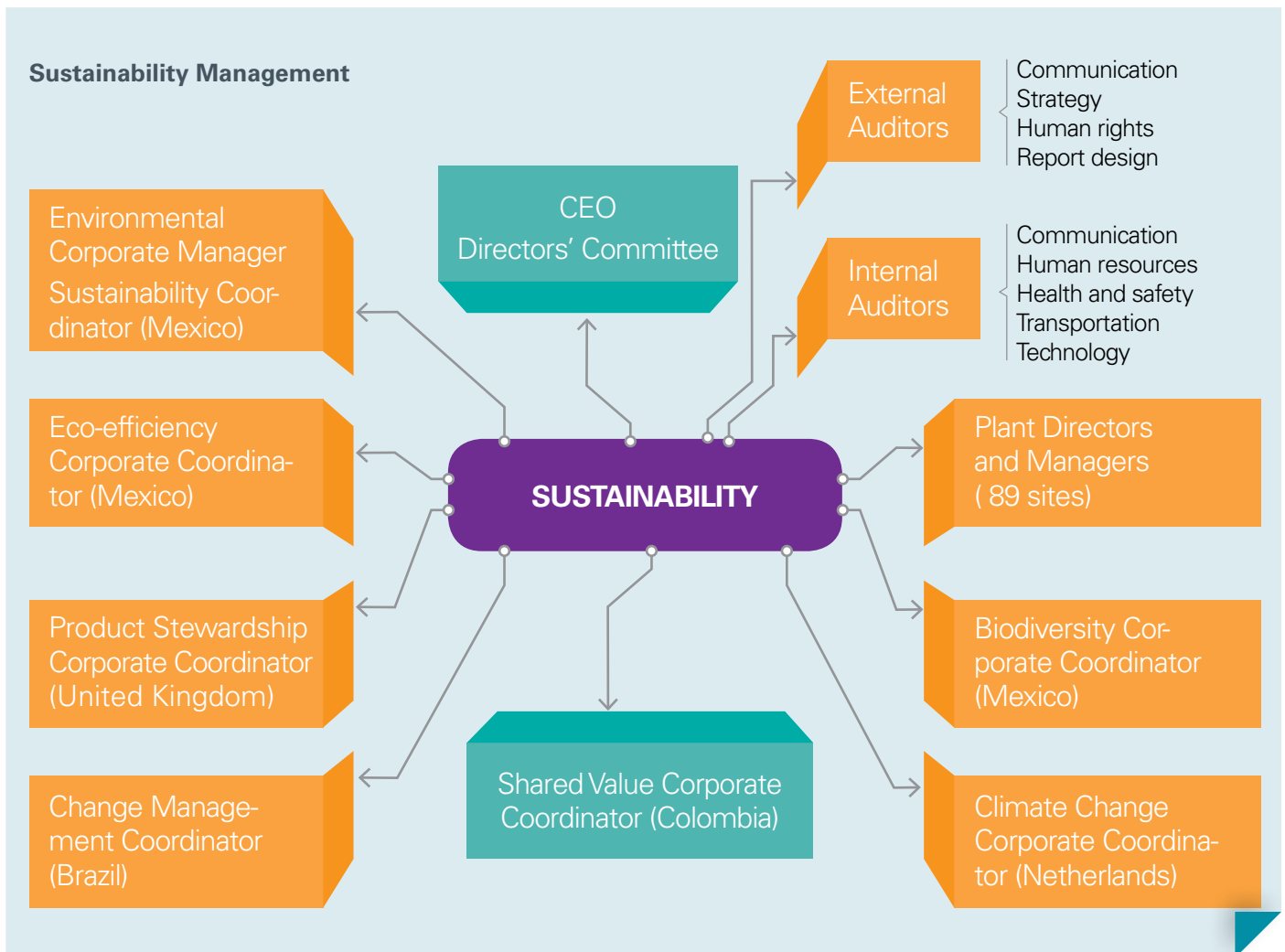
Planta Coatzacoalcos en México

7. environmental

DIMENSION

Mexichem is committed to environmental protection . Our actions to help protect the environment are focused on minimizing the local impact of our production plants, valuing our surroundings, and implementing initiatives that contribute to improving the quality of life of communities in environmentally important zones and to preserving those areas.

Mexichem has initiated a strategy to develop a formal planning system that defines strategic objectives, aligns operating goals, and measures and evaluates triple-bottom-line performance, which ensures compliance with GRI requirements and approves good sustainability practices at Mexichem, incorporating the talent of our employees at all operating sites.



The strategy includes the following aspects: communication with stakeholders; innovation; eco-efficiency; energy efficiency; alternative sources of energy; biodiversity and protection of vulnerable ecosystems; social projects in communities (identify impacts, meet needs in items associated with Mexichem); training; human rights within the company; restoration or restitution of possible negative impacts; research and development for safer products; practices for shared value at business units (copy successful cases); support for training groups for ongoing improvement and innovation.

Initiatives to mitigate environmental impact:

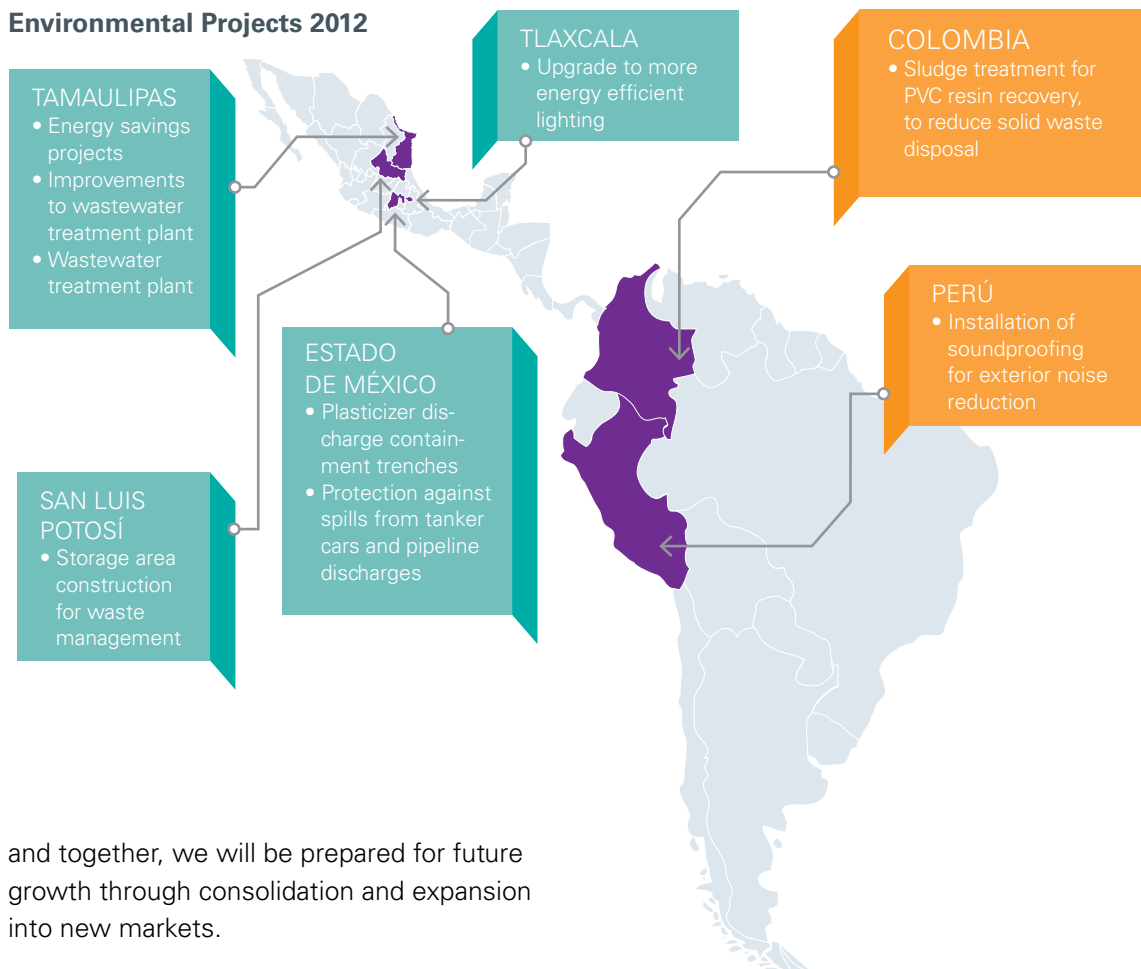
- Optimizing the use of water and energy
- Reducing industrial waste
- Controlling atmospheric emissions

- Designing plans to protect biodiversity, soil, surface water, and aquifers
- Conducting research and development to design and produce safer and more environmentally sound products. [EN26](#)

7.1 Impact of new plants on environmental performance

In 2012, Mexichem acquired Wavin, a leader in the production of plastic pipe systems in Europe. The combination of Wavin and Mexichem has made us the global leader in plastic pipe systems and solutions, based on a combined history of innovation and commitment to customer service. Both companies will benefit from a highly complementary geographic presence, product portfolio, research and development, and business lines,

Environmental Projects 2012



and together, we will be prepared for future growth through consolidation and expansion into new markets.

The Fluorine Chain acquired the manufacturer known as Fluorita de México. With this acquisition, Mexichem will have access to fluorite with the highest level of purity in the world, which guarantees the viability of its operations in England as well as in Asia for the coming years. This integration is part of a series of investments for the production of a new generation of refrigerants that are more environmentally friendly.

The impact of this acquisition on our environmental performance is reflected in the increased consumption of raw materials, natural gas, and water. The consumption of electricity also increased as a result of the integration of a significant manufacturing operation.

7.2 Investments in environmental projects

In 2012, we made investments in environmental projects in the amount of USD9.2 million,

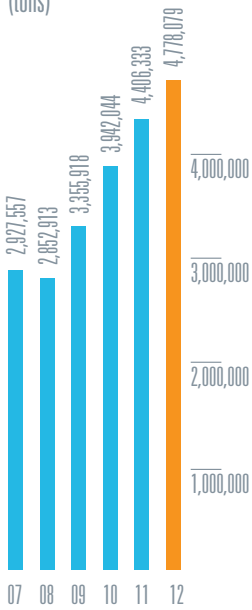
mainly in activities to optimize and save energy, and also in water treatment systems, protection against chemical spills, noise reduction, and handling of industrial waste. [EN30](#)

7.3 Use and consumption of natural resources and materials

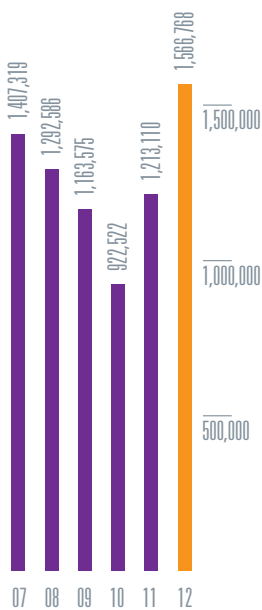
The basic raw materials used to manufacture Mexichem products are essentially salt (sodium chloride) and fluorite (calcium fluoride). These two raw materials are obtained through extraction processes in the mines the company owns in Mexico. The remaining raw materials are basic chemical products, petrochemicals, commodities, and auxiliary chemical products. [EN1](#)

During 2012, we resumed extracting sulfur from our plant in Veracruz, Mexico. The mining

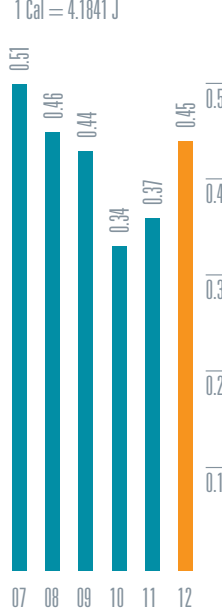
RAW MATERIAL CONSUMPTION, 2007-2012 EN1 (tons)



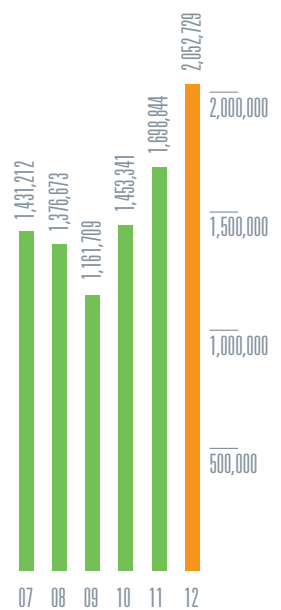
ELECTRICAL ENERGY CONSUMPTION Gcal/year EN4



INDIRECT CONSUMPTION OF ENERGY (Gcal per ton sold) 1 Cal = 4.1841 J



NATURAL GAS Gcal/year EN3 1 Cal = 4.1841 J



1 Cal = 4.1841 J
Electrical energy consumption was 21% higher than the previous year due to increased production.

was reexamined, and zones with better accessibility to the mineral were detected to improve ecoefficiency of the operation. Mexichem is reforesting as compensation for the environmental effects of clearing the land to access drilling areas. EN26 This operation has a closing plan that includes the environmental recovery of the site for a 20-year period. MM10

We have progressively increased our consumption of materials during the past few years because we have more plants and, therefore, a greater demand for materials.

Our industrial recycling rate is 10%, on average. The best performance is in our Integral Solutions Chain, where out-of-specification PVC waste is recovered and reintegrated into processing, thus closing out the product life cycle. EN2



Employee with students in Runcorn, United Kingdom

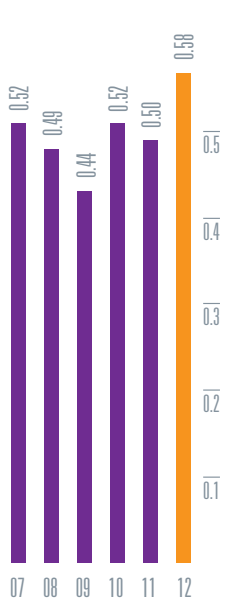
7.4 Efficient use of water and energy

Energy consumption

The main sources of energy Mexichem consumes are electrical energy and natural gas. Most of the energy we use comes from electricity provided by outside companies. We also use gas, diesel, liquefied petroleum gas (LPG), and, to a lesser extent, steam, which we purchase from a third party. Our suppliers generate the energy we consume with thermoelectric, hydroelectric, coal-generated electric, geothermal-electric, wind-generated electric, nuclear-generated electric, and biomass plants. EN4

NATURAL GAS CONSUMPTION

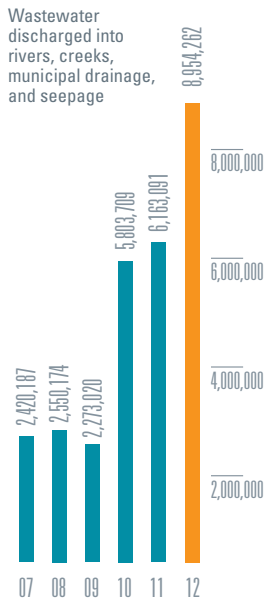
(Gcal per ton sold)
1 Cal = 4.1841 J



TOTAL DISCHARGE OF WASTEWATER

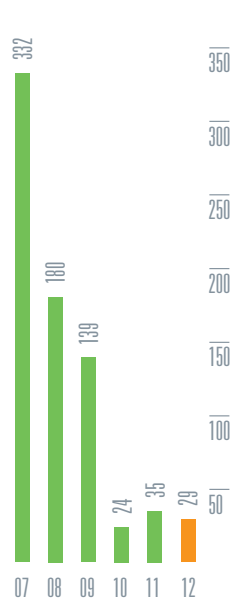
(cubic meters)

Wastewater discharged into rivers, creeks, municipal drainage, and seepage



EMISSIONS OF OZONE-DEPLETING SUBSTANCES EN19

(tons)



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. In 2012, Mexichem continued its efforts to reduce energy consumption and achieve concomitant

savings. The data reflect greater consumption resulting from an increase in the number of plants and a growth in the volume of global production, while the consumption of electrical energy obtained from third parties in 2012 was 21% more than the previous year. EN4



Sustainability Committee members

Water consumption in our operations

(cubic meters) [EN8](#)

	Surface water	Ground-water	Total water extracted
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
2012	11,422,723	3,153,909	14,576,631

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 54% of the water that we utilize, mainly in the mineral concentration processes at our fluorite mine. [EN10](#) In this way, only 46% of the water used is "first-use" water.

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 the CO₂ emissions generated directly by our company. Our direct energy consumption of natural gas in 2012 was 21% higher than the previous year, due primarily to a greater number of production operations and the consequent increase in production. [EN3](#)

Mexichem is evaluating the use of renewable sources of energy to ensure the sustainability of its operations. The Altamira plant, which is dedicated to the production of PVC resins in Mexico, it currently produces 62% of its electric energy by cogeneration. In Coatzacoalcos, Mexico, where the main Mexichem plant producing chlorine is located, we are considering a study on the viability of using alternative energy sources in these plants, including wind power and solar energy. [EN6](#)

Greater savings will depend on both the construction of the cogeneration plant in

Water recovery in our operations

(cubic meters)

	Recycled and re-used water (m ³ /year)	Recycled and reused water (as % of the total extracted)
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
2012	10,899,117	54

All Mexichem plants have facilities to treat wastewater prior to discharge. The treatment meets and exceeds the standards required by legislation in each country in which we operate. The return of treated water to surface bodies, municipal drainage, and seepage was 8,954,262 m³. This number includes runoff water collected during the rainy season in the plants that have artificial dams or vessels. [EN21](#) In conducting a 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%.

Coatzacoalcos, Mexico, and the implementation of alternative energies, such as the installation of solar panels for supplying energy to the lighting network planned for the Coatzacoalcos and El Salto plants as well as for the administrative headquarters in Tlalnepantla, Mexico. In 2012, an energy savings of 1.4% was achieved thanks to conservation programs and improvements in operating efficiency. [EN5](#)

Actions taken to save energy included: shutting down processes during peak use hours to save energy, installing thermal covers on extrusion machinery, insulating chilled water piping to save energy, and using on-site power generators during peak use hours. [EN7](#), [EN18](#)

Other investments implemented at Mexichem plants to save energy include increasing the number of electrolytic diaphragm cells to reduce current flow in the production of chlorine-soda; exchanging electric motors for high-efficiency ones, replacing incandescent bulbs with energy-saving bulbs,

increasing the efficient use of hydrogen 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 reduction in line equipment and in the number of ventilators in the cooling towers during the winter months. [EN7](#)

Water consumption

Water represents an indispensable resource for mining operations, processing, and operation at Mexichem. Most of our plants have closed-loop circuits, and all of our plants operate wastewater-treatment systems. These systems recover more than 54% of the water used. Mexichem seeks to extend the recirculation and reuse of water to all of its plants to help reduce water consumption and mitigate the risks of water shortages. This will also prevent possible punitive or regulatory actions by authorities that manage this resource in the countries in which we operate. [EN26](#), [EN10](#)

The consumption of first-use water in 2012 was 14,576,631 m³. The extraction of water from surface water bodies was 78%; 22% was extracted from aquifers. This means that 78% 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 replenishment of these water supply sources. Only 22% comes from the extraction of groundwater, where natural replenishment is more complicated. [EN8](#)

7.5 Controlling emissions and industrial waste

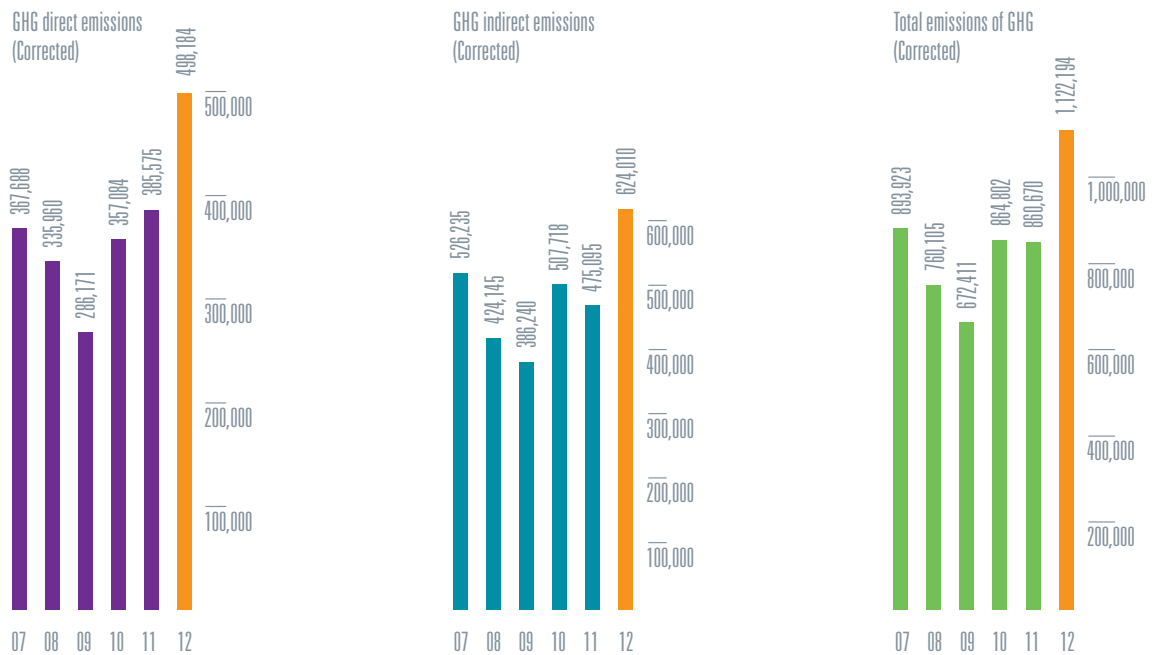
Mexichem continuously or periodically monitors emissions of gases and particulates at all of its facilities to guarantee the health and safety of its employees and the neighboring communities, as well as to protect the environment.



Employee in PVC pipe processing in Guayaquil, Ecuador

TOTAL GREENHOUSE GAS EMISSIONS EN16

Equivalent tons of CO₂ per year



Greenhouse gas emissions

Mexichem has been recording GHG inventories at its operations since 2007, and records direct and indirect emissions related to the consumption of electrical energy. These emissions are calculated based on the methodology of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), also considering emission factors from the Federal Electricity Commission (CFE) reported in the GHG program of Mexico (www.geimexico.org/) and the International Energy Agency's "CO₂ Emissions from Fuel Combustion" 2010 edition. The values from 2007 to 2012 have been recalculated per the criteria from the WRI, the WBCSD, and the International Energy Agency factors. This calculation includes the values of NO_x emissions and the consumption of fuels such as natural gas, LP gas, diesel, and gasoline, in both fixed as well as movable sources, converted into equivalent tons of CO₂. EN16, EN17 In 2012, the combined emissions of NO_x and SO_x were equivalent to 351.7 tons. EN17, EN20

Mexichem's GHG emissions have also been affected by the acquisition and incorporation of new plants and companies. The levels reached in 2012 reflect the acquisition of PVC pipe systems production plants in Europe and China, as well as a fluorite mine in Mexico.

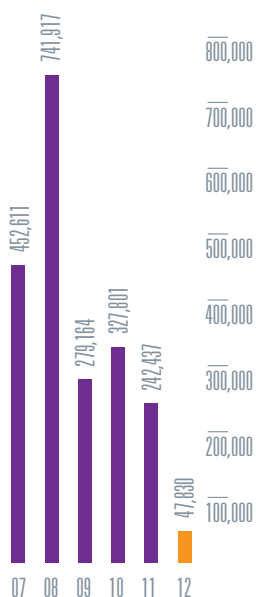
Our plants will continue to implement various plans for eco-efficiency in our processes, updating technology, and evaluating alternative options for renewable energy. EN18

Management of industrial waste

We manage 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 provides value through reuse, such as wood, cardboard, paper, and industrial oils used as fuel in cement plants. Other types of waste, such as plastics, can be recycled.

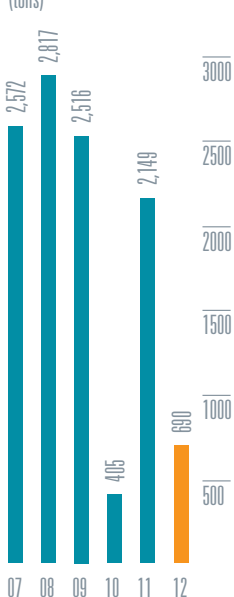
WASTE MANAGED EN22

Total weight of waste handled (tons)



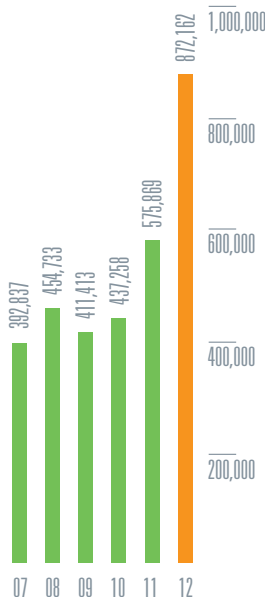
HAZARDOUS WASTE TRANSPORTED LOCALLY TO BE TREATED

(tons)



AMOUNT OF TAILINGS MM3

Total tailings, slag, and sterile material in tons



In 2012, we managed a total of 47,830 tons of waste. Ninety-nine percent was nonhazardous waste, and 1% was considered hazardous waste. The disposal methods used were 80% sanitary landfill and compacted waste cells; 2% incineration; 17% reuse and recycling; and 1% industrial containment.

In some cases, waste that results from industrial operations such as subproduct processing, requires special handling. Mexichem has established procedures for this class of waste that delineates its sustainable use and/or final destination, such as road paving, fill, and compacting materials. EN22

Of the packing materials used in the distribution of Mexichem products, such as paper bags or industrial plastics, pallets, and containers, 12% are recovered at the end of their useful life. EN27

The hazardous waste generated by Mexichem operations is handled locally in temporary warehouses and is subsequently sent either to controlled confinement sites or for stabilization or recycling treatment, in compliance with the environmental regulations of each country. In 2012, Mexichem did not transport any hazardous waste internationally. EN24

Hazardous waste transported locally for treatment and disposal in confinement sites

In 2012, there were four accidental spills of chemical products (two spills occurred in Mexico and two in Colombia), representing a total of 16 m³. Mexichem plants have specific plans and trained personnel to handle accidental spills, both inside our operations as well as during transport. Therefore, these accidents and their impacts were efficiently controlled, and the materials were recovered or neutralized, preventing any impact to the environment. EN23, EN24

Generation and handling of tailings and waste-rock dumps

None of the mining operations are conducted in or adjacent to 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 is owned by communal farms. The land used for mining operations is regulated through a land lease contract with the communal landowners. [MM5](#) No conflicts exist with respect to use of the land, because the concessions have been granted by the Mexican government for extraction of minerals, thus avoiding any controversy related to land use. [MM6](#), [MM7](#)

In 2012, Mexichem suspended operation in all of its mines and processing plants that are run by a small group of individual miners by mutual consent, as they did not agree to adhere to Mexichem's safety and environmental protection measures and standards governing mining operations. [MM8](#) The families of these miners

were not relocated, as there were no settlements on Mexichem land. [MM9](#)

7.6 Compliance with applicable environmental regulations

Mexichem received no fines or was assessed no fines or sanctions for failure to comply with environmental regulations during 2012. [EN28](#) Nor did Mexichem cause any significant environmental or logistical impacts as a result of the transportation of products or personnel during the year covered by this report. [EN29](#)

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



Ribeirao das Neves, Brazil



Water dam, fluorite mine in San Luis Potosí, México

7.7 Protection of vulnerable ecosystems and biodiversity

Protected or restored habitats

Mexichem owns areas of land in Mexico where it carries out mining and ore processing operations for nonmetallic minerals such as fluorite and salt, located in zones where there is significant biodiversity. In 2007 Los Álamos, was declared by SEMARNAT to be a protected area of the Biosphere Reserve of the Sierra Gorda, Guanajuato. Without causing any damage to the reserve, this site functions as an area where fluorite is extracted from waste discarded by operations prior to Mexichem coming into the zone in 2008. [EN11](#)

Mexichem's biodiversity strategy is centered on its fluorite-mining operations, which may have an impact on the environment. This strategy has three areas of focus:

1. The operation itself, which reduces the volume of waste available in the zone, complying with the regulations established by the SEMARNAT and the Mexican General Law for the Prevention and Integral Management of Wastes; and
2. Not altering the ecosystem through operation of the mine, as this activity consists of recovering fluorite from waste material previously used; and
3. Implementing a plan for the recovery and protection of biodiversity in the zone. [EN13](#)

Strategies and actions to limit negative impacts on biodiversity

The most significant impacts from Mexichem's mining operations are:

- Generation of waste and tailings
- Alteration of the ecosystem
- Effect on biodiversity [EN12](#), [EN14](#)

We perform environmental impact studies to identify activities that are necessary to control risks and impacts on biodiversity, such as the following: [EN14](#)

Focus	Actions
Species that inhabit the region	<ul style="list-style-type: none"> • Monitoring • Recording events related to each species
Quality of air and water	<ul style="list-style-type: none"> • Monitoring
Waste	<ul style="list-style-type: none"> • Ensuring the proper management and the best possible recovery of waste
Communities	<ul style="list-style-type: none"> • Supporting organizations that preserve biodiversity • Establishing efficient communication channels with stakeholders
Invasive species	<ul style="list-style-type: none"> • Monitoring and control
Native vegetation	<ul style="list-style-type: none"> • Reforesting • Follow-up and control of the restored population density
Physical, chemical, and temporal dimension	<ul style="list-style-type: none"> • Study of physical and chemical indicators • Toxicity studies • Study of bioindicators of environmental health

		Subject to special protection	Threatened species	Endangered species		
Río Verde	Skunk	<i>Spilogale pygmaea</i>		Rattlesnake	<i>Crotalus molossus</i>	
Álamos	Barrel cactus (Cactus)	<i>Ferocactus Histrix</i>	Golden eagle	<i>Aquila Chrysaetos</i>	Quail	<i>Colinus virginianus</i>
			Sparrow	<i>Spizella wortheini</i>		
Villa de Zaragoza	Skunk	<i>Spilogale pygmaea</i>		Rattlesnake	<i>Crotalus molossus</i>	

Endangered species whose habitats are located in areas affected by our operations EN15

Mexichem is concerned about those species found in the areas where its mining installations were built. Therefore, we think it important to understand the species and determine their level of risk. In this process, a total of six species have been identified, with different levels of risk of extinction, according to the National Commission for Knowledge and Use of Biodiversity (CONABIO): two vulnerable species, two threatened species, and two critically endangered species. These species can be found in the areas of one mine and two fluorite-processing plants in Mexico: Villa de Zaragoza and Río Verde in San Luis Potosí; and Álamos de Martínez in Guanajuato.

Biodiversity of water resources and related habitats

Mexichem reports that the discharge of wastewater from its operations does not affect any aquifers. Mining units reuse all of the water in their areas of operation. Chemical and manufacturing plants use wastewater treatment systems to meet and exceed the parameters of water discharge regulations. EN25

In the case of the fluorite extraction mine in Río Verde studies show there is no biodiversity that will be affected in the runoff areas. In the operations in Álamos de Martínez, Río Verde, and Villa de Zaragoza, water is handled in a closed cycle EN25.

Management plans for protection of biodiversity

We perform an environmental impact study in all of our mining operation sites. Based on the results, we formulate plans to protect biodiversity. MM2

Biodiversity protection management plans

Mine operation phase: Exploration and planning of a deposit

Requirements: Buffer area and compensation plan

- Río Verde
- Álamos
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Conduct a Risk Analysis for the ecosystems:

- Including an evaluation of the probability that adverse effects may occur or are occurring as a result of exposure to one or more environmental stressors.

Mine operation phase: Exploration and planning of a deposit

Requirements: Identification of endangered species

- Álamos
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Identify presence of species in the field, their type and the risks to which they are exposed.

Mine operation phase: Exploration and planning of a deposit

Requirements: Level of acoustic and light pollution for species

- Río Verde
- Álamos
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Conduct study and perimeter analysis of noise and light (including acoustic levels in the area housing the installations and their exterior, as well as light pollution).

Mine operation phase: Exploration and planning of a deposit

Requirements: Protection of the species

Mitigation of adverse effects in the reproduction phase of protected and vulnerable species

- Río Verde
- Álamos
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Develop and carry out programs for protection of the species found at the operation sites.

Mine operation phase: Exploration and planning of a deposit

Requirements: Preservation of the recharge levels in aquifers

- Río Verde
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Aquifer recharge study, including:

- Rational management of water resources
- Comprehensive use of rainwater, recharge of aquifers
- Mechanisms for preservation of natural resources

Elaboration of a strategic plan considering the restoration of the ecosystem, including the following areas:

- Current control
- Reduction of soil-erosion processes
- Sustainable development of the natural resources, taking socioeconomic and sociocultural aspects into consideration.

Mine operation phase: Exploration and planning of a deposit

Requirements: Evaluation of efficiency in the compensation plans

- Río Verde
- Álamos
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Compliance with conditions established by the authorities.

Mine operation phase: Exploration and planning of a deposit

Requirements: Monitoring buffer zones, ecosystem health, and level of surrounding biodiversity

- Río Verde
- Álamos
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Execute a biodiversity program, including distribution of species of flora and fauna, spatial distribution, and population density.

Mine operation phase: Exploration and planning of a deposit

Requirements: Training of stakeholders about the care and protection of threatened species, and how to proceed if encountering one of them

- Río Verde
- Álamos
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Create a communication and training program that includes:

- Dissemination of knowledge
- Monitoring of knowledge of plant employees and external personnel attached to the site facilities

Creation of workshops for the communities, including:

- Good community relations practices
- Conferences, workshops, courses, and projects supporting the local population.

Mine operation phase: Exploration and planning of a deposit

Requirements: Support of NGOs that protect endangered species

- Río Verde
- Múzquiz

Actions to be taken by Mexichem

Create relationships with NGOs for the protection of flag species in the areas of operation.

Mine operation phase: Exploration and planning of a deposit

Requirements: Avoid erosive processes (paying attention to the degree of slope of the embankments)

- Río Verde
- Álamos
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Adapt the embankments to "Tailings Waste – Alteration of embankments" in compliance with the NOM-141-SEMARNAT-2003

Perform safety-factor study on the embankments.

Mine operation phase: Exploration and planning of a deposit

Requirements: Monitoring air quality

- Río Verde
- Álamos
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Study and program for monitoring suspended particles, including:

- Toxicity level of suspended particles at the site and surrounding areas
- Negative effects they cause on the ecological balance.

Mine operation phase: Exploration and planning of a deposit

Requirements: Monitoring the quality level of the discharge of different types of water

- Río Verde
- Álamos
- Múzquiz

Actions to be taken by Mexichem

Create a logbook on discharges of wastewater and water quality analysis for discharges of water.

Mine operation phase: Exploration and planning of a deposit

Requirements: Emissions calculation

- Río Verde
- Álamos
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Completion of the Exclusive Environmental License, which must include the measurements of emissions into the atmosphere taken at the site, suspended particles, and work environment.

Mine operation phase: Reincorporating deposits to the surrounding ecosystem once extraction ends

Requirements: Following up on reforestation actions

- Río Verde
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Development and execution of the Reforestation Program that includes recovering endemic species, as well as following up on and controlling the population density of the reintroduced species.

Mine operation phase: Reincorporating deposits to the surrounding ecosystem once extraction ends

Requirements: Reintegrating the ecosystem before the end of mining operations (not necessarily once all operations have concluded)

- Río Verde
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Development and execution of a reintroduction program for the site.

The program examines restitution activities, from the operation phase to the final closing, in compliance with different regulations:

- NOM-157-SEMANRNAT-2009: Establishes operations for closing of mining-related operations;
- NOM-141-SEMARNAT-2003: Establishes the environmental protection requirements for warehouses storing the waste tailings from fluorite recovery operations.

Mine operation phase: Reincorporating deposits to the surrounding ecosystem once extraction ends

Requirements: Monitoring the health of the ecosystem reintroduced in the area

- Río Verde
- Álamos
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

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.)

Mine operation phase: Reincorporating deposits to the surrounding ecosystem once extraction ends

Requirements: Biochemical monitoring of the soil

- Río Verde
- Álamos
- Patio San Luis
- Villa de Zaragoza
- Múzquiz

Actions to be taken by Mexichem

Study of chemical indicators and consideration of regulations:

- Including mobility and bioavailability (based on chemical's properties); degradability in the environment, which examines the presence of intermediate compounds or final degradation products; and trace elements.
- The limits established as maximum values according to NOM-147-SEMARNAT/SSA1-2004

Toxicity study:

Includes bioavailability of any organic or inorganic pollutant present in the soil, expressed in terms of toxicity, biodegradability, and extractability over time.



Fluorite mine in San Luis Potosí, México

Our main mining operation is the fluorite (calcium fluoride) extraction mine located in the village of La Salitrera in the municipality of Villa de Zaragoza, in San Luis Potosí, Mexico. Its estimated surface area is 500 hectares, approximately 50 of which are for the mining operation, while the remaining 450 have not been impacted. [MM1](#), [EN11](#)

No natural resources requiring special attention were identified in the mine's zone of influence. Only one species of flora with a special protected status, the biznaga de lana cactus, grows in proximity to the mine, and it is in an area that is not currently affected, nor is it expected to be affected by future mining operations. [EN11](#), [EN12](#), [EN13](#), [EN14](#), [EN15](#)

We have future closure plans for two mines (66%), fluorite (San Luis Potosí), and the sulfur mine in Jáltipan, Veracruz. The mine in Muzquiz, Coahuila, was acquired in 2012, and the relevant environmental protection plans are being improved and developed. [MM10](#)

8. Preparing for Climate Change

Mexichem is aware of the effects of climate change and is working proactively in reducing its risks and looking for business opportunities now and into the future. Our Mexican operations have already completed an initial evaluation of potential opportunities and impacts. The methodology used will be extrapolated to other regions of the world where Mexichem has operations and/or markets. The effects of climate change that have been identified are desertification and drought, rising sea levels, changes in rainfall patterns, decreased water availability, deforestation, and disease in the zones in Mexico where Mexichem has operations or market presence. [EC2](#)

Climate change may mean higher expenses because of adapting operations due to 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, including: opening new niches and markets, introduction of products that contribute to adaptation and mitigation of climate-change impacts, long-term positioning, and preference of the consumer for companies committed to environmental care and social responsibility.

Mexichem is investing in a research center in the United Kingdom to develop refrigerants with a lower global-warming potential. While these new refrigerants will continue to be equally—or more—effective, they will at the same time help decrease our role in climate change.

Mexichem has a series of projects in its three different chains that take into consideration climate change, market tendencies, and the demand for products, among other factors, to help achieve the longevity of our operations.

Indirect economic impact

By evaluating its facilities and the surrounding communities, Mexichem has identified

the areas most vulnerable to climate change impacts. Protecting or moving operations (or workforce) from those areas may save the lives of the inhabitants and is more economical than repairing the damage caused by a disaster. [EC9](#)

Mexichem will be able to monitor the progress of diseases that may endanger its workforce or the food they eat. Monitoring will allow us to warn any settlements where a Mexichem workforce is located of such potential risks, and protect them at the same time. In addition, Mexichem will not deplete the local water supply because our operations are efficient and have a high percentage of recycling or closed-loop water systems.

An economy of scale has been created within the communities near the fluorite mine operation, where community members who have dump trucks and belong to a local association are the ones who transport this material. [EC9, SO1](#)



Wavin corporate offices in Zwolle, Netherlands

Investment in new plants in Colombia.

With Juan Manuel Santos, the President of Colombia, in attendance, Mexichem Pavco held a ground-breaking ceremony for the construction of three new plants in Guachené, Colombia. The project represented an investment of USD24 million. The new plants are scheduled to begin operating in 2013. During the ceremony, Pavco was awarded the Premio Orden al Mérito Comercial (Commercial Order of Merit), in the "High Recognition" Category, for its 50 years of operation in Colombia.



U.N. Global Compact Communication on Progress (CoP) Mexichem Colombia

Declaration of support for the Global Compact

Mexichem Pavco reiterates its commitment to the ten universal principles set forth in the United Nations Global Compact and to sustainable development, which balances economic growth with social progress and conservation of the environment.

Link to the mandatory progress report on the Global Compact page.
http://www.unglobalcompact.org/system/attachments/21181/original/informe_progreso_pavco_abril_BAJA_4pm.pdf?1365005787



Wavin: Leader in solutions for hospitals

Buildings for healthcare, like hospitals, medical centers, clinics, and assisted-living facilities, should provide healthy environment for the patients and personnel. In Europe, these facilities must adhere to strict regulatory standards for sustainable buildings and guarantee adequate levels of safety and hygiene.

Wavin's surface heating and cooling systems control the temperature, are energy efficient, and reduce the risk of air pollution, while its innovative water disposal systems help decrease noise levels. Wavin also has considerable experience in water distribution, as well as in the handling of rainwater from large-surface roofs.



Hydros Project: Water Ambassadors

The Kaluz Group, and its companies Mexichem, Elementia, and BX+ have published the Hydros Project. The project created the website <http://www.projecthydros.com>. The portal has innumerable tools for communication, which allows any institution, company, or person to promote real campaigns for mobilizing people on water conservation. The materials are available to be downloaded, and can be printed or shared on most well-known social networks. There are pictures, posters, stickers, videos, photographic presentations, and educational texts—all ready for free download. A water-footprint application will be launched in 2013, which will also be converted into a game for mobile phones.



Mexichem Fluorine Inaugurates its First Science Fair

Mexichem Fluorine UK held its first “Mexichem Fluorine - OBA Science Fair” with support from Lego and SAFC Hitech. Students from Ormiston Bolingbroke Academy, Halton school, participated in the fair, which was organized to encourage students to submit projects, inventions, experiments, or initiatives that improve the world in which we live. The winning project was the invention of a new nutritious animal feed. The winning student was awarded a Kindle reader, along with a plaque that will be passed on to the winner of the next fair.



Mexichem Integral Solutions Hosts International Seminar

Mexichem Ecuador, and its Plastigama brand, hosted the International Seminar on Irrigation and Spraying in Guayaquil, Ecuador, with more than 200 agronomists, mechanical engineers, irrigation system designers, technicians, installers, professors and students in attendance, all exploring and sharing information on the subject.

Irritec & Siplast, Senninger, the Ecuador Agricultural University, and the Guyamas professional association of Agricultural Engineers and Mechanical Engineers also participated.

The event disseminated up-to-date information on irrigation design and showed the development of new products that optimize water resources and increase crop yield.



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Employees in Mexichem Fluor, Matamoros, México

Affiliations (4.13)

[The Chlorine Institute, Inc.](#)

[NSF Product Certification Organization for Food, Water, and Consumer Goods](#)

[CEMEFI Mexican Center for Philanthropy](#)

[GBC Brazil 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](#)

[Responsible Care®](#)

[SETIQ Transportation Emergencies System for the Chemical Industry](#)

[ECBE Emergency Squad Training School](#)

[BMV Bolsa Mexicana de Valores](#)

(Mexican Stock Exchange)

Ticker Symbol MEXCHEM

[IDIEM Institute for Research and Testing of Materials \(Chile\).](#)

[Acoplásticos \(Colombia\)](#)

[Consejo Colombiano de la Construcción](#)

[Sostenible \(Colombian Council of Sustainable Construction\)](#)

[ICONTEC Institute of Technical Standards of Colombia](#)

[Instituto do PVC \(PVC Institute – Brazil\)](#)

[The Vinyl Institute \(USA\)](#)

[Responsible Care®](#)

[Initiative of the Chemical Industry to](#)

[Improve Health, Safety, and Environmental Development](#)

[The Global Compact](#)

[AMIB Mexican Association of Investor Relations](#)

[LATIBEX Stock market for Latin American stocks](#)

[APLA Petrochemical and Chemical Association of Latin America](#)



Statement GRI Application Level Check

GRI hereby states that **Mexichem, S.A.B. de C.V** has presented its report "Talent for Sustainable Development" (2013) 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. For methodology, see www.globalreporting.org/SiteCollectionDocuments/ALC-Methodology.pdf

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

Amsterdam, 4 April 2013

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

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

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

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 27 March 2013. 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 about Mexichem, you may do so by contacting Juan Francisco Sánchez Kramer, Director of Strategic Planning and Investor Relations (3.4).

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